AMERICAN CIVIL LIBERTIES UNION OF NEW JERSEY; UNITARIAN UNIVERSALIST LEGISLATIVE MINISTRY OF NJ; GLORIA SCHOR ANDERSEN; PENNY POSTEL; and WILLIAM FLYNN,

Plaintiffs-Appellants,

v.

ROCHELLE HENDRICKS, Secretary of Higher Education for the State of New Jersey, in her official capacity; and ANDREW P. SIDAMON-ERISTOFF, State Treasurer, State of New Jersey, in his official capacity,

Defendants-Respondents.

IN THE SUPERIOR COURT OF NEW JERSEY APPELLATE DIVISION

No.: A-004399-13

ON APPEAL FROM FINAL ADMINISTRATIVE ACTION BY THE OFFICE OF THE SECRETARY OF HIGHER EDUCATION

SAT BELOW: ROCHELLE HENDRICKS, SECRETARY OF HIGHER EDUCATION

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NEW JERSEY EDUCATIONAL FACILITIES AUTHORITY

and

STATE OF NEW JERSEY

2014 HIGHER EDUCATION CAPITAL FACILITIES PROGRAMS

SUPPLEMENTAL QUESTIONNAIRE:

SECTARIAN / RELIGIOUSLY AFFILIATED EDUCATIONAL INSTITUTION

Institution:	Beth Medrash Govoha of America
Project Number:	006-01
Mailing Address:	617 Sixth Street Lakewood, NJ 08701
Project Address:	425 11th Street Lakewood, NJ 08701
Contact:	Moshe Gleiberman
Title:	Vice-President of Administration
Phone #:	732-367-1060, Ext. 4248
Mobile #:	848-525-8900
Email:	mgleiberman@bmg.edu

Please provide the information requested below, which will supplement the information you provided in your April 29, 2014 response to the Sectarian/Religiously Affiliated Educational Institution Questionnaire (the "Original Questionnaire").

1. In your response to Item (i) of the Original Questionnaire, you describe a "small program available to advanced students that leads to ordination."

    a. Please explain who or what organization ordains such students.

    A small number of specialized faculty administer a set of oral, one-on-one examinations on topics of practical religious matters. These faculty certify applicants who pass their exams.

    b. Please explain briefly the steps leading to ordination – in particular, please explain whether students in such program are eligible to become ordained upon completion of such program.

    Ordination is a highly individualized and individualistic process pursued only by a few students. The students study intensively, in a self-charted path, in preparation for a series of one-on-one oral examinations.

    c. Please explain why you described such students as "advanced" – what qualifications make them "advanced" and eligible to participate in such program?

    The few who seek ordination were characterized as "advanced," because they are generally students who have already completed a significant number of years of study before they begin their preparation for ordination.

    d. Please identify the required/core courses for such program. Are such courses different from the courses taken by students who are not seeking ordination?

    The ordination process is not a structured program and does not have required courses. The process is initiated by request of individuals to undertake the testing. While there are a small number of courses in the Graduate Program that may be helpful, those seeking ordination engage in substantial self-study outside of any formal course structure in order to pass their examinations.

    e. Do you expect any of the required/core courses for such program to be offered in the proposed Project facilities? No.

    If yes:

        i. In which Project facilities?

        ii. What portion (by square footage) of the Project facilities is expected to be used to offer the required/core courses for such program? Will such portion be a separate classroom or other separate space within the Project facilities?

2. In your response to Item (i) of the Original Questionnaire, you answered that "students who are seeking ordination ***may be deemed*** to participate in a course of religious instruction." Please explain what is meant by the phrase "may be deemed".

    The Original Questionnaire defined "religious instruction" as "instruction in the practice or observance of a particular religion." In light of the definition supplied by the Original Questionnaire, we responded as such.

3. Please elaborate on your answer to Item (j) of the Original Questionnaire, in which you stated that "Because portions of the curriculum may utilize or reference texts with religious origins, they involve "religious study" as that term has been defined for purposes of this questionnaire." Specifically, please describe in detail the purpose of the program of religious study, the specific courses that involve religious study, the texts used, and how such texts are used.

   The Original Questionnaire defined "religious study" as "*the study of religious beliefs, behaviors, texts, institutions.*" In light of that definition supplied by Questionnaire, we answered as noted. As previously responded to the Original Questionnaire, BMG is an institution with a focus on Talmudic Studies. The Talmud is a broad compendium of scholarship that draws on knowledge from a wide array of sources and disciplines, among which are references to religious texts such as the Bible.

4. In your response to Item (l) of the Original Questionnaire, you answered that the Institution is accredited by the "AARTS".

   a. Please describe the "AARTS". Are you referring to the Association of Advanced Rabbinical and Talmudic Studies?

      Yes. (The precise name is the Association of Advanced Rabbinical and Talmudic Schools, a National Accrediting Agency that is recognized by the United States Department of Education and by the Council on Higher Education Accreditation.)

   b. Please describe what criteria the Institution must meet in order to be accredited by the AARTS. What documentation or evidence must the Institution submit to AARTS to be accredited?

      The Institution must demonstrate that it meets AARTS standards, including Standard A, Mission; Standard B, Organization and Administration; Standard C, Finance; Standard D, Physical Plant and Equipment; Standard E, Library; Standard F, Educational Program; Standard G, Faculty; Standard H, Students and Student Services; Standard I, Records & Recordkeeping; Standard J, Graduate Program; Standard K, Other Institutional Activities; and Standard L, Outcomes.

   c. Please provide copies of any materials that describe the requirements for accreditation by the AARTS.

      Attached are copies of AARTS Standards A-L.

   d. Please describe any additional oversight or relationship the Institution may have with the AARTS beyond the accreditation criteria described above.

   The Institution is a member of the AARTS Association of Schools; it pays fees according to the standard structure applicable to the AARTS Association. It currently has representation on the AARTS's Association of Schools executive committee, and on the accreditation commission.

5. Please provide a detailed list and description of all classes offered by the Institution, and indicate which courses are required and which are elective.

Attached please find an Undergraduate Course Catalog and Graduate Course Catalog. We are also attaching a list of required Undergraduate Courses. There are no other required courses.

6. Please identify and describe with detail the classes expected to be offered in the Project facilities.

   N/A

7. The courses described on Attachment A to your response to the Original Questionnaire do not total 150 credits. Please describe how undergraduate students complete the required 150 credits to earn a Bachelor in Talmudic Studies. For example, please provide a complete course listing (which course descriptions) for a typical student who has completed the 150 credit requirement. Please see pages 4 and 5 of the attached Undergraduate Course Catalog.

8. You state in your response to the Original Questionnaire that the Institution is "rooted in Jewish tradition." Are faculty and/or staff required to be of the Jewish faith?

   While there is no formal requirement, the faculty are all of the Jewish faith, the staff are not all of the Jewish faith.

Certification by CEO/Executive Director

As the Chief Executive Officer or Executive Director, I certify that the information submitted in this questionnaire is accurate and complete to the best of my knowledge and belief after due inquiry.

CEO or Executive Director	President and CEO Title
Aaron Kotler Print Name and Title	7/28/17 Date

NEW JERSEY EDUCATIONAL FACILITIES AUTHORITY

and

STATE OF NEW JERSEY

2014 HIGHER EDUCATION CAPITAL FACILITIES PROGRAMS

SUPPLEMENTAL QUESTIONNAIRE:

SECTARIAN / RELIGIOUSLY AFFILIATED EDUCATIONAL INSTITUTION

Institution:	Beth Medrash Govoha of America
Project Number:	006-02
Mailing Address:	617 Sixth Street Lakewood, NJ 08701
Project Address:	655 Princeton Avenue Lakewood, NJ 08701
Contact:	Moshe Gleiberman
Title:	Vice-President of Administration
Phone #:	732-367-1060, Ext. 4248
Mobile #:	848-525-8900
Email:	mgleiberman@bmg.edu

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Attached please find an Undergraduate Course Catalog and Graduate Course Catalog. We are also attaching a list of required Undergraduate Courses. There are no other required courses.

6. Please identify and describe with detail the classes expected to be offered in the Project facilities.

   All classes may be offered, except that anything associated with ordination will not be offered nor take place in the Project facilities.

7. The courses described on Attachment A to your response to the Original Questionnaire do not total 150 credits. Please describe how undergraduate students complete the required 150 credits to earn a Bachelor in Talmudic Studies. For example, please provide a complete course listing (which course descriptions) for a typical student who has completed the 150 credit requirement. Please see pages 4 and 5 of the attached Undergraduate Course Catalog.

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As the Chief Executive Officer or Executive Director, I certify that the information submitted in this questionnaire is accurate and complete to the best of my knowledge and belief after due inquiry.

CEO or Executive Director

President and CEO
Title

Aaron Kotler
Print Name and Title

7/28/14
Date

III. (c) Standards of the Accreditation Commission

A. Mission:

Each institution is expected to have a clearly articulated statement of purpose. Included would be the basic philosophy of the school, its objectives, and the role it expects to play in the educational community. A brief history of the school is often helpful.

This statement provides the intellectual framework around which the institution functions. The educational program, the students it attracts, the outlook of its faculty and the physical facilities it possesses should all be oriented towards attaining the goals implicit in this statement.

The statement of purpose is reviewed periodically. Changes in the institution, in the population it serves, or in the functions it hopes to fulfill will generally emanate from an altered self-image as expressed in a modified statement of purpose.

All institutional publications and publicity should accurately reflect the statement of purpose.

An important component in the accreditation process will be an evaluation[18] of how important a role the mission statement actually plays in the educational decision-making process, in the day-to-day practices and procedures of the school, and in the implementation of stated priorities.

B. Organization and Administration:

An effective organization, with clearly defined lines of authority and responsibility, is essential to the achievement of the aims of the institution.

The Board (Board of Directors, of Governors, of Trustees) is the legally constituted body with authority emanating from the original charter of incorporation of the institution.

The Rosh HaYeshiva fills a role unique in higher education. Chosen primarily for his scholarship, he sets the intellectual tone of the organization. The Rosh HaYeshiva often provides leadership for the administration as well as for the faculty and students.

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[18] **Clarification:** The word evaluation is used in the sense of 'gauge'. If the site visitors are satisfied that the mission statement does play its expected role, no special mention will be made as a rule.

The organizational structure should also include administrative personnel to execute Board decisions and see to the day-to-day functioning of the enterprise.

The Commission is aware that each institution may develop organizational and administrative structures to meet its own needs. In the final analysis, it is evidence of effective procedures that is sought, rather than a framework patterned after a given model.

Consistent with the above, the self-study report might discuss the composition of the Board, including items such as membership, selection criteria, committee structure, and the like.

The manner in which policy is set and implemented, the areas of focus of the Board, and the role of the Executive Committee, if any, are of interest.

A chart outlining the administrative structure is helpful to the members of the visiting team.

C. Finance:

This part of the self-study should focus on the structure of the financing of the school. A useful way to begin might be to describe the process whereby the institutional budget is prepared, beginning with the setting of priorities, the allocation of resources, and the input of the various communities of interest.

Referring to the latest certified audit, the discussion should focus on the overall strength of the institution and on the details of income and expenditures. The relative importance of tuition and of contributions should be discussed, and changes over the past few years highlighted.

Similarly, expenditures should be explained (either in the Self Study or at the Site Visit) with emphasis on the manner in which they reflect the relative priorities of the school. Here too, changes over the past few years should be mentioned with note taken of special projects such as capital construction, major renovations, large increases or decreases in enrollment, and so forth. The intent here is to provide a total picture of an ongoing institution, rather than a presentation of static figures.

An important yardstick is whether a school has assets and procedures adequate to carry out its aims. A description of programs for increasing institutional income, plans for reducing expenditures, and plans to improve the fund-raising ability of the institution can be helpful here.

D. Physical Plant, Materials and Equipment:

The physical facilities and equipment will be judged in terms of whether they are adequate to the requirements of the educational program. Although the self-study might include components such as a map of the campus, a description of the physical facilities and a master plan, if any, the emphasis should be to demonstrate that classrooms are large enough and properly lighted, ventilated, and heated for the student body.

The physical facilities described might include, as appropriate, dormitory, dining, and parking facilities. The maintenance of the facilities should be the responsibility of a professional staff engaged in maintaining a high standard of cleanliness, preventive maintenance, and housekeeping.

Of special concern are considerations of safety. Campus security and first aid facilities are among the areas an institution is expected to address.

E. Library:

The library service is an important component in the educational program and the collection should be consistent with the institutional mission. The number of volumes is one indication of quality; the extent to which the holdings are representative is another. Student accessibility is an even more important indicator of adequate library facilities.

The institution may want to indicate the mechanism whereby books are selected for purchase, the availability of competent help for students and faculty, the hours the collections are open, and the availability of significant collections in every area of school concentration.

Aspects discussed earlier such as budget and physical plant should have made special mention of the library. If not, the self study report should include these considerations at this point.

F. Educational Program:

The basic emphasis of all educational programs should be to develop the ability in students to think independently, to weigh values, and to understand fundamental theory, in addition to learning facts or skills. The product of the school should be able to cope with changing intellectual circumstances and to relate with unfamiliar environments as a result of the educational experience.

Reference to the Taxonomy of Skills[19] can be helpful here.

The institution should report whether, and to what extent, the above goal is being met.

The curriculum should be described in some detail; in addition to satisfying the above broad outline, it should be closely related to the Torah mission of the institution, and the self-study should aim to establish this.[20]

The institution should indicate how student success with respect to learning is determined, and how evidence of intellectual growth of the student body is arrived at. The discussion in Chapter X of *Hierarchy* is particularly relevant here.[21]

Typically the institution will describe how the program as a whole is evaluated, and how changes to the educational program are made.

The institution may want to discuss special provisions for the gifted, as well as for students needing additional help.

The nature of each institution's undergraduate program must be clearly described and recorded with the Accreditation Commission.

(i) The program description must be contained in an official resolution of the institution and be filed with AARTS. Any subsequent changes in the description must be similarly recorded in a written resolution and filed[22] with AARTS.

(ii) The description, should, among others:

(a) Specify the required courses, including the number of credit hours needed for completion.
(b) Determine how to integrate transfer students (the designation of a student must be in terms of the student's actual level of achievement).
(c) Identify the criteria used to measure levels of achievement.
(d) Describe the number of years of full-time study necessary to complete the program.

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[19] **Clarification**: The Taxonomy of Skills, once offered as a separate document, is now part of Chapter VI in *Hierarchy*.
[20] **Clarification:** This can be established from the Course Map if the curriculum is consistent with that offered by other AARTS schools.
[21] **Clarification:** Chapters V, VI, and X are viewed by the Accreditation Commission as successfully explicating the concerns of 602.16 (a)(1)(i) and 602.17(a).
[22] **Clarification:** This can be most easily satisfied by submitting the latest catalog signed by a responsible officer attesting to the fact that the contents are consistent with the resolution.

Any substantive change in an established program must be submitted to the Accreditation Commission for approval before it can be put into effect at the institution. This will apply in particular to changes in the length of any program, or to the introduction of additional offerings by the school.

Institutions are expected to assign credit hours in a manner which complies with the Federal Credit Hour Definition:

> *A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:*
>
> *(1) One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or*
>
> *(2) At least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practical studio work, and other academic work leading toward to the award of credit hours.*

Clarification[23]

The Accreditation Commission takes a systemic approach to examining compliance with the credit hour regulation, because virtually all AARTS schools offer similar programs.

AARTS institutions offer programs comprised of a full morning and full afternoon session, consisting of at least seven hours of study in the class and the Beth Medrash. This program extends, minimally, five days a week and the equivalent of ten months a year.

Once a school is determined to be offering a standard daily schedule and calendar, the Course Map establishes that 602.24(f) and the Credit Hours policy of Standard F have been met.

Compliance is determined as part of the annual monitoring initiative; in this connection, see also page 17.

[23] Ref. 602. 24(f)

G. Faculty:

The key to the success of every educational enterprise is the quality of instruction. Faculty should be recruited keeping in mind the basic purposes of the institution; the goals of members of faculty should be in consonance with the mission of the school.

Quality of faculty[24] is seen as pivotal in any successful educational program. Faculty quality can be established in many ways, including the number of years of advanced study completed by the faculty member; the nature of the graduate institution in which he completed his advanced studies; evidence of creative scholarship; and the nature and extent of previous teaching experience.

An important component of the process of intellectual growth in the student body is the guidance and direction available to the student after class hours. The extent to which the faculty member is successful in establishing a personal relationship with students is an important criterion of his overall success.

Teaching effectiveness is, of course, central to the role of the faculty member, and the institution should explain how this is determined. Describing how student learning outcomes are used in this determination is of interest to site visitors.

The institution should encourage the professional growth of faculty members; faculty salaries and benefits should be commensurate with their contribution to the educational program. Faculty governance rules should provide the kind of professional security needed for optimum performance.

H. Students and Student Services:

The student must be considered as a total individual. In addition to a proper academic environment, the school should ensure adequate room and board, health and counseling services, and financial advice and assistance. Guidance and remedial help are also typically available. Usually, an integral component of the educational program is the emphasis on character development, interpersonal attitudes and behavior codes. The institution will want to describe how these concerns are addressed.

The successful advanced rabbinical and Talmudic program is based on a close teacher/student relationship. Although there can be large lecture sessions, the program traditionally depends on a small student/teacher ratio with programs meeting up to six days a week and forty weeks a year. Within this framework, the

[24] **Clarification:** Faculty vitae are viewed as a necessary adjunct to the review of faculty.

special circumstances under which each institution operates should be described. This includes the appropriateness of a school's program length.

Tuition and fees will be reviewed to ensure that they are in keeping with what is usual in the community of advanced rabbinical and Talmudic schools.

Recreational facilities should be noted. Schools may want to discuss whether student input regarding room and board, or the program itself, is sought.

The recruitment program and admissions policy should be discussed against the institutional mission as background.

I. Records:

Institutions must maintain full and accurate student records. A school must maintain a complete set of records on its campus, accessible at all times during the school day.

Prior to each visitation, a member of AARTS staff, upon request, will review the audited financial statements, financial and compliance audits, program reviews, and academic records of the school. These records will also be the subject of review during possible unannounced visits as well as periodic monitoring visits. If any deficiencies are found during a visitation, expected improvements will be specified by the Accreditation Commission together with a timetable to be followed.

The Commission review of student financial aid, i.e. the institution's compliance with Title IV responsibilities, will be based on program reviews, financial and compliance audits, audited financial statements, and any other information that the Secretary provides.

All schools must submit data in a timely fashion as requested in conjunction with regular AARTS monitoring activities. Checklists used by site visitors in their review of record-keeping are included in the *Site Visitors' Manual.* The *Monitoring/Oversight/Compliance Report* publication will be helpful as well.[25]

J. Graduate Program:

A graduate program is an important asset to an advanced rabbinical or Talmudic school. The benefits to younger students, to an active faculty, and to the entire

[25] Ref. 602.19(b)

intellectual community are many. The self-study should explain how this program interacts with the rest of the school.

The school should explain in what way and to what degree the educational program differs from the undergraduate. In particular, it should indicate the manner in which the educational program is designed to develop originality and independence of thought in the student body over and beyond that which is expected from a quality undergraduate program.

In addition to a significant expansion in the content of the undergraduate curriculum, it is expected that the graduate program will also stress goals such as creativity, maturity, and increased intellectual sophistication in the graduate study body. Indications of increased maturity and independence of the student body in particular, should also be noted.

Schools offering a Doctorate must require that students admitted to the program present an earned Masters degree, and pursue their graduate work beyond the Masters, in residence, for an additional minimum of two full academic years. Students must also defend a thesis which offers a distinct and original contribution to the study and understanding of Talmudic law, deemed worthy of publication.

K. Other Institutional Activities:

(i) Community Service

In many cases, the sign of a well run institution is the extent to which it has been able to develop an almost symbiotic relationship with the community around it, serving the community and being supported by it. Educational and cultural programs designed to involve the community in the school's activities are particularly pertinent.

(ii) Experimental and Innovative Programs

Institutions may wish to report on programs which have an experimental or innovative aspect. AARTS encourages such departures from conventional methods provided:

(a) They are introduced to serve a definite need; change for its own sake often results in dislocation in the educational process with no net gain to the student body.

(b) They do not compromise the educational validity of the institution's programs and courses.

Experimental or pilot programs introduced on a small scale can be given far more latitude than approaches affecting large segments of the student body.

L. Evaluation of Outcomes:

As discussed above, every element of the institution must be judged in terms of the basic purpose and philosophy of the school. A further test should include a continuous ongoing evaluation of the educational output of the school. Basically, this involves a study of each graduating class in terms of desired changes that occurred as a result of the time spent at the school.

The institution, in a sense, can be looked upon as an operator acting upon students who enter in one state of awareness and outlook, and who leave with another. Interaction and contact with graduates is another effective means for this kind of evaluation.

Efforts should continually be made to evaluate outcomes by considering student and faculty reaction, alumni comments, and the like.

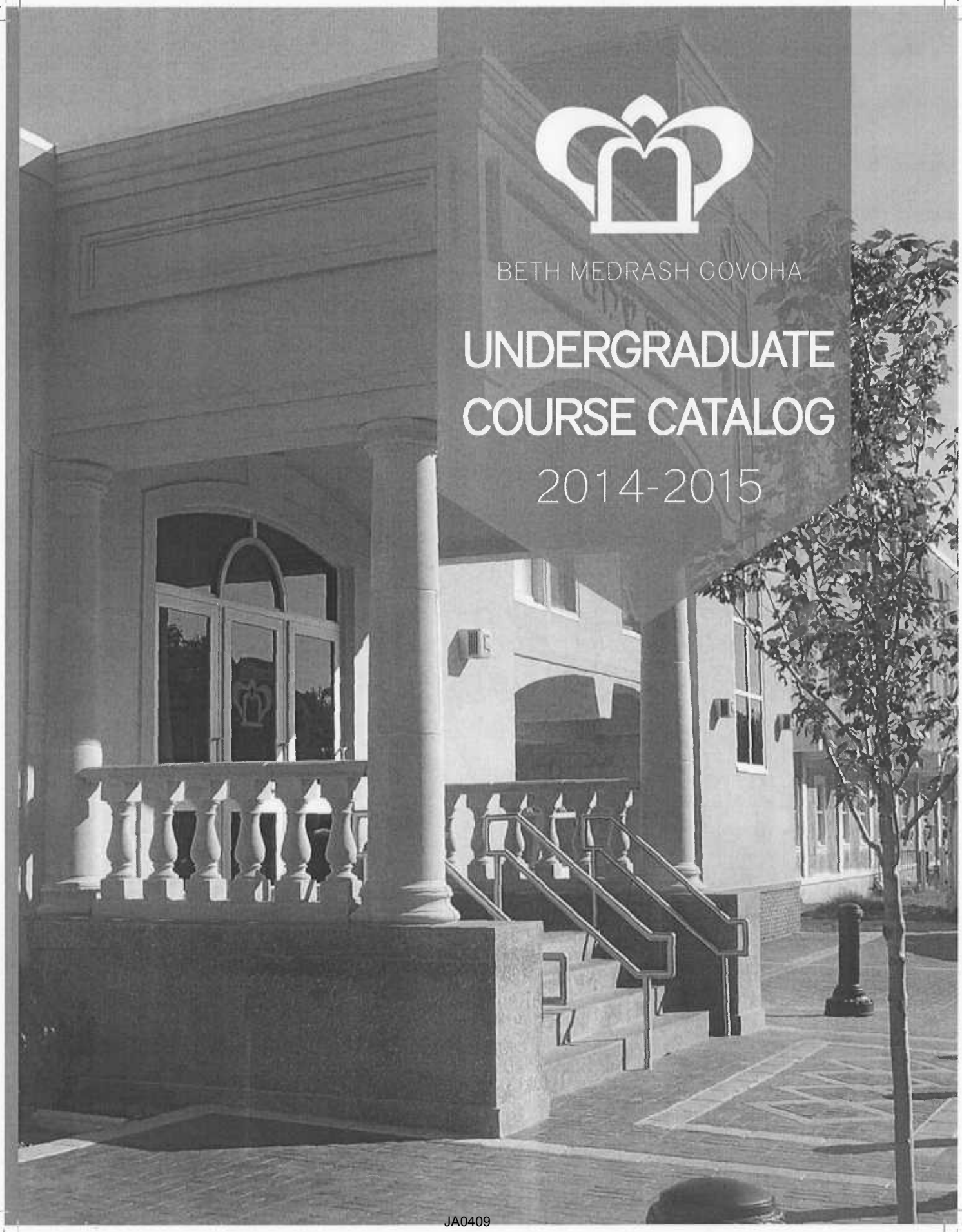
Institutions will be expected to demonstrate that a program of assessment of institutional effectiveness is in place, over and above the assessment of program effectiveness, and should be prepared to show how the assessment program contributes to a culture of institutional improvement.

The Accreditation Commission determines whether schools have succeeded with respect to student achievement in relation to institutional mission. Institutions, in their focus on indicators of institutional effectiveness, should be mindful of this special emphasis on measurement of Student Learning Outcomes.

Institutions are free to select their own assessment instruments and strategies, and to define their own standards to demonstrate student success, subject to the review[26] of the Accreditation Commission. Chapter X of the *Hierarchy of Assessment and Accountability in the AARTS Accredited Rabbinical and Talmudic Schools* should be helpful here.

The Commission, in its decision letter, will report its conclusion regarding the school's performance with respect to student achievement.

[26]**Clarification:** The word 'review' is intended to include validation.



BETH MEDRASH GOVOHA

UNDERGRADUATE COURSE CATALOG

2014-2015

בית מדרש גבוה
BETH MEDRASH GOVOHA

UNDERGRADUATE COURSE CATALOG 2014-2015

BACHELOR OF TALMUDIC STUDIES

DEGREE REQUIREMENTS AND PROGRAM OPTIONS

All undergraduate students enrolled in Beth Medrash Govoha are automatically enrolled for the Bachelor of Talmudic Studies degree and assigned a Primary Major in Talmudic Studies.

In planning their programs, students should be mindful of Beth Medrash Govoha's degree requirements for the Bachelor of Talmudic Studies, which require a minimum of 150 credits in total, and which must include a minimum of 140 credits in the Talmud Department (courses in Talmud and Jurisprudence) in order to earn the degree.

Beth Medrash Govoha also offers an optional secondary major in Hebrew Language and Literature. This major supplements, but does not replace, the primary major of Talmudic Studies.

Students should be aware that, as with all double major programs, the completion of the Hebrew Major requirements will require additional credits beyond the 150 credit minimum, in order to satisfy both the core requirements and the requirements specific to the Hebrew Major.

Students who would like to declare a Hebrew Major should consult the Registrar's Office regarding program requirements and to complete the necessary forms.

SAMPLE CURRICULUM FOR BACHELOR OF TALMUDIC STUDIES

FRESHMAN YEAR

Term 1 (15 credits)	Term 2 (15 credits)
0171A Introductory Talmud Intensive 1 (6 credits)	0171B Introductory Talmud Intensive 2 (6 credits)
0181A Introductory Talmud Survey 1 (4 credits)	0181B Introductory Talmud Survey 2 (4 credits)
0161A Introductory Jurisprudence 1 (4 credits)	0161B Introductory Jurisprudence 2 (4 credits)
E31A Introductory Ethics 1 (1 credit)	E31B Introductory Ethics 2 (1 credit)

SOPHOMORE YEAR

Term 1 (15 credits)	Term 2 (15 credits)
0272A Beginning Talmud Intensive 1 (6 credits)	0272B Beginning Talmud Intensive 2 (6 credits)
0282A Beginning Talmud Survey 1 (4 credits)	0282B Beginning Talmud Survey 2 (4 credits)
0262A Beginning Jurisprudence 1 (4 credits)	0262B Beginning Jurisprudence 2 (4 credits)
E32A Beginning Ethics 1 (1 credit)	E32B Beginning Ethics 2 (1 credit)

JUNIOR YEAR

Term 1 (15 credits)	Term 2 (15 credits)
0373A Intermediate Talmud Intensive 1 (6 credits)	0373B Intermediate Talmud Intensive 2 (6 credits)
0383A Intermediate Talmud Survey 1 (4 credits)	0383B Intermediate Talmud Survey 2 (4 credits)
0363A Intermediate Jurisprudence 1 (4 credits)	0363B Intermediate Jurisprudence 2 (4 credits)
E33A Intermediate Ethics1 (1 credit)	E33B Intermediate Ethics 2 (1 credit)

SENIOR YEAR

Term 1 (15 credits)	Term 2 (15 credits)
0474A Senior Talmud Intensive 1 (6 credits)	0474B Senior Talmud Intensive 2 (6 credits)
0484A Senior Talmud Survey 1 (4 credits)	0484B Senior Talmud Survey 2 (4 credits)
0464A Senior Jurisprudence 1 (4 credits)	0464B Senior Jurisprudence 2 (4 credits)
E34A Senior Ethics 1 (1 credit)	E34B Senior Ethics 2 (1 credit)

FIFTH YEAR

Term 1 (15 credits)

0575A Advanced Talmud Intensive 1 (6 credits)
0585A Advanced Talmud Survey 1 (4 credits)
0565A Advanced Jurisprudence 1 (4 credits)
E35A Advanced Ethics 1 (1 credit)

Term 2 (15 credits)

0575B Advanced Talmud Intensive 2 (6 credits)
0585B Advanced Talmud Survey 2 (4 credits)
0565B Advanced Jurisprudence 2 (4 credits)
E35B Advanced Ethics 2 (1 credit)

TALMUD AND HEBREW MAJORS

Students who wish to enroll in a double major in Hebrew Language and Literature must take the following courses in addition to their Talmud core requirements:

CURRICULUM FOR HEBREW LANGUAGE AND LITERATURE MAJOR

H31A Introduction to Classical Hebrew Writing (4 credits)
330A Medieval Hebrew Commentaries (4 credits)
438A Post-Medieval Hebrew Texts (4 credits)
438B Contemporary Hebrew Texts (4 credits)
530A Major Hebrew Works on Halacha (4 credits)
530B Supervised Independent Study and Research (2 credits)

COURSE DESCRIPTIONS

TALMUD

0171A & B INTRODUCTORY TALMUD INTENSIVE 1 & 2 — 6 CREDITS

Prerequisite to 0171B: 0171A
Corequisite to 0171A: 0161A, Introductory Jurisprudence 1
Corequisite to 0171B: 0161B, Introductory Jurisprudence 2

Description: Intense review of selected Babylonian Talmud passages. Emphasis on textual skills in original Hebrew-Aramaic, with focus on inferences in language, nuance, and expression. The text as a focal point for commentators' glosses. Review of major commentaries on selected passages, with analysis of alternate textual versions and contrasting approaches based on those texts. Exploration of chaburah method in enhancing peer-led study and as the basis for eventual further independent study.

0272A & B BEGINNING TALMUD INTENSIVE 1 & 2 — 6 CREDITS

Prerequisite to 0272A: 0171B
Prerequisite to 0272B: 0272A
Corequisite to 0272A: 0262A, Beginning Jurisprudence 1
Corequisite to 0272B: 0262B, Beginning Jurisprudence 2

Description: Closely guided reading of the Babylonian Talmud in its original Hebrew-Aramaic to extract the integrated Talmudic approach to Logic, Ethics, Philosophy, Religion, Economics, Law, Sociology, History, Psychology, Literature, Critical Reading, Text Interpretation, Classical Civilizations, Science, Mathematics, Language, Speech and Political Science. Contrast of Talmudic to other perspectives on these subjects. Contrasting approaches within the Talmud itself to central issues in various disciplines. Historical understanding of Talmud Commentators of the underlying Talmudic themes.

0373A & B INTERMEDIATE TALMUD INTENSIVE 1 & 2 — 6 CREDITS

Prerequisite to 0373A: 0272B
Prerequisite to 0373B: 0373A
Corequisite to 0373A: 0363A, Intermediate Jurisprudence 1
Corequisite to 0373B: 0363B, Intermediate Jurisprudence 2

Description: Initial introduction of the student to independent Talmud study. Close reading of the Talmud and inferring its apparent meaning in the various disciplines it encompasses. Frequent recourse to mentors and teachers with specialized knowledge of each of the Talmudic disciplines. Extended discussion of issues with peers to clarify complex lines of reasoning and inferences. Contrast and resolution of apparent Talmudic reasoning with other sources, particularly classical Talmud Commentaries and more modern analyses of Talmudic explication and jurisprudence.

0474A & B SENIOR TALMUD INTENSIVE 1 & 2 — 6 CREDITS

Prerequisite to 0474A: 0373B
Prerequisite to 0474B: 0474A
Corequisite to 0474A: 0464A, Senior Jurisprudence 1
Corequisite to 0474B: 0464B, Senior Jurisprudence 2

Description: Guided independent Talmud study. Formulating integrated hypotheses about Talmudic meaning and Talmudic reasoning in the areas of Ethics, Philosophy, Religion, Economics, Law, Sociology, History, Psychology, Text Interpretation, Classical Civilizations, Science, Mathematics, and Political Science. Isolating, defining and clarifying concepts. Maintaining consistency of argument. Learning to defend opposing lines of reasoning based on differing basic postulates and outcomes of logical positions in other areas of thought. Continued extensive discussion with peers, with less frequent but regular reliance on mentors and teachers.

0575A & B ADVANCED TALMUD INTENSIVE 1 & 2 — 6 CREDITS

Prerequisite to 0575A: 0474B
Prerequisite to 0575B: 0575A
Corequisite to 0575A: 0565A, Advanced Jurisprudence 1
Corequisite to 0575B: 0565B, Advanced Jurisprudence 2

Description: Independent Talmud study. Formulating rationales and logical bases for posited Talmudic meaning and reasoning in the reading of the Talmud text and in the Talmudic disciplines. Analyzing the internal and external consistency of disciplinary arguments based on Talmudic approaches. Posing questions within an established framework, and understanding appropriate modifications of framework to re-establish consistency and logic. Developing and defending an intellectual position. Formulating and justifying a philosophical outlook within Talmudic disciplinary and interpretive frameworks.

0181A & B INTRODUCTORY TALMUD SURVEY 1 & 2 — 4 CREDITS

Prerequisite to 0181B: 0181A
Corequisite to 0181A: 0161A, Introductory Jurisprudence 1
Corequisite to 0181B: 0161B, Introductory Jurisprudence 2

Description: Initial survey level courses for background and context of Talmudic Studies. Selected passages will cover essential areas of Talmudic focus, with an emphasis on texts which will complement higher-level coursework. Focusing wide, this course-series will enhance textual skills, while giving students relevant context in a broad base of sociological, legal, and cultural Talmudic norms and mores which will serve as the foundation for advanced Talmud study.

0282A & B BEGINNING TALMUD SURVEY 1 & 2 — 4 CREDITS

Prerequisite to 0282A: 0181A
Prerequisite to 0282B: 0282A
Corequisite to 0282A: 0262A, Beginning Jurisprudence 1
Corequisite to 0282B: 0262B, Beginning Jurisprudence 2

Description: Closely guided presentation and study of large portions of individual Talmud tractates to gain acquaintance with the broad panoply of Talmudic knowledge and approach to the disciplines of Logic, Ethics, Philosophy, Religion, Economics, Law, Sociology, History, Psychology, Literature, Classical Civilizations, Science, Mathematics, Language, and Political Science.

0383A & B INTERMEDIATE TALMUD SURVEY 1 & 2 — 4 CREDITS

Prerequisite to 0383A: 0282B
Prerequisite to 0383B: 0383A
Corequisite to 0383A: 0363A, Intermediate Jurisprudence 1
Corequisite to 0383B: 0363B, Intermediate Jurisprudence 2

Description: Continued, and more independently based, overview study of large portions of additional Talmud tractates, beyond those covered in Beginning Survey, to gain acquaintance with the major principles of the additional tractates and to the knowledge and applications of the various disciplines as embodied in the larger scope of an entire, or a major portion of a Tractate.

0484A & B SENIOR TALMUD SURVEY 1 & 2 — 4 CREDITS

Prerequisite to 0484A: 0383B
Prerequisite to 0484B: 0484A
Corequisite to 0484A: 0464A, Senior Jurisprudence 1
Corequisite to 0484B: 0464B, Senior Jurisprudence 2

Description: Continued overview of large portions of additional Talmud tractates, beyond those covered in Beginning and Intermediate Survey, to gain acquaintance with the subjects and major principles of the additional tractates. Formulation of a Talmudic world-view that forms a prism through which the individual disciplines are seen to form a seamless continuum of knowledge and thought for the life of the scholar.

0585A & B ADVANCED TALMUD SURVEY 1 & 2 — 4 CREDITS

Prerequisite to 0585A: 0484B
Prerequisite to 0585B: 0585A
Corequisite to 0585A: 0565A, Advanced Jurisprudence 1
Corequisite to 0585B: 0565B, Advanced Jurisprudence 2

Description: Continued overview of large portions of additional Talmud tractates, beyond those covered in Beginning, Intermediate and Senior Survey, to gain acquaintance with the subjects and major principles of the additional tractates. Expanding the student's scholarly world-view to additional application areas and through additional reasoning paradigms.

0191A & B INTRODUCTORY TALMUD BKIUS 1 & 2 — 2 CREDITS

Description: Selected passages of Talmud text. Focus on the text itself, sentence and dialogue structure, and the meaning and conjugation of the language of the Talmud in a textual environment. Introduction to application of commentaries in discovering textual meaning. Exposure to beginning self-study skills with the assistance of mentors and readers.

0292A & B BEGINNING TALMUD BKIUS 1 & 2 — 2 CREDITS

Description: Selected passages of common Talmud text. Focus on the text itself, more complex sentence and dialogue structure, and the meaning and conjugation of the language of the Talmud in a textual environment. Application of commentaries in discovering textual meaning. Initial consolidation of self-study Talmud reading skills with the assistance of study-partners, mentors and readers.

0393A & B INTERMEDIATE TALMUD BKIUS 1 & 2 — 2 CREDITS

Description: Selected passages of complex Talmud text. Complex sentence and dialogue structure, and the meaning and conjugation of the language of the Talmud in a textual environment. Application of commentaries in discovering textual meaning. Deriving textual analytic skills and overviews of intermediate-sized topical portions of the Talmud from deeper Talmudic textual study. Consolidation of self-study Talmud reading skills with the assistance of study-partners and mentors.

0494A & B SENIOR TALMUD BKIUS 1 & 2 — 2 CREDITS

Description: Talmud text consisting of entire chapters. Sentence and dialogue structure, and the meaning and conjugation of the language of the Talmud in a textual environment as presented textually in the ordering of topics within large Talmudic selections. Application of commentaries in discovering textual meaning and performing textual analysis. Development of personal textual analytic skills over large topical portions of the Talmud based on deeper study of Talmud text. Developing fluency in Talmud reading skills together with study-partners.

0595A & B ADVANCED TALMUD BKIUS 1 & 2 — 2 CREDITS

Description: Talmud text consisting of multiple chapters and major portions of tractates. Integrated understanding of sentence and dialogue structure, and the meaning and conjugation of the language of the Talmud in a textual environment, as derived from past and current Talmud study. Application of commentaries in discovering textual implications and performing significant analysis. Consolidation of analytic skills over large segments of the Talmud based on previous and current in-depth study of Talmud text. Consolidation of fluency in Talmud reading and analytic skills. Engaging with study-partners in extended dialectic discussions of the text.

HEBREW LANGUAGE AND LITERATURE

The following are core courses for the double major in Hebrew Language and Literature.

Each of the periods of Hebrew literature listed below reflects a distinct culture, language and style. The greater one's knowledge of this literature, the better one can grasp the complexities and subtleties of Talmudic commentary and research. Scholars in Talmudic Studies therefore must be familiar with the literature of these periods as well as with the disparate styles unique to the various periods and types of Hebrew literature.

Courses may be repeated for credit with the consent of senior faculty.

H31A – INTRODUCTION TO CLASSICAL HEBREW WRITING — 4 CREDITS

Students will be introduced to the basic elements of scholarly writing in Hebrew Language. This will include organizational skills in writing, grammar, primary and secondary sources, documentation, etc.

330A - MEDIEVAL HEBREW COMMENTARIES — 4 CREDITS

Selected topics treated in Ashkenazic and Sephardic Rishonim literature, including Rashi, Tosefos, Rashba, Ritva, and other principal Talmudic commentaries.

438A - POST-MEDIEVAL HEBREW TEXTS — 4 CREDITS

Selected topics treated in Achronim literature including Maharsha, P'nei Yehoshua, K'tzos HaChoshen, Ne'sivos and R. Akiva Eiger.

438B - CONTEMPORARY HEBREW TEXTS — 4 CREDITS

Selected topics in contemporary classics on the Rambam, Masechtos or Sugyos HaShas including Chiddushei Reb Chaim, the Gri"z, Achi'ezer, Bircas Shemuel and Mishnas Reb Aron.

530A - MAJOR HEBREW WORKS ON HALACHA — 4 CREDITS

Selected topics treated in the classical Hebrew literature on Halacha. This may include (a) the works of Rishonim and Achronim such as the Tur and Bais Yosef, (b) seminal works on the Shulchan Aruch such as the K'tzos HaChoshen, Nesivos and Pri Megadim, and (c) the major Responsa literature such as Tshuvos Nodah B'Yehuda, R. Akiva Eiger, Chasam Sofer and Shoel U'Meishiv.

530B - SUPERVISED INDEPENDENT STUDY AND RESEARCH — 2 CREDITS

The objective of this specialized course is to provide guided instruction and critique for advanced students who have prepared original pieces of Talmudic research for publication. Instruction focuses on methodology, style of presentation, consistency of argument and clarity of exposition. Completed articles are then submitted as a complete portfolio for evaluation and published as a kunteres.

ADDITIONAL COURSE OFFERINGS:

ETHICS

E31A & B INTRODUCTORY ETHICS 1 & 2 — 1 CREDIT

Description: Ethical principles and their derivations. Survey of ethical and non-ethical traits and actions. Characteristics of ethical thought, speech and behavior. The ethical individual and degrees of ethical improvement. Attitudes towards ethics. Survey of means of achieving ethical speech and action.

E32A & B BEGINNING ETHICS 1 & 2 — 1 CREDIT

Description: Study of a basic text on ethics. Investigation of means of attaining levels of ethical behavior. Specific examples of ethical and non-ethical behavior as outlined in the text. Specific examples of increasing one's level of ethical sensitivity.

E33A & B INTERMEDIATE ETHICS 1 & 2 — 1 CREDIT

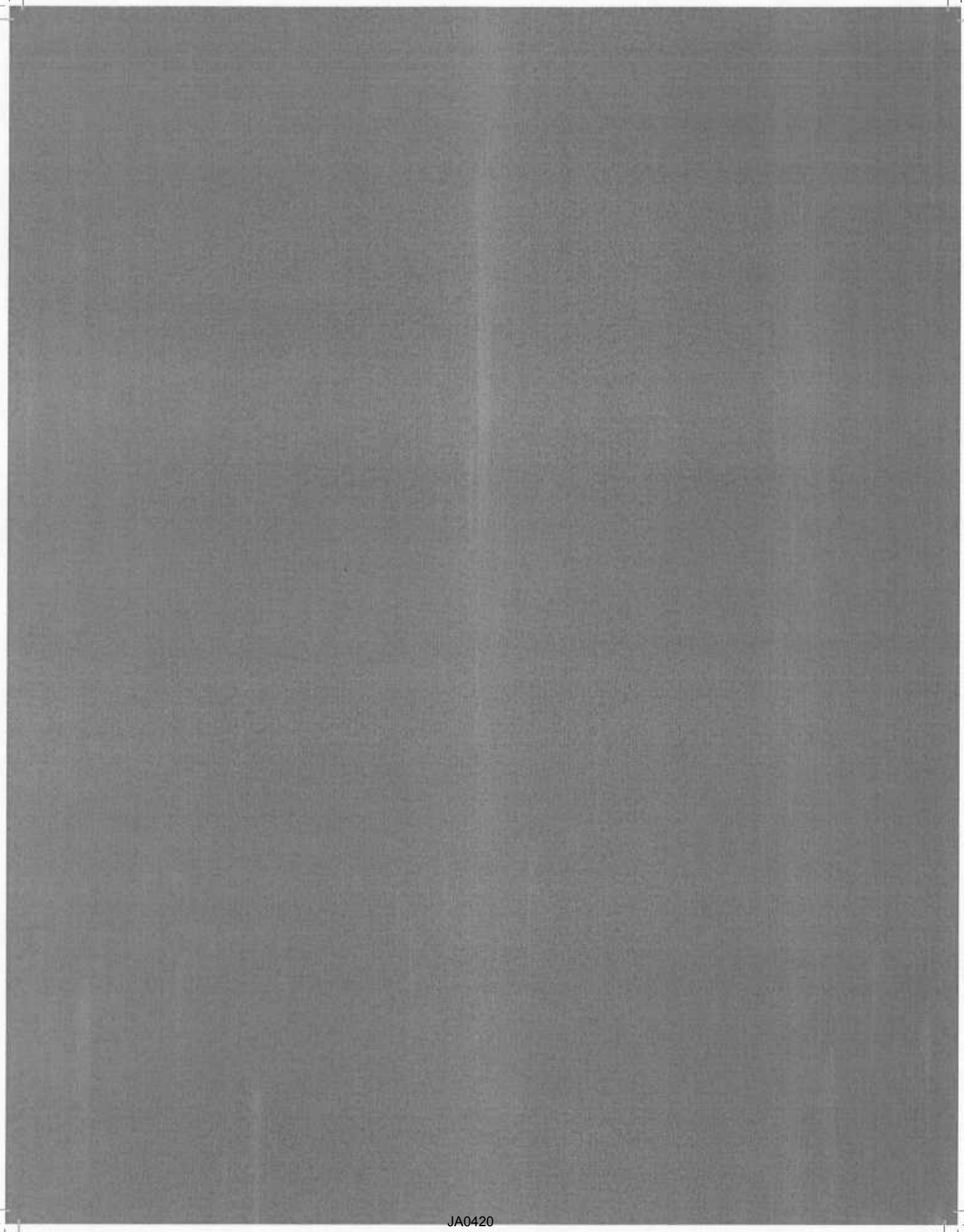
Description: Study of an analytic text on ethics. The basis and justification for ethical behavior, as outlined in the text. The terminology of ethics and its translations and applications in modern environments and circumstances. More extensive lists of ethical character traits and means of achieving each. The components of ethical characteristics.

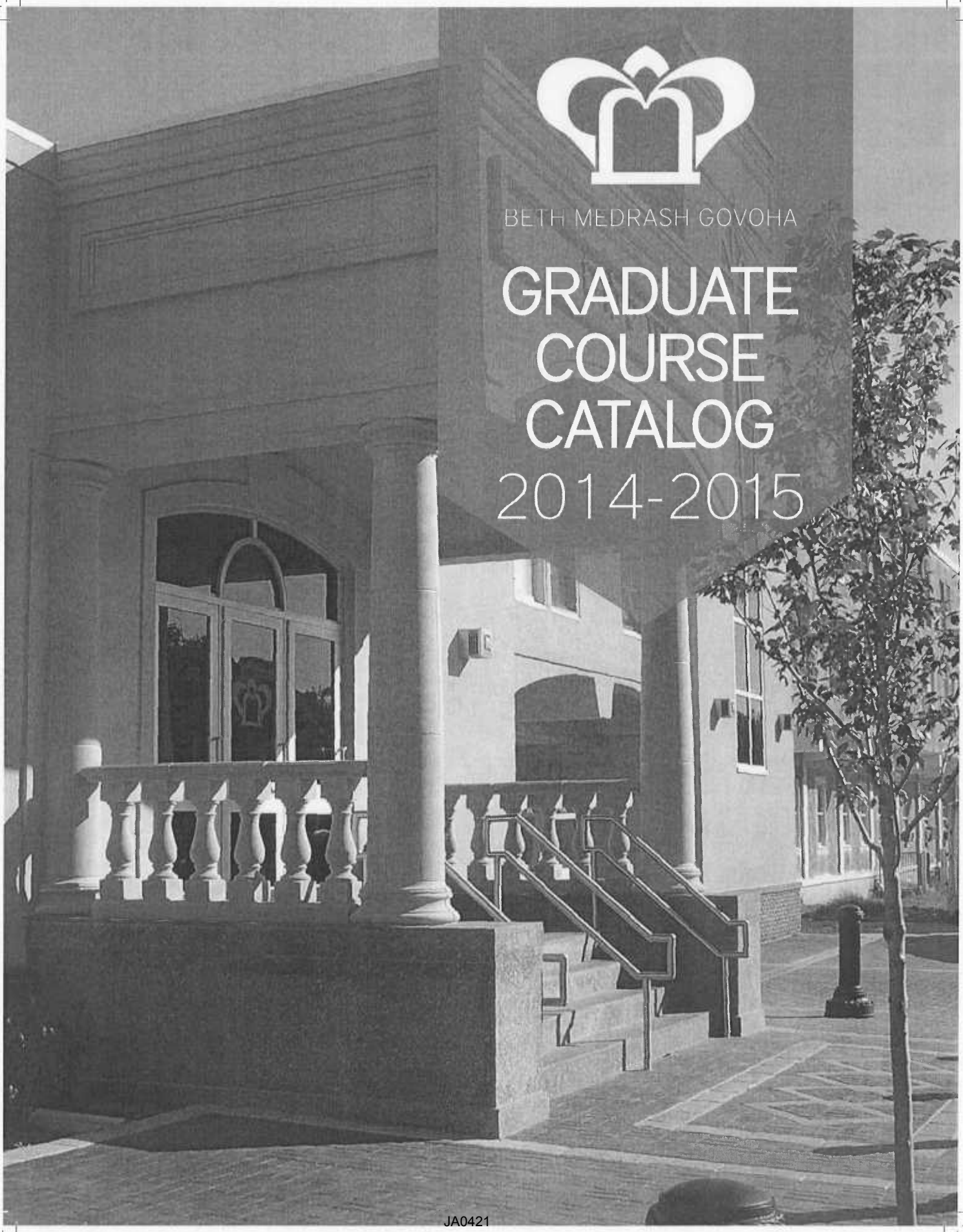
E34A & B SENIOR ETHICS 1 & 2 — 1 CREDIT

Description: Study of a philosophical text on ethics. Emphasis on the origin of ethics and the philosophical rationale for ethical behavior. Consequences of non-ethical behavior within a particular philosophical world-view. Levels of ethical thought, speech and action derived from philosophical principles. Other philosophical implications for ethics.

E35A & B ADVANCED ETHICS 1 & 2 — 1 CREDIT

Description: Study of an integrated ethical text including societal, behavioral, philosophic and mystical approaches to ethics. The uniqueness of Man in the world. Factors compelling human ethics. Ethical principles derived from reason, culture and tradition. Harmony. The role of ethics in promoting harmony. Relative ethics under conflicting circumstances and rationales.





BETH MEDRASH GOVOHA

GRADUATE COURSE CATALOG 2014-2015

PREAMBLE

Talmud study at Beth Medrash Govoha consists of a process of exploration, examination, and deep analysis of the Talmud's broad based "database of knowledge," curated from some 500 years of history, and of its commentaries, which span another 1,000 years. The subject matter is broad, grandly inclusive, and interdisciplinary, reflective of a time when knowledge was not divided into discrete disciplines.

Talmud students master complex content while developing advanced skills in textual analysis, critical thinking, and many related areas. Content and skill together set the foundations for the classic, primary objective of Talmud study: to derive the underlying legal and conceptual principles from the diverse and comprehensive subject matter. The methodical process to uncover the principles entails close readings of the source texts and the extensive commentary literature. Students research, compare, and contrast similar cases to tease out subtle distinctions. They propose hypotheses and go on to test their validity against the text and its nuances, and against statements on the matter by the same parties in the same case matter and in other contexts. From these hypotheses and research in the extensive secondary commentary, they acquire - and creatively develop - systematic knowledge and theory in such far ranging areas as law, ethics, philosophy, and their many offspring.

Talmud study is predicated on the idea that the subject matter in any particular case is not nearly as important as mastering the methodology of researching the underlying logic and processes that frame the subject matter, and most important, of ascertaining the principles that were used in the formation of the subject matter. Students meticulously mine the rich lode of Talmudic discussions, historical records, and case law along with its many majority and minority opinions, to separate, analyze, and refine the methodology, logic, and principles embedded in Talmudic thought.

The relationship of subject matter to principle can be seen in the Talmudic principle of Chazakah. Chazakah, sometimes translated as a form of 'tenure, or reliance'' can be explored in relation to human or animal behavior, ownership of property or of objects, of factual reliance, and more. Chazakah is a topic discussed in different tractates of the Talmud. Although the same overarching principle may be referenced in different cases, its application may vary in different applications. This seemingly unitary principle comprises a collection of related yet finely distinct concepts, as each is encountered in its own subject matter. When exploring Chazakah, the contextual background is relevant, as it shapes the specific Chazakah principle to be applied, with the primary goal always in sight: to comprehend the principles of the matter.

Beth Medrash Govoha's course descriptions do not describe the principles that are the focus and preoccupation of the course; rather they describe the content and subject matter that will be utilized during the semester. Course descriptions are more of a case index, rather than a guide to the principles themselves.

TALMUD INTENSIVE COURSES

41A.1	BAVA KAMA 1	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41B.1	BAVA KAMA 2	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41C.1	BAVA KAMA 3	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Bava Kama. Primary topics include damages caused by a person's animal, by a fire he set, by him directly, or by a pit or stumbling block he dug or placed in a public domain, and the amount and method of payment established for all of these circumstances.

41D.1	BAVA KAMA 4	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41E.1	BAVA KAMA 5	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41F.1	BAVA KAMA 6	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41G.1	BAVA KAMA 7	6 CREDITS	COREQUISITE: 435, LAWS OF BURGLARY

Description: These courses focus on examination of the core text informed by analysis of the overarching themes of the middle chapters of Bava Kama. Topics to be studied include distinctions between animals that are habitual damagers and those that are not. Cases of doubt as to the extent of damage caused, consequences of negligence by guardians or negligent placement of objects or pits in public domains or allowing fire to get out of control, the penalties of double damages, and quadruple/quintuple and 25% additional damage payments in appropriate situations are addressed in this course series.

41H.1	BAVA KAMA 8	6 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41I.1	BAVA KAMA 9	6 CREDITS	COREQUISITE: 436, LAWS OF ROBBERY 1
41J.1	BAVA KAMA 10	6 CREDITS	COREQUISITE: 436, LAWS OF ROBBERY 2

Description: Study of the final chapters of Bava Kama will include a comprehensive overview of damages and restitution for assault and battery, ownership of altered stolen objects, the obligation to return stolen objects, and an agent's rights and obligations in expending funds and buying materials.

42A.1	BAVA METZIAH 1	6 CREDITS	COREQUISITE: 411, OWNERSHIP OF PERSONAL PROPERTY
42B.1	BAVA METZIAH 2	6 CREDITS	COREQUISITE: 423, LAWS AFFECTING LOST ITEMS
42C.1	BAVA METZIAH 3	6 CREDITS	COREQUISITE: 428, WATCHMAN'S OBLIGATIONS

Description: These courses emphasize critical analysis of the early chapters of Bava Metzia. Primary topics to be explored include disputes regarding ownership of mobile objects, lost documents of indebtedness or divorce, returning found objects, and obligations of a trustee.

42D.1	BAVA METZIAH 4	6 CREDITS	COREQUISITE: 420, ANNULMENT OF SALES
42E.1	BAVA METZIAH 5	6 CREDITS	COREQUISITE: 221, KARO - BUSINESS LAW 3
42F.1	BAVA METZIAH 6	6 CREDITS	COREQUISITE: 433A, WORKERS' WAGES 1
42G.1	BAVA METZIAH 7	6 CREDITS	COREQUISITE: 433B, WORKERS' WAGES 2

Description: These courses involve a focused examination of the comprehensive principles underlying acquisition methods for mobile objects, laws of usury and fair pricing, obligations and rights of craftsmen and of hired workers. Other elements addressed in the middle chapters of Bava Metzia may enhance the exploration of key themes.

42H.1	BAVA METZIAH 8	6 CREDITS	COREQUISITE: 13.2A, MAIMONIDES- BORROWED ARTICLES 1
42I.1	BAVA METZIAH 9	6 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A
42J.1	BAVA METZIAH 10	6 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A

Description: These courses involve a critical analysis of the text and a synthesis of wide-ranging principles and concepts developed from distinct elements in the final chapters of Bava Metzia. Primary topics include obligations and rights of a borrower of mobile objects, of a lessee of fixed property, and of owners in a co-operative.

43A.1	BAVA BASRA 1	6 CREDITS	COREQUISITE: 414, PARTNERSHIP IN REAL PROPERTY
43B.1	BAVA BASRA 2	6 CREDITS	COREQUISITE: 413, DAMAGES TO NEIGHBORS
43C.1	BAVA BASRA 3	6 CREDITS	COREQUISITE: 412, OWNERSHIP OF REAL PROPERTY

Description: These courses focus on the early chapters of Bava Basra. Emphasis is placed on mutual responsibilities and rights of partners in structures, zoning regulations and remedies, requirements for acquisition of land, and proof of land ownership.

43D.1	BAVA BASRA 4	6 CREDITS	COREQUISITE: 412, OWNERSHIP OF REAL PROPERTY
43E.1	BAVA BASRA 5	6 CREDITS	COREQUISITE: 419A, LAWS OF BUYING AND SELLING 1
43F.1	BAVA BASRA 6	6 CREDITS	COREQUISITE: 12.1, ACQUISITION THROUGH PURCHASE

Description: These courses provide for in-depth exploration of areas including acquisition of ancillary rights to acquired property, ancillary rights based on functionality and based on proximity, acquisition of produce, acquisition of land as ancillary to sale of produce and acquisition of produce as ancillary to acquisition of land. A comprehensive exploration of the text will be accompanied by examination of broader principles and themes.

43G.1	BAVA BASRA 7	6 CREDITS	COREQUISITE: 419A, LAWS OF BUYING AND SELLING 1
43H.1	BAVA BASRA 8	6 CREDITS	COREQUISITE: 426, LAWS GOVERNING ESTATES
43I.1	BAVA BASRA 9	6 CREDITS	COREQUISITE: 12.2A, MAIMONIDES- BUSINESS LAW 2A
43J.1	BAVA BASRA 10	6 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A

Description: The final chapters of Bava Basra address topics including the status of property of the deceased, and include an exploration of the laws of inheritance and order of inheritors, orphans' obligations to other relatives as part of inheritance, other related issues, and the form and efficacy of documents as a means of acquisition. These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements.

44A.1	SANHEDRIN 1	6 CREDITS	COREQUISITE: 401, LAWS PERTAINING TO JUDGES
44B.1	SANHEDRIN 2	6 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY
44C.1	SANHEDRIN 3	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44D.1	SANHEDRIN 4	6 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY

Description: These courses explore the early chapters of Sanhedrin. A wide-ranging examination of concepts related to systems of law and justice addresses the makeup of a court for various jurisdictions, the 71-member Great Court and its jurisdiction, the treatment of high ranking officials as a litigant or as a witness and in other circumstances, individuals ineligible from acting as witnesses, selecting members of an ad hoc court, the treatment of witnesses in court, the obligation to bear witness, court procedures, method by which a court determines a verdict, and the obligation of immediate execution of a verdict.

44E.1	SANHEDRIN 5	6 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY
44F.1	SANHEDRIN 6	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44G.1	SANHEDRIN 7	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44H.1	SANHEDRIN 8	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the middle chapters of Sanhedrin. Primary topics include details of witness examination, leeway for differences in testimony, details of procedures for coming to a verdict, conveying a murderer to the place of execution, the burial obligation, ancient types of capital punishment in the Temple era, obligations applying to all of mankind, juvenile delinquency and methods of dealing with delinquency.

44I.1	SANHEDRIN 9	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44J.1	SANHEDRIN 10	6 CREDITS	COREQUISITE: 14.5, MAMRIM
44K.1	SANHEDRIN 11	6 CREDITS	COREQUISITE: 14.5, MAMRIM

Description: The final chapters of Sanhedrin are concerned with an in-depth exploration of the historical means of execution in cases of capital punishment. Related issues to be examined include repeat offenders of non-capital crimes, offenders who cannot be individually identified, and similar concepts.

45A.1	MAKOS 1	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: This course explores the first chapter of Makos. The primary focus is on the topic of witnesses who were seen at a different location at the time their testimony allegedly took place and their penalties under varying circumstances.

45B.1	MAKOS 2	6 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the second chapter of Makos. The primary topic is the treatment of one who commits homicide unintentionally, degrees of direct and indirect causation of homicide, exile and exit from exile. The homicide victim's avenger and his privileges are examined.

46A.1	SHAVUOS 1	6 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS
46B.1	SHAVUOS 2	6 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS

Description: These courses involve a critical analysis of the text in the early chapters of Shavuos. Core elements addressed in Shavuos Chapter 1 and Shavuos Chapter 2 will inform the exploration of the theme.

46C.1	SHAVUOS 3	6 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS
46D.1	SHAVUOS 4	6 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS

Description: These courses focus on examination of the text by analysis of the themes of the middle chapters of Shavuos. Topics to be explored include various types of oaths and penalties for their violation, superfluous oaths, and oaths of witnesses.

46E.1	SHAVUOS 5	6 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46F.1	SHAVUOS 6	6 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46G.1	SHAVUOS 7	6 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46H.1	SHAVUOS 8	6 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1

Description: Study of the final chapters of Shavuos will involves an analyis of critical principles through the perspectives of Medieval Talmudic Commentaries. Oaths of trustees, court-imposed oaths, oaths by defendants and by plaintiffs, and types of trustees and their obligations are key topics that are explored in these courses.

47A.1	AVODAH ZARAH 1	6 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47B.1	AVODAH ZARAH 2	6 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47C.1	AVODAH ZARAH 3	6 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47D.1	AVODAH ZARAH 4	6 CREDITS	COREQUISITE: 219A1, KARO - FORBIDDEN FOODS 2A
47E.1	AVODAH ZARAH 5	6 CREDITS	COREQUISITE: 219A2, KARO - FORBIDDEN FOODS 2A

Description: These courses examine the five chapters of Avodah Zarah. The students delve into the principal Talmudic commentaries of Rashi and Tosefos, among others, to elucidate the complex Talmudic concepts described in Avoda Zara. Students study with their chavrusahs, study-partners, to translate and analyze the ancient text.

52A.1	MENACHOS 1	6 CREDITS	COREQUISITE: 8.2A, MAIMONIDES- VESSELS OF TEMPLE 1
52B.1	MENACHOS 2	6 CREDITS	COREQUISITE: 8.2B, MAIMONIDES- VESSELS OF TEMPLE 2
52C.1	MENACHOS 3	6 CREDITS	COREQUISITE: 103, LAWS OF TEFILLIN

Description: These courses involve an in depth study of the early chapters of Menachos. Through a comprehensive analysis of the text and associated commentaries, students will gain a clear understanding of the Mincha offering and its associated laws and customs.

53A.1	BCHOROS 1	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53B.1	BCHOROS 2	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53C.1	BCHOROS 3	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS

Description: These courses involve a critical analysis of the text in the early chapters of Bechoros. The courses enable the achievement of a comprehensive understanding of overarching themes and principles in regards to special cases in relation to ownership of animals.

53F.1	BCHOROS 6	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53G.1	BCHOROS 7	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53H.1	BCHOROS 8	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53I.1	BCHOROS 9	6 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the final chapters of Bchoros. Primary topics include types of animal and human blemishes, different classifications of human first-borns, a father or first-born son who die within or after thirty days, prerogatives of a first born heir, and animal tithes.

55A.1	TEMURAH 1	6 CREDITS	COREQUISITE: 9.6A, MAIMONIDES- LAWS OF EXCHANGES 1

Description: This courses focuses on the first chapter of Temurah, with a comprehensive explanation of the historical concept of Temurah. Other areas addressed include the use of the word "all" throughout the Mishnah and its implications, illegal inactions, and whether illegal actions can transform the status of an item.

56C.1	KRIESUS 3	6 CREDITS	COREQUISITE: 9.5, MAIMONIDES- TEMPLAR REGULATIONS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the third chapter of Kriesus. Primary topics include parameters of the historical requirements associated with services at the ancient Temple. The consequences of various levels of inadvertence and intent are explored.

59A.1	CHULIN 1	6 CREDITS	COREQUISITE: 201, LAWS OF SHECHITA
59B.1	CHULIN 2	6 CREDITS	COREQUISITE: 201, LAWS OF SHECHITA
59C.1	CHULIN 3	6 CREDITS	COREQUISITE: 203, LAWS OF TREIFOS

Description: In these courses, students tackle the complex Talmudic selections in the early chapters of Chulin. They isolate the central arguments, consider their broader applications and debate their implications and consequences. Methods of animal slaughter and diseases and malformations that render an animal unfit to eat are among the topics discussed.

59D.1	CHULIN 4	6 CREDITS	COREQUISITE: 209, DIETARY LAWS 2
59E.1	CHULIN 5	6 CREDITS	COREQUISITE: 209, DIETARY LAWS 2
59F.1	CHULIN 6	6 CREDITS	COREQUISITE: 208, DIETARY LAWS 1
59G.1	CHULIN 7	6 CREDITS	COREQUISITE: 217A, DIETARY LAWS 4A

Description: These courses involve a critical analysis of the the middle chapters of Chulin. Continued study of diseases and malformations of animals is a primary topic among others covered in these courses.

59H.1	CHULIN 8	6 CREDITS	COREQUISITE: 216A, DIETARY LAWS 3A
59I.1	CHULIN 9	6 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS
59J.1	CHULIN 10	6 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS

Description: In the study of the final chapters of Chulin, students expound upon the text of the Talmud through the lenses of the commentaries of Rashi and Tosefos. Students examine the opinions of later authorities, discussing the Talmudic principles and drawing logical conclusions. Mixtures of animal products, cuts of meat, and the first shearing of wool are some of the topics mentioned in this course.

61A.1	NIDDAH 1	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 1
61B.1	NIDDAH 2	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 2
61C.1	NIDDAH 3	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 3
61D.1	NIDDAH 4	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 4

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Niddah. Primary topics include miscarriage, the state of childbirth and and the menstrual cycle.

61E.1	NIDDAH 5	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 5
61F.1	NIDDAH 6	6 CREDITS	COREQUISITE: 224, LAWS OF SEPARATION
61G.1	NIDDAH 7	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 1
61H.1	NIDDAH 8	6 CREDITS	COREQUISITE: 223B, LAWS OF NIDDAH 8
61I.1	NIDDAH 9	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 1
61J.1	NIDDAH 10	6 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 1

Description: The final chapters of Niddah explore a wide-range of concepts and themes. Topics to be examined include childbirth, childhood and adulthood, the signs and consequences of various Talmudic legal statuses including adulthood, as well as other issue areas. Various Talmudic statuses and their contrasts are explained.

62A.1	KAILIM 1	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62B.1	KAILIM 2	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62C.1	KAILIM 3	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the first third of Kailim, known as Bava Kamma (The first gate) of the tractate. The primary topics include sources of contamination of utensils and tools, historical reverential locations and associated ancient rules for entry to each, and a survey of non-metal utensils and vessels, and ovens of various materials and in various configurations.

62G.1	KAILIM 7	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62H.1	KAILIM 8	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62I.1	KAILIM 9	6 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the final third of Kailim, known as Bava Basra (The final gate) of the tractate. The primary topics include impurity of various types of tools, various distinctions among the usage of certain items in three different ways, the outside and inside of vessels, items of a professional and of a layman, cloth and clothes, and glassware.

63A.1	AHOLOS 1	6 CREDITS	COREQUISITE: 10.5, MAIMONIDES- CHIEF IMPURITIES
63B.1	AHOLOS 2	6 CREDITS	COREQUISITE: 10.5, MAIMONIDES- CHIEF IMPURITIES
63C.1	AHOLOS 3	6 CREDITS	COREQUISITE: 10.5, MAIMONIDES- CHIEF IMPURITIES

Description: The practical ramifications and procedures following a death in a home or other locations are explored in the earlier chapters of Ahalos. These courses are concerned with central themes borne out by the more specific situations and cases discussed.

66A.1	MIKVAOS 1	6 CREDITS	COREQUISITE: 10.8A, MAIMONIDES- RITUAL PURITY 1
66B.1	MIKVAOS 2	6 CREDITS	COREQUISITE: 10.8A, MAIMONIDES- RITUAL PURITY 1
66C.1	MIKVAOS 3	6 CREDITS	COREQUISITE: 224B, LAWS OF MIKVAH 1
66D.1	MIKVAOS 4	6 CREDITS	COREQUISITE: 224B, LAWS OF MIKVAH 1

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Mikvaos. The primary topics include two people drinking from a single water source, immersion in a pool of uncertain size, immersion in viscous mud, drawn water, and pools of water in various configurations.

69A.1	YODAYIM UKTZIN 1	6 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM
69B.1	YODAYIM UKTZIN 2	6 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM
69C.1	YODAYIM UKTZIN 3	6 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in Tractate Uktzin, which has three chapters. Primary topics include whether parts of produce used for holding and conveyance and shells and husks of produce are intrinsic parts of the produce, the importance of peace, and reward for the righteous.

11A.1	BRACHOS 1	6 CREDITS	COREQUISITE: 105, LAWS OF KRIAS SHMA
11B.1	BRACHOS 2	6 CREDITS	COREQUISITE: 105, LAWS OF KRIAS SHMA
11C.1	BRACHOS 3	6 CREDITS	COREQUISITE: 106, LAWS OF PRAYER
11D.1	BRACHOS 4	6 CREDITS	COREQUISITE: 106, LAWS OF PRAYER

Description: A wide-ranging examination of key themes and practical applications focused on topic areas in the early chapters of Berachos.

11E.1	BRACHOS 5	6 CREDITS	COREQUISITE: 2.1, MAIMONIDES- LAWS OF KRIAS SHMA
11F.1	BRACHOS 6	6 CREDITS	COREQUISITE: 114, LAWS OF BLESSINGS
11G.1	BRACHOS 7	6 CREDITS	COREQUISITE: 114, LAWS OF BLESSINGS

Description: The middle chapters of Berachos will be examined and analyzed through this course series.

14A.1	KLAYIM 1	6 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14B.1	KLAYIM 2	6 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14C.1	KLAYIM 3	6 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14D.1	KLAYIM 4	6 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14E.1	KLAYIM 5	6 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Klayim. Primary topics include pairs of plant varieties that are and are not intermixtures (Klayim); a field planted of one type that is converted to another; amount of intermixtures requiring uprooting; patterns of intermixture; leaves of one type shading another type of plant; separations between species; planting in a vineyard; criteria for classification as a vineyard; a vineyard that is partially uprooted; and accidental planting in a vineyard.

17A.1	MAASROS 1	6 CREDITS	COREQUISITE: 7.4, LEVITICAL TITHES
17B.1	MAASROS 2	6 CREDITS	COREQUISITE: 7.4, LEVITICAL TITHES

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Maasros. The primary topic is an organized mechanism for the societal redistribution of wealth through mandated separation of prescribed percentages of produce grown.

18A.1	CHALLAH 1	6 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS
18B.1	CHALLAH 2	6 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS
18C.1	CHALLAH 3	6 CREDITS	COREQUISITE: 242, LAWS OF CHALLAH
18D.1	CHALLAH 4	6 CREDITS	COREQUISITE: 242, LAWS OF CHALLAH

Description: The study of the Tractate Challah requires students to decipher, translate, and analyze the ancient text. Using the elucidating Talmudic commentaries, students uncover the core priniciples and themes embedded in this Tractate and gain a deeper understanding of the concept of Challah.

21A.1	SHABBOS 1	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21B.1	SHABBOS 2	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21C.1	SHABBOS 3	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21D.1	SHABBOS 4	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: Conveyance of objects among different sorts of domains, definitions of private, public, and neutral domains, candlelighting, determining exact times of twilight are all topics discussed in the early chapters of Shabbos. In this course series, students analyze these key concepts along with other topics, including the use of ovens, cooking, and keeping foods warm.

21E.1	SHABBOS 5	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21F.1	SHABBOS 6	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

21G.1	SHABBOS 7	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21H.1	SHABBOS 8	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21I.1	SHABBOS 9	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: These courses focus on the middle chapters of Shabbos and involve a critical examination of topics including conveyance of decorative clothes and ancillary ribbons, wearing jewels and baubles, 39 types of work action, and the size and measurement of objects.

21J.1	SHABBOS 10	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21K.1	SHABBOS 11	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21L.1	SHABBOS 12	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21M.1	SHABBOS 13	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21N.1	SHABBOS 14	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21O.1	SHABBOS 15	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21P.1	SHABBOS 16	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21Q.1	SHABBOS 17	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21R.1	SHABBOS 18	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21S.1	SHABBOS 19	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21T.1	SHABBOS 20	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21U.1	SHABBOS 21	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21V.1	SHABBOS 22	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21W.1	SHABBOS 23	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21X.1	SHABBOS 24	6 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: Courses examining the later chapters of Shabbos offer students the opportunity to further hone their logic and reasoning skills. Both medieval and contemporary Talmudic Commentaries are used to define, clarify, expound, and draw conclusions from the text. Students then discuss, debate, and analyze the different ideas presented by the commentaries. Topics such as hurling, building, weaving, clearing a space, wounding, fire safety and rescue on Sabbath, and the paramount obligation to care for the sick superseding other considerations are among the topics discussed in these courses.

22A.1	ERUVIN 1	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22B.1	ERUVIN 2	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1

Description: These courses explore the early chapters of Eruvin in depth.The status of alleyways and courtyards, as relates to actual and artificial partitions and doorways in an analysis of the qualities of a physical space are key topics covered in these courses. These courses examine the relevance of the location of an object at the start of the day as to its status throughout the day, various spatial configurations of public, private, and neutral domains, and courtyards and alleyways.

22C.1	ERUVIN 3	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22D.1	ERUVIN 4	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22E.1	ERUVIN 5	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1

Description: These courses involve an analysis of the middle chapters of Eruvin. Primary topics include creation of partnerships to permit conveyances, limits of travel and modifying areas that may be traveled. The status of cities, mountains and valleys in measuring these areas. Methods of land measurement.

22F.1	ERUVIN 6	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22G.1	ERUVIN 7	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22H.1	ERUVIN 8	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22I.1	ERUVIN 9	6 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22J.1	ERUVIN 10	6 CREDITS	COREQUISITE: 125B, LAWS OF ERUV 2

Description: In these courses, relations among neighbors in establishing partnerships for purposes of facilitating conveyance are discussed in depth in the context of the later chapters of Eruvin. Topics covered in these chapters include further analysis of partnership in alleys and courtyards, and the status of an alley and yard in the absence of one of the adjacent owners. Other topics discussed include the status of porches, gazebos, hinges, doors, locks, keys, structures providing water access, perpendicular and parallel poles, and conveyance from outside a city-accessible area into a city.

23A.1	PESACHIM 1	6 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23B.1	PESACHIM 2	6 CREDITS	COREQUISITE: 128, PASSOVER LAWS

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the early chapters of Pesachim. Primary topics include the leavening process and leavened baked goods.

23C.1	PESACHIM 3	6 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23D.1	PESACHIM 4	6 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23E.1	PESACHIM 5	6 CREDITS	COREQUISITE: 128, PASSOVER LAWS

Description: These courses focus on the principles in the middle chapters of Pesachim. Primary topics include types and mixtures of different doughs and baked goods, town customs, behaviors of the natives of historical Jericho and reactions to those behaviors, and other thematic topics.

24A.1	ROSH HASHANA 1	6 CREDITS	COREQUISITE: 134, LAWS OF ROSH HASHANA

Description: The early chapters of Rosh hashana and their themes and concepts are explored in-depth in this course. Primary topics include the starting dates of several annual cycles, delay of pledges, alternate systems for calculating historical time periods (a single day counted as a month, a single day or month counted as a year), days of judgment, individual and collective judgment, aspects of Rosh Hashanah and other festivals, proclamation of a new month, calculations of the new month, and reconciling differences between lunar and solar calendars with leap years.

26A.1	SUKKAH 1	6 CREDITS	COREQUISITE: 137, LAWS OF SUKKAH

Description: This course analyzes the text and key elements of the first chapter of Sukkah. Proper construction, dimensions, and characteristics of a Sukkah booth, and actual and virtual walls and roof extensions, will be explained.

26B.1	SUKKAH 2	6 CREDITS	COREQUISITE: 137, LAWS OF SUKKAH

Description: The second chapter of Sukkah explores the requirements for a Sukkah roof, placing a Sukkah on a wagon, boat, tree, or animal, a tree as a wall of a Sukkah, individuals exempt from use of a Sukkah, and use of a small Sukkah, as well as other related topics.

27A.1	BEITZAH 1	6 CREDITS	COREQUISITE: 129A, LAWS OF FESTIVALS 1
27B.1	BEITZAH 2	6 CREDITS	COREQUISITE: 129B, LAWS OF FESTIVALS 2

Description: These courses focus on examination of the core text by analysis of the overarching themes of the early chapters of Beitzah. Primary topics include holiday preparations, activities, and procedures.

27C.1	BEITZAH 3	6 CREDITS	COREQUISITE: 129A, LAWS OF FESTIVALS 1
27D.1	BEITZAH 4	6 CREDITS	COREQUISITE: 3.4, MAIMONIDES-LAWS OF FESTIVALS
27E.1	BEITZAH 5	6 CREDITS	COREQUISITE: 3.4, MAIMONIDES-LAWS OF FESTIVALS

Description: Study of final chapters of Beitzah will include discussion of procedures for trapping and feeding fish, animals, and birds; considerations arising in slaughtering a diseased or deathly ill animal; inspecting and slaughtering a first-born animal; inspecting an ill or diseased animal after slaughter; reserving a portion of an animal carcass; measuring or valuating; sharpening a knife; mentioning an amount or a weight or a price when taking an item; transporting; chopping wood; and the predestined status of a choice made subsequently.

28A.1	TAANIS 1	6 CREDITS	COREQUISITE: 3.10, MAIMONIDES- LAWS OF TAANIS

Description: This course covers the first chapter of Taanis. Primary topics include the seasonal cycle of weather and its effects on daily life.

28B.1	TAANIS 2	6 CREDITS	COREQUISITE: 133, LAWS OF TAANIS

Description: This course provides for in-depth exploration of areas in the second chapter of Taanis. Primary topics include historical procedures at times of drought and the Tannaic book Megillas Taanis.

29B.1	CHAGIGAH 2	6 CREDITS	COREQUISITE: 9.2, MAIMONIDES-LAWS OF CHAGIGAH

Description: The second chapter of Chagigah is studied in this course and addresses topics including methods of teaching and learning, ancient tales, and festival procedures.

210A.1	MOED KOTON 1	6 CREDITS	COREQUISITE: J56A, KAGAN - LAWS OF INTERMEDIATE DAYS

Description: Activities during festival days and as part of the agricultural cycle, are among the topics discussed in the first chapter of Moed Koton. These courses involve an in depth study of the Talmudic principles in this chapter.

210B.1	MOED KOTON 2	6 CREDITS	COREQUISITE: J56A, KAGAN - LAWS OF INTERMEDIATE DAYS

Description: These courses explore and analyze the second chapter of Moed Koton. Activities during mourning, and additional activities during festival days and as part of the agricultural cycle, are among the topics discussed.

210C.1	MOED KOTON 3	6 CREDITS	COREQUISITE: 14.4, MAIMONIDES- LAWS OF MOURNING

Description: The final chapter of Moed Koton is concerned with various aspects of mourning the death of relatives, with related topics explored as well.

211B.1	MEGILLAH 2	6 CREDITS	COREQUISITE: 139, LAWS OF MEGILLAH

Description: In these courses students analyze the text and important themes in the second chapter of Megillah. The second chapter of Megillah explores the historic Megillah manuscript style and applications for those who use the Megillah in modern times.

211D.1	MEGILLAH 4	6 CREDITS	COREQUISITE: 139, LAWS OF MEGILLAH

Description: These courses involve a critical analysis of the text of the final chapters of Megillah. Primary topics include the role of different people in communal events and procedures for fulfilling those roles, appropriate attitudes to leadership roles, and proper use of proceeds from the sale of public objects or land.

31A.1	YEVAMOS 1	6 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS
31B.1	YEVAMOS 2	6 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS
31C.1	YEVAMOS 3	6 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS

Description: These courses focus on the early chapters of Yevamos, which contain an in-depth exploration of family relationships, marital arrangements, and the intersection of family relationships with marital arrangements. Areas to be examined include. Primary topics include non-incestuous marriages between relatives, marriage arrangements focused on bloodline preservation in the event of the death of a husband, doubtful betrothal, forms of marriage bonds, and the need for positive identification of the father of a child in the case of serial marriages.

32A.1	KSUBOS 1	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32B.1	KSUBOS 2	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS

Description: The early chapters of Ksubos describe amounts and circumstances of marriage dowries, scheduling wedding ceremonies, a groom whose bride was found not to be faithful, self-incrimination or self-testimony regarding status before marriage, contracts, and bearing witness or signing contracts under duress. In these courses, students delve into these topics to gain an understanding of the comprehensive principles in these chapters.

32C.1	KSUBOS 3	6 CREDITS	COREQUISITE: 4.4, MAIMONIDES-IMMORAL BEHAVIOR
32D.1	KSUBOS 4	6 CREDITS	COREQUISITE: 4.4, MAIMONIDES-IMMORAL BEHAVIOR
32E.1	KSUBOS 5	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32F.1	KSUBOS 6	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32G.1	KSUBOS 7	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32H.1	KSUBOS 8	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32I.1	KSUBOS 9	6 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS

Description: These courses explore and analyze the middle chapters of Kesubos. Key topics include historical penalties for seduction and for rape, appropriate punishments when several penalties are due simultaneously, betrothal and full marriage status, required and voluntary dowries, collection of dowry upon divorce or death of a husband, mutual rights and obligations in marriage, grounds for mandatory divorce, property inherited by a wife, husband's withdrawal of rights in his wife's property, and rights to payment from a dowry.

33A.1	NEDARIM 1	6 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS
33B.1	NEDARIM 2	6 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS
33C.1	NEDARIM 3	6 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS

Description: The early chapters of Nedarim are studied in depth in these courses. Primary topics include expressions of vows and oaths and pledges, expressions and circumstances that do not obligate the speaker, and stringencies and leniencies relating to vows and their expressions.

36A.1	GITIN 1	6 CREDITS	COREQUISITE: 305A, DIVORCE PROCEEDINGS
36B.1	GITIN 2	6 CREDITS	COREQUISITE: 305A, DIVORCE PROCEEDINGS
36C.1	GITIN 3	6 CREDITS	COREQUISITE: 4.2, MAIMONIDES- DIVORCE LAWS

Description: These courses analyze the concepts and themes in the early chapters of Gitin. Among the topics discussed are the requirements of a divorce or manumission document, creating a delivery agent, methods for an agent to effect delivery, and the status of a lost and subsequently found document.

37A.1	KIDUSHIN 1	6 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: These courses involve a critical analysis of the text and a synthesis of comprehensive principles based on individual elements in the first chapter of Kidushin. Primary topics include methods of betrothal, and the extent of parental control over the marital choices of a daughter. This wide-ranging course investigates additional topics ranging from designation, and acquisition and dissolution of various types of servitude, to redemption of sold property, acquisition methods and encompassing obligations between father and son, and rewards for good deeds.

37B.1	KIDUSHIN 2	6 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: These courses involve an in-depth discussion of the second chapter of Kidushin, which is considered with procedural aspects of betrothal.

37C.1	KIDUSHIN 3	6 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2
37D.1	KIDUSHIN 4	6 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: The final chapters of Kiddushin explore topics including establishment of betrothals and divorces to take effect at later times, conditional betrothals, contradictory testimony between a man and woman as to their marital status, the lineageof children in different circumstances, culture as reflected in language, Babylonian geography and family lives related to areas of Babylonia

TALMUD SURVEY COURSES

41A.2	BAVA KAMA 1	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41B.2	BAVA KAMA 2	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41C.2	BAVA KAMA 3	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES

Description: These courses provide an overview of the text and enable the student to achieve mastery over the content of the early chapters of Bava Kama. Primary topics include damages caused by a person's animal, by a fire he set, by him directly, or by a pit or stumbling block he dug or placed in a public domain, and the amount and method of payment established for all of these circumstances.

41D.2	BAVA KAMA 4	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41E.2	BAVA KAMA 5	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41F.2	BAVA KAMA 6	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41G.2	BAVA KAMA 7	4 CREDITS	COREQUISITE: 435, LAWS OF BURGLARY

Description: Primary topics discussed in the middle chapters of Bava Kama include distinctions between animals that are habitual damagers and those that are not. Cases of doubt as to the extent of damage caused, consequences of negligence by guardians or negligent placement of objects or pits in public domains or allowing fire to get out of control, the penalties of double damages, and quadruple/quintuple and 25% additional damage payments in appropriate situations. Students gain a comprehensive understanding of the background and context of the middle chapters of Bava Kama in these courses.

41H.2	BAVA KAMA 8	4 CREDITS	COREQUISITE: 439, MONETARY DAMAGES
41I.2	BAVA KAMA 9	4 CREDITS	COREQUISITE: 436, LAWS OF ROBBERY 1
41J.2	BAVA KAMA 10	4 CREDITS	COREQUISITE: 436, LAWS OF ROBBERY 2

Description: These courses explore the final chapters of Bava Kama which include a discussion of damages and restitution for assault and battery, ownership of altered stolen objects, the obligation to return stolen objects, and an agent's rights and obligations in expending funds and buying materials.

42A.2	BAVA METZIAH 1	4 CREDITS	COREQUISITE: 411, OWNERSHIP OF PERSONAL PROPERTY
42B.2	BAVA METZIAH 2	4 CREDITS	COREQUISITE: 423, LAWS AFFECTING LOST ITEMS
42C.2	BAVA METZIAH 3	4 CREDITS	COREQUISITE: 428, WATCHMAN'S OBLIGATIONS

Description: These courses provide an overview of the text of the early chapters of Bava Metzia. Primary topics include disputes regarding ownership of mobile objects, lost documents of indebtedness or divorce, returning found objects, and obligations of a trustee.

42D.2	BAVA METZIAH 4	4 CREDITS	COREQUISITE: 420, ANNULMENT OF SALES
42E.2	BAVA METZIAH 5	4 CREDITS	COREQUISITE: 221, KARO - BUSINESS LAW 3
42F.2	BAVA METZIAH 6	4 CREDITS	COREQUISITE: 433A, WORKERS' WAGES 1
42G.2	BAVA METZIAH 7	4 CREDITS	COREQUISITE: 433, WORKERS' WAGES 2

Description: In these courses students achieve mastery over the content of the middle chapters of Bava Metzia. Primary topics include acquisition methods for mobile objects, laws of usury and fair pricing, obligations and rights of craftsmen and of hired workers.

42H.2	BAVA METZIAH 8	4 CREDITS	COREQUISITE: 13.2A, MAIMONIDES- BORROWED ARTICLES 1
42I.2	BAVA METZIAH 9	4 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A
42J.2	BAVA METZIAH 10	4 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A

Description: The final chapters of Bava Metzia describe the obligations and rights of a borrower of mobile objects, of a lessee of fixed property, and of owners in a co-operative. In these courses, students study the background and critical elements of the text.

43A.2	BAVA BASRA 1	4 CREDITS	COREQUISITE: 414, PARTNERSHIP IN REAL PROPERTY
43B.2	BAVA BASRA 2	4 CREDITS	COREQUISITE: 413, DAMAGES TO NEIGHBORS
43C.2	BAVA BASRA 3	4 CREDITS	COREQUISITE: 412, OWNERSHIP OF REAL PROPERTY

Description: These courses discuss the context and content of the earlier chapters of Bava Basra. Key topics include mutual responsibilities and rights of partners in structures, zoning regulations and remedies, requirements for acquisition of land, proof of land ownership.

43D.2	BAVA BASRA 4	4 CREDITS	COREQUISITE: 412, OWNERSHIP OF REAL PROPERTY
43E.2	BAVA BASRA 5	4 CREDITS	COREQUISITE: 419A, LAWS OF BUYING AND SELLING 1
43F.2	BAVA BASRA 6	4 CREDITS	COREQUISITE: 12.1, ACQUISITION THROUGH PURCHASE

Description: These courses provide an overview of the middle chapters of Bava Basra. Acquisition of ancillary rights to acquired property, ancillary rights based on functionality and based on proximity, acquisition of produce, acquisition of land as ancillary to sale of produce and acquisition of produce as ancillary to acquisition of land, are explained.

43G.2	BAVA BASRA 7	4 CREDITS	COREQUISITE: 419A, LAWS OF BUYING AND SELLING 1
43H.2	BAVA BASRA 8	4 CREDITS	COREQUISITE: 426, LAWS GOVERNING ESTATES
43I.2	BAVA BASRA 9	4 CREDITS	COREQUISITE: 12.2A, MAIMONIDES- BUSINESS LAW 2A
43J.2	BAVA BASRA 10	4 CREDITS	COREQUISITE: 13.4A, MAIMONIDES- BUSINESS LAW 3A

Description: These courses provide the background for the final chapters of Bava Basra, allowing the student to fully master the content of the text. Laws of inheritance and order of inheritors, orphans' obligations to other relatives as part of inheritance, property of the deceased, and the form and efficacy of documents as a means of acquisition, are addressed.

44A.2	SANHEDRIN 1	4 CREDITS	COREQUISITE: 401, LAWS PERTAINING TO JUDGES
44B.2	SANHEDRIN 2	4 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY
44C.2	SANHEDRIN 3	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44D.2	SANHEDRIN 4	4 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY

Description: The early chapters of Sanhedrin discuss the makeup of a court for various jurisdictions, the 71-member Great Court and its jurisdiction, the treatment of high ranking officials as a litigant or as a witness and in other circumstances, individuals ineligible from acting as witnesses, selecting members of an ad hoc court. Students gain a comprehensive understanding of the treatment of witnesses in court, the obligation to bear witness, court procedures, method by which a court determines a verdict, and the obligation of immediate execution of a verdict.

44E.2	SANHEDRIN 5	4 CREDITS	COREQUISITE: 402, LAWS PERTAINING TO TESTIMONY
44F.2	SANHEDRIN 6	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44G.2	SANHEDRIN 7	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: These courses provide an overview of the middle chapters of Sanhedrin. Primary topics include details of witness examination, leeway for differences in testimony, details of procedures for coming to a verdict, conveying a murderer to the place of execution, the burial obligation, ancient types of capital punishment in the Temple era, obligations applying to all of mankind, juvenile delinquency and methods of dealing with delinquency.

44I.2	SANHEDRIN 9	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS
44J.2	SANHEDRIN 10	4 CREDITS	COREQUISITE: 14.5, MAMRIM
44K.2	SANHEDRIN 11	4 CREDITS	COREQUISITE: 14.5, MAMRIM

Description: These courses examine the final chapters of Sanhedrin, including historical means of execution in cases of capital punishment, repeat offenders of non-capital crimes, offenders who cannot be individually identified, execution by the less severe method in cases of doubt, hierarchy of severity of execution methods.

45A.2	MAKOS 1	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: The first chapter of Makos discusses witnesses who were seen at a different location at the time their testimony allegedly took place and their penalties under varying circumstances.In these courses, students explore these concepts.

45B.2	MAKOS 2	4 CREDITS	COREQUISITE: 14.3, LAWS GOVERNING TRANSGRESSORS

Description: These courses explore the second chapter of Makos. The treatment of one who commits homicide unintentionally, degrees of direct and indirect causation of homicide, exile and exit from exile, and the homicide victim's avenger and his privileges, are among the topics discussed.

46A.2	SHAVUOS 1	4 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS
46B.2	SHAVUOS 2	4 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS

Description: These courses provide an overview of the text and enable the student to achieve mastery over the content of the early chapters of Shavuos. Students will explore the themes and core elements described in Shavuos 1 and Shavuos 2.

46C.2	SHAVUOS 3	4 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS
46D.2	SHAVUOS 4	4 CREDITS	COREQUISITE: 226, LAWS PERTAINING TO VOWS

Description: Topics to be explored in these courses include various types of oaths and penalties for their violation, superfluous oaths, and oaths of witnesses. Students will gain a comprehensive understanding of the content of the middle chapters of Shavuos.

46E.2	SHAVUOS 5	4 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46F.2	SHAVUOS 6	4 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46G.2	SHAVUOS 7	4 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1
46H.2	SHAVUOS 8	4 CREDITS	COREQUISITE: 6.1A, MAIMONIDES-LAWS PERTAINING TO VOWS 1

Description: Primary topics in the final chapters of Shavuos include oaths of trustees, court-imposed oaths, oaths by defendants and by plaintiffs, and types of trustees and their obligations. These courses provide an overview of the key elements of the text.

47A.2	AVODAH ZARAH 1	4 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47B.2	AVODAH ZARAH 2	4 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47C.2	AVODAH ZARAH 3	4 CREDITS	COREQUISITE: 1.4A, MAIMONIDES- PAGAN PRACTICES 1
47D.2	AVODAH ZARAH 4	4 CREDITS	COREQUISITE: 219A1, KARO - FORBIDDEN FOODS 2A
47E.2	AVODAH ZARAH 5	4 CREDITS	COREQUISITE: 219A2, KARO - FORBIDDEN FOODS 2A

Description: These courses explore theTalmudic commentaries relating to the five chapters of Avodah Zarah. The commentaries of Rashi and Tosefos among others, provide an overview of the text and enable the student to achieve mastery over the content of the early chapters of Avodah Zarah.

51A.2	ZEVACHIM 1	4 CREDITS	COREQUISITE: 8.5, ROLE OF KOHANIM IN TEMPLE 3
51B.2	ZEVACHIM 2	4 CREDITS	COREQUISITE: 8.3A, MAIMONIDES- ENTERING THE TEMPLE 1
51C.2	ZEVACHIM 3	4 CREDITS	COREQUISITE: 8.3B, MAIMONIDES- ENTERING THE TEMPLE 2
51D.2	ZEVACHIM 4	4 CREDITS	COREQUISITE: 8.3A, MAIMONIDES- ENTERING THE TEMPLE 1

Description: These courses analyze the later chapters of Zevachim. Students study in chavrusah partnership, enabling students to discuss and debate the complex Talmudic concepts described in these chapters.

52A.2	MENACHOS 1	4 CREDITS	COREQUISITE: 8.2A, MAIMONIDES- VESSELS OF TEMPLE 1
52B.2	MENACHOS 2	4 CREDITS	COREQUISITE: 8.2B, MAIMONIDES- VESSELS OF TEMPLE 2

52C.2	MENACHOS 3	4 CREDITS	COREQUISITE: 103, LAWS OF TEFILLIN

Description: The early chapters in Menachos discuss concepts and themes relating to the Mincha offering. Through the perspective of priniciple Talmudic commentaries, students gain a comprehensive understanding of the background and content of these chapters.

53A.2	BCHOROS 1	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53B.2	BCHOROS 2	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53C.2	BCHOROS 3	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS

Description: These courses explore and analyze the early chapters of Bchoros which describe special cases in relation to ownership of animals.

53F.2	BCHOROS 6	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53G.2	BCHOROS 7	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53H.2	BCHOROS 8	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS
53I.2	BCHOROS 9	4 CREDITS	COREQUISITE: 9.3, MAIMONIDES- LAWS GOVERNING FIRST BORNS

Description: The final chapters of Bchoros describe types of animal and human blemishes, different classifications of human first-borns, a father or first-born son who die within or after thirty days, prerogatives of a first born heir, and animal tithes. These courses provide an overview of the text and content of these chapters.

55A.2	TEMURAH 1	4 CREDITS	COREQUISITE: 9.6A, MAIMONIDES- LAWS OF EXCHANGES 1

Description: This course describes the background and context of the first chapter of Temurah. In addition to the historical concept of Temurah, illegal actions and whether illegal actions can transform the status of an item are discussed.

56C.2	KRIESUS 3	4 CREDITS	COREQUISITE: 9.5, MAIMONIDES- TEMPLAR REGULATIONS

Description: The third chapter of Kriesus explores the parameters of the historical requirements associated with services at the ancient Temple, and the consequences of various levels of inadvertence and intent. This course provides an overview of the these themes and pricinciples.

59A.2	CHULIN 1	4 CREDITS	COREQUISITE: 201, LAWS OF SHECHITA
59B.2	CHULIN 2	4 CREDITS	COREQUISITE: 201, LAWS OF SHECHITA
59C.2	CHULIN 3	4 CREDITS	COREQUISITE: 203, LAWS OF TREIFOS

Description: These courses examine the early chapters of Chulin. Students explore the content of these chapters, including methods of animal slaughter and diseases and malformations that render an animal unfit to eat.

59D.2	CHULIN 4	4 CREDITS	COREQUISITE: 209, DIETARY LAWS 2
59E.2	CHULIN 5	4 CREDITS	COREQUISITE: 209, DIETARY LAWS 2
59F.2	CHULIN 6	4 CREDITS	COREQUISITE: 208, DIETARY LAWS 1
59G.2	CHULIN 7	4 CREDITS	COREQUISITE: 217A, DIETARY LAWS 4A

Description: In these courses, students study the content of the middle chapters of Chulin. They continue to explore diseases and malformations of animals, among other topics discussed in the text.

59H.2	CHULIN 8	4 CREDITS	COREQUISITE: 216A, DIETARY LAWS 3A
59I.2	CHULIN 9	4 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS
59J.2	CHULIN 10	4 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS

Description: The final chapters of Chulin continue the discussion of animal slaughter. Cuts of Meat and shearing of wool are also discussed. These courses provide an overview of the text and associated commentaries.

61A.2	NIDDAH 1	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 1
61B.2	NIDDAH 2	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 2
61C.2	NIDDAH 3	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 3
61D.2	NIDDAH 4	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 4

Description: These courses discuss the topics described in the early chapters of Niddah, including miscarriage, the state of childbirth and and the menstrual cycle.

61E.2	NIDDAH 5	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 5
61F.2	NIDDAH 6	4 CREDITS	COREQUISITE: 224, LAWS OF SEPARATION
61G.2	NIDDAH 7	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 7
61H.2	NIDDAH 8	4 CREDITS	COREQUISITE: 223B, LAWS OF NIDDAH 8
61I.2	NIDDAH 9	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 9
61J.2	NIDDAH 10	4 CREDITS	COREQUISITE: 223A, LAWS OF NIDDAH 10

Description: These courses explore the final chapters of Niddah. Topics to be examined include childbirth, childhood and adulthood.

62A.2	KAILIM 1	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62B.2	KAILIM 2	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62C.2	KAILIM 3	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS

Description: These courses examine the first third of Kailim, known as Bava Kamma (The first gate) of the tractate. The primary topics include sources of contamination of utensils and tools, historical reverential locations and associated ancient rules for entry to each, and a survey of non-metal utensils and vessels and ovens of various materials and in various configurations.

62G.2	KAILIM 7	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62H.2	KAILIM 8	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS
62I.2	KAILIM 9	4 CREDITS	COREQUISITE: 10.7, LAWS RELATING TO UTENSILS

Description: The final third of Kailim describes impurity of various types of tools, various distinctions among the usage of certain items in three different ways, the outside and inside of vessels, items of a professional and of a layman, cloth and clothes, and glassware. These courses provide an overview of the text and enable the student to achieve mastery over the content of the final third of Kailim, known as Bava Basra (The final gate) of the tractate.

66A.2	MIKVAOS 1	4 CREDITS	COREQUISITE: 10.8A, MAIMONIDES- RITUAL PURITY 1
66B.2	MIKVAOS 2	4 CREDITS	COREQUISITE: 10.8A, MAIMONIDES- RITUAL PURITY 1
66C.2	MIKVAOS 3	4 CREDITS	COREQUISITE: 224B, LAWS OF MIKVAH 1
66D.2	MIKVAOS 4	4 CREDITS	COREQUISITE: 224B, LAWS OF MIKVAH 1

Description: These courses discuss the early chapters of Mikvaos. Key subjects include two people drinking from a single water source, immersion in a pool of uncertain size, immersion in viscous mud, drawn water, and pools of water in various configurations.

69A.2	YODAYIM UKTZIN 1	4 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM
69B.2	YODAYIM UKTZIN 2	4 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM
69C.2	YODAYIM UKTZIN 3	4 CREDITS	COREQUISITE: 110, LAWS OF NETILAS YODAYIM

Description: These courses explore the content of Tractate Uktzin, which has three chapters. Among the topics discussed are whether parts of produce used for holding and conveyance and shells and husks of produce are intrinsic parts of the produce, and the importance of peace and reward for the righteous.

11A.2	BRACHOS 1	4 CREDITS	COREQUISITE: 105, LAWS OF KRIAS SHMA
11B.2	BRACHOS 2	4 CREDITS	COREQUISITE: 105, LAWS OF KRIAS SHMA

11C.2	BRACHOS 3	4 CREDITS	COREQUISITE: 106, LAWS OF PRAYER
11D.2	BRACHOS 4	4 CREDITS	COREQUISITE: 106, LAWS OF PRAYER

Description: These courses provide an overview of the text and discuss the principles and practical applications of the early chapters of Berachos.

11E.2	BRACHOS 5	4 CREDITS	COREQUISITE: 2.1, MAIMONIDES- LAWS OF KRIAS SHMA
11F.2	BRACHOS 6	4 CREDITS	COREQUISITE: 114, LAWS OF BLESSINGS
11G.2	BRACHOS 7	4 CREDITS	COREQUISITE: 114, LAWS OF BLESSINGS

Description: An overview of the middle chapters of Berachos is provided in this group of courses.

14A.2	KLAYIM 1	4 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14B.2	KLAYIM 2	4 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14C.2	KLAYIM 3	4 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14D.2	KLAYIM 4	4 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS
14E.2	KLAYIM 5	4 CREDITS	COREQUISITE: 7.1, MAIMONIDES- KELAYIM PROHIBITIONS

Description: The early chapters of Klayim involve pairs of plant varieties that are and are not intermixtures (Klayim); a field planted of one type that is converted to another; amount of intermixtures requiring uprooting; patterns of intermixture; leaves of one type shading another type of plant; separations between species; planting in a vineyard; criteria for classification as a vineyard; a vineyard that is partially uprooted; and accidental planting in a vineyard. These courses enable the student to master these principles.

17A.2	MAASROS 1	4 CREDITS	COREQUISITE: 7.4, LEVITICAL TITHES
17B.2	MAASROS 2	4 CREDITS	COREQUISITE: 7.4, LEVITICAL TITHES

Description: These courses enable the student to achieve mastery over the early chapters of Maasros. The primary topic discussed in these chapters is an organized mechanism for the societal redistribution of wealth through mandated separation of prescribed percentages of produce grown.

18A.2	CHALLAH 1	4 CREDITS	COREQUISITE: 7.6, MAIMONIDES- KOHANIM'S PORTIONS

Description: In this course, students discuss the principal concepts in the first chapter of Tractate Challah.

21A.2	SHABBOS 1	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21B.2	SHABBOS 2	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21C.2	SHABBOS 3	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21D.2	SHABBOS 4	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: These courses provide an overview of the text and enable the student to achieve mastery over the content of the early chapters of Shabbos. Among the topics discussed the definitions of private, public, and neutral domains, candle lighting, determining exact times of twilight and evening, use of ovens, cooking and keeping foods warm.

21E.2	SHABBOS 5	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21F.2	SHABBOS 6	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21G.2	SHABBOS 7	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21H.2	SHABBOS 8	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21I.2	SHABBOS 9	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: These courses involve a discussion of the concepts described in the middle chapters of Shabbos. Students analyze the 39 types of work action and other related topics and gain a comprehensive understanding of the complex themes and principles in these chapters.

21J.2	SHABBOS 10	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21K.2	SHABBOS 11	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21L.2	SHABBOS 12	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21M.2	SHABBOS 13	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21N.2	SHABBOS 14	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21O.2	SHABBOS 15	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21P.2	SHABBOS 16	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21Q.2	SHABBOS 17	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1
21R.2	SHABBOS 18	4 CREDITS	COREQUISITE: 123A, SABBATH LAWS 1

Description: Among the primary topics described in the later chapters of Shabbos are the paramount obligation to care for the sick superceding other considerations, fire safety and rescue on Sabbath, actions such as hurling, building, and weaving, and moving objects within a domain. These courses provide an overview of the concepts and themes in the later chapters of Shabbos.

22A.2	ERUVIN 1	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22B.2	ERUVIN 2	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1

Description: The early chapters of Eruvin delineate the status of alleyways and courtyards as relates to actual and artificial partitions and doorways. They analyze the qualities of a physical space and examine the relevance of the location of an object at the start of the day as to its status throughout the day. These courses explore these concepts as well as various spatial configurations of public, private, and neutral domains, and courtyards, and alleyways.

22C.2	ERUVIN 3	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22D.2	ERUVIN 4	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22E.2	ERUVIN 5	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1

Description: These courses provide an overview of the middle chapters of Eruvin. Creation of partnerships to permit conveyances, limits of travel and modifying areas that may be traveled, the status of cities, mountains and valleys in measuring these areas, and methods of land measurement, are among the topics mentioned in these chapters.

22F.2	ERUVIN 6	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22G.2	ERUVIN 7	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22H.2	ERUVIN 8	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22I.2	ERUVIN 9	4 CREDITS	COREQUISITE: 125A, LAWS OF ERUV 1
22J.2	ERUVIN 10	4 CREDITS	COREQUISITE: 125B, LAWS OF ERUV 2

Description: These courses describe the concepts and themes in the later chapters of Eruvin. Further analysis of partnership in alleys and courtyards, and the status of an alley and yard in the absence of one of the adjacent owners, are among the topics discussed. Other subjects include,the status of porches, gazebos, hinges, doors, locks, keys, structures providing water access, perpendicular and parallel poles, and conveyance from outside a city-accessible area into a city.

23A.2	PESACHIM 1	4 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23B.2	PESACHIM 2	4 CREDITS	COREQUISITE: 128, PASSOVER LAWS

Description: These courses provide an overview of the concepts described in the early chapters of Pesachim. Students analyze the text with the accompanying commentaries to fully master these chapters.

23C.2	PESACHIM 3	4 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23D.2	PESACHIM 4	4 CREDITS	COREQUISITE: 128, PASSOVER LAWS
23E.2	PESACHIM 5	4 CREDITS	COREQUISITE: 128, PASSOVER LAWS

Description: These courses discuss and analyze the key elements in the middle chapters of Pesachim. Types and mixtures of different doughs and baked goods, town customs, behaviors of the natives of historical Jericho and reactions to those behaviors, and other thematic topics are explored.

24A.2	ROSH HASHANA 1	4 CREDITS	COREQUISITE: 134, LAWS OF ROSH HASHANA

Description: These courses provide an overview of the early chapters of Rosh Hashana. Primary topics include the starting dates of several annual cycles, delay of pledges, alternate systems for calculating historical time periods (a single day counted as a month, a single day or month counted as a year), days of judgment, individual and collective judgment, aspects of Rosh Hashanah and other festivals, proclamation of a new month, calculations of the new month, and reconciling differences between lunar and solar calendars with leap years.

26A.2	SUKKAH 1	4 CREDITS	COREQUISITE: 137, LAWS OF SUKKAH

Description: The first chapter of Sukkah describes the proper consturction, dimensions, and characteristics of a Sukkah booth. In this course, students will master the concepts and themes in this chapter.

26B.2	SUKKAH 2	4 CREDITS	COREQUISITE: 137, LAWS OF SUKKAH

Description: These courses discuss the requirements for a Sukkah roof, placing a Sukkah on a wagon, boat, tree, or animal, a tree as a wall of a Sukkah, individuals exempt from use of a Sukkah, and use of a small Sukkah, as described in the second chapter of Sukkah.

26C.2	SUKKAH 3	4 CREDITS	COREQUISITE: 136, LAWS OF LULAV
26D.2	SUKKAH 4	4 CREDITS	COREQUISITE: 136, LAWS OF LULAV
26E.2	SUKKAH 5	4 CREDITS	COREQUISITE: 136, LAWS OF LULAV

Description: The final chapters of Sukkah continue to discuss topics and themes prevalent in Tractate Sukkah. These courses involve an in depth examination of the text and associated Talmudic commentaries to elucidate and expound on the historical and practical applications of these chapters.

27A.2	BEITZAH 1	4 CREDITS	COREQUISITE: 129A, LAWS OF FESTIVALS 1
27B.2	BEITZAH 2	4 CREDITS	COREQUISITE: 129B, LAWS OF FESTIVALS 2

Description: These courses discuss holiday preparations, activities and procedures as described in the early chapters of Beitzah.

27C.2	BEITZAH 3	4 CREDITS	COREQUISITE: 129A, LAWS OF FESTIVALS 1
27D.2	BEITZAH 4	4 CREDITS	COREQUISITE: 3.4, MAIMONIDES-LAWS OF FESTIVALS
27E.2	BEITZAH 5	4 CREDITS	COREQUISITE: 3.4, MAIMONIDES-LAWS OF FESTIVALS

Description: These courses provide an overview of the text and content of the final chapters of Beitzah. Primary topics include procedures for trapping and feeding fish, animals, and birds; considerations arising in slaughtering a diseased or deathly ill animal; inspecting and slaughtering a first-born animal; inspecting an ill or diseased animal after slaughter; reserving a portion of an animal carcass; measuring or valuating; sharpening a knife; mentioning an amount or a weight or a price when taking an item; transporting; chopping wood; and the predestined status of a choice made subsequently.

28A.2	TAANIS 1	4 CREDITS	COREQUISITE: 3.10, MAIMONIDES- LAWS OF TAANIS

Description: The first chapter of Taanis describes the seasonal cycle of weather and its effects on daily life, among other thematic ideas. This course discussed these ideas in depth and enables the student to master the content of this chapter.

28B.2	TAANIS 2	4 CREDITS	COREQUISITE: 133, LAWS OF TAANIS

Description: This courses discuss the background and context of the second chapter of Taanis. Historical procedures at times of drought and the Tannaic book Megillas Taanis are key topics discussed in this course.

29B.2	CHAGIGAH 2	4 CREDITS	COREQUISITE: 9.2, MAIMONIDES-LAWS OF CHAGIGAH

Description: This course explores the second chapter of Chagigah. Primary topics include methods of teaching and learning, ancient tales, and festival procedures.

210A.2	MOED KOTON 1	4 CREDITS	COREQUISITE: J56A, KAGAN - LAWS OF INTERMEDIATE DAYS

Description: This course discusses the themes and principles in the first chapter of Moed Koton. The primary topic is activities during festival days and as part of the agricultural cycle.

210B.2	MOED KOTON 2	4 CREDITS	COREQUISITE: J56A, KAGAN - LAWS OF INTERMEDIATE DAYS

Description: This course investigates the second chapter of Moed Koton. Topics discussed in this course include activities during mourning, and additional activities during festival days and as part of the agricultural cycle.

210C.2	MOED KOTON 3	4 CREDITS	COREQUISITE: 14.4, MAIMONIDES- LAWS OF MOURNING

Description: Topics related to the mourning process, as discussed in the third chapter of Moed Koton, are explored in this course.

211B.2	MEGILLAH 2	4 CREDITS	COREQUISITE: 139, LAWS OF MEGILLAH

Description: The second chapter of Megillah explores the historical Megillah manuscript style and applications for those who use the Megillah in modern times. This course discusses these and other related ideas and provides the student with relevant context for a comprehensive understanding of the material.

211D.2	MEGILLAH 4	4 CREDITS	COREQUISITE: 139, LAWS OF MEGILLAH

Description: This course describes the key themes in the final chapters of Megillah. The role of different people in communal events and procedures for fulfilling those roles, appropriate attitudes to leadership roles, and proper use of proceeds from the sale of public objects or land are among the topics discussed.

31A.2	YEVAMOS 1	4 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS
31B.2	YEVAMOS 2	4 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS
31C.2	YEVAMOS 3	4 CREDITS	COREQUISITE: 307, LAWS OF CHILDLESS WIDOWS

Description: These courses analyze the early chapters of Yevamos. These chapters describe family realtionships, marital arrangements, and the intersection of family relationships with marital arrangements. Specific cases pertaining to marriage are discussed, including non-incesturous marriages between relatives, marriage arrangements focused on bloodline preservation in the death of a husband, doubtful betrothal, forms of marriage bonds, and the need for positive identification of the father of a child in the case of serial marriages.

32A.2	KSUBOS 1	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32B.2	KSUBOS 2	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS

Description: In these courses, students study the content of the early chapters of Ksubos. Primary topics include amounts and circumstances of marriage dowries, scheduling wedding ceremonies, a groom whose bride was found not to be faithful, self-incrimination or self-testimony regarding status before marriage, contracts, and bearing witness or signing contracts under duress.

32C.2	KSUBOS 3	4 CREDITS	COREQUISITE: 4.4, MAIMONIDES-IMMORAL BEHAVIOR
32D.2	KSUBOS 4	4 CREDITS	COREQUISITE: 4.4, MAIMONIDES-IMMORAL BEHAVIOR
32E.2	KSUBOS 5	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32F.2	KSUBOS 6	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32G.2	KSUBOS 7	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32H.2	KSUBOS 8	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS
32I.2	KSUBOS 9	4 CREDITS	COREQUISITE: 304, MARRIAGE CONTRACTS

Description: These courses examine the content of the middle chapters of Kesubos. Historical penalties for seduction and for rape, appropriate punishments when several penalties are due simultaneously, betrothal and full marriage status, required and voluntary dowries, collection of dowry upon divorce or death of a husband, mutual rights and obligations in marriage, grounds for mandatory divorce, property inherited by a wife, husband's withdrawal of rights in his wife's property, rights to payment from a dowry, are among the topics mentioned in these courses.

33A.2	NEDARIM 1	4 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS
33B.2	NEDARIM 2	4 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS
33C.2	NEDARIM 3	4 CREDITS	COREQUISITE: 225, LAWS OF OBLIGATIONS

Description: These courses provide an overview of the early chapters of Nedarim. Primary topics include expressions of vows and oaths and pledges, expressions and circumstances that do not obligate the speaker, and stringencies and leniencies relating to vows and their expressions.

36A.2	GITIN 1	4 CREDITS	COREQUISITE: 305A, DIVORCE PROCEEDINGS
36B.2	GITIN 2	4 CREDITS	COREQUISITE: 305A, DIVORCE PROCEEDINGS
36C.2	GITIN 3	4 CREDITS	COREQUISITE: 4.2, MAIMONIDES- DIVORCE LAWS

Description: These courses describe the key principles and themes in the early chapters of Gitin. Requirements of a divorce or manumission document, creating a delivery agent, methods for an agent to effect delivery, and the status of a lost and subsequently found document are discussed in these courses.

37A.2	KIDUSHIN 1	4 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: These courses provide an overview of the text of the first chapter of Kidushin. Primary topics include methods of betrothal, and the extent of parental control over the marital choices of a daughter. Other topics mentioned include designation, and acquisition and dissolution of various types of servitude, redemption of sold property, acquisition methods, obligations between father and son, and rewards for good deeds.

37B.2	KIDUSHIN 2	4 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: These courses provide an overview of the text of the second chapter of Kidushin which primarily discusses topics related to betrothal.

37C.2	KIDUSHIN 3	4 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2
37D.2	KIDUSHIN 4	4 CREDITS	COREQUISITE: 303, KARO - MARITAL LAW 2

Description: These courses provide explore the text and enable the student to achieve mastery over the content of the final chapters of Kidushin. Establishment of betrothals and divorces to take effect at later times, conditional betrothals, contradictory testimony between a man and woman as to their marital status, the lineageof children in different circumstances, culture as reflected in language, Babylonian geography and family lives related to areas of Babylonia, are among the topics discussed.

TALMUD BEKIUS COURSES

41A.3	BAVA KAMA 1	2 CREDITS
41B.3	BAVA KAMA 2	2 CREDITS
41C.3	BAVA KAMA 3	2 CREDITS

Description: These courses involve further discussion of the text of the early chapters of Bava Kama. Primary topics include damages caused by a person's animal, by a fire he set, by him directly, or by a pit or stumbling block he dug or placed in a public domain, and the amount and method of payment established for all of these circumstances.

41D.3	BAVA KAMA 4	2 CREDITS
41E.3	BAVA KAMA 5	2 CREDITS

41F.3	BAVA KAMA 6	2 CREDITS
41G.3	BAVA KAMA 7	2 CREDITS

Description: In these courses, the middle chapters of Bava Kama are further explored. Distinctions between animals that are habitual damagers and those that are not. Cases of doubt as to the extent of damage caused, consequences of negligence by guardians or negligent placement of objects or pits in public domains or allowing fire to get out of control, the penalties of double damages, and quadruple/quintuple and 25% additional damage payments in appropriate situations.

41H.3	BAVA KAMA 8	2 CREDITS
41I.3	BAVA KAMA 9	2 CREDITS
41J.3	BAVA KAMA 10	2 CREDITS

Description: Damages and restitution for assault and battery, ownership of altered stolen objects, the obligation to return stolen objects, and an agent's rights and obligations in expending funds and buying materials, are further described in these courses. The final chapters of Bava Kama are thoroughly examined and analyzed.

42A.3	BAVA METZIAH 1	2 CREDITS
42B.3	BAVA METZIAH 2	2 CREDITS
42C.3	BAVA METZIAH 3	2 CREDITS

Description: These courses involve further discussion and continued study of the beginning chapters of Bava Metzia. Primary topics include disputes regarding ownership of mobile objects, lost documents of indebtedness or divorce, returning found objects, and obligations of a trustee.

42D.3	BAVA METZIAH 4	2 CREDITS
42E.3	BAVA METZIAH 5	2 CREDITS
42F.3	BAVA METZIAH 6	2 CREDITS
42G.3	BAVA METZIAH 7	2 CREDITS

Description: The middle chapters of Bava Metzia describe acquisition methods for mobile objects, laws of usury and fair pricing, obligations and rights of craftsmen and of hired workers. These courses provide a second look at these ideas and principles.

43A.3	BAVA BASRA 1	2 CREDITS
43B.3	BAVA BASRA 2	2 CREDITS
43C.3	BAVA BASRA 3	2 CREDITS

Description: These courses involve a supplementary explanation of the text of the earlier chapters of Bava Basra. Key topics include mutual responsibilities and rights of partners in structures, zoning regulations and remedies, requirements for acquisition of land, proof of land ownership.

43D.3	BAVA BASRA 4	2 CREDITS
43E.3	BAVA BASRA 5	2 CREDITS
43F.3	BAVA BASRA 6	2 CREDITS

Description: The middle chapters of Bava Basra are examined in these courses. Acquisition of ancillary rights to acquired property, ancillary rights based on functionality and based on proximity, acquisition of produce, acquisition of land as ancillary to sale of produce and acquisition of produce as ancillary to acquisition of land, are among the topics mentioned in these courses.

43G.3	BAVA BASRA 7	2 CREDITS
43H.3	BAVA BASRA 8	2 CREDITS
43I.3	BAVA BASRA 9	2 CREDITS
43J.3	BAVA BASRA 10	2 CREDITS

Description: These courses further investigate the final chapters of Bava Basra. Among the topics explored are the laws of inheritance and order of inheritors, orphans' obligations to other relatives as part of inheritance, property of a deceased convert, and the form and efficacy of documents as a means of acquisition.

59A.3	CHULIN 1	2 CREDITS
59B.3	CHULIN 2	2 CREDITS
59C.3	CHULIN 3	2 CREDITS

Description: The early chapters of Chulin are studied further in theses courses. Methods of animal slaughter and related topics are discussed and analyzed.

59D.3	CHULIN 4	2 CREDITS
59E.3	CHULIN 5	2 CREDITS
59F.3	CHULIN 6	2 CREDITS
59G.3	CHULIN 7	2 CREDITS

Description: These courses provide the student with a supplementary analysis of the complex topics in the middle chapters of Chulin. Students explore topics related to animal slaughter and their practical applications as described in these chapters.

21A.3	SHABBOS 1	2 CREDITS
21B.3	SHABBOS 2	2 CREDITS
21C.3	SHABBOS 3	2 CREDITS
21D.3	SHABBOS 4	2 CREDITS

Description: The early chapters of Shabbos discuss the complex topics of conveyance of objects among different sorts of domains, definitions of private, public and neutral domains, candlelighting, and determining exact times of twilight. These courses further explore, analyze, and explain these ideas allowing the student to fully grasp these themes and principles.

22A.3	ERUVIN 1	2 CREDITS
22B.3	ERUVIN 2	2 CREDITS

Description: These courses provide additional explanation to students wishing to truly master the challenging topics in the first two chapters of Eruvin. These chapters contain complex discussions about the status of alleyways and courtyards, actual and artificial partitions and doorways that must be considered in permitting and prohibiting conveyance of objects, among others.

22C.3	ERUVIN 3	2 CREDITS
22D.3	ERUVIN 4	2 CREDITS
22E.3	ERUVIN 5	2 CREDITS

Description: These courses further discuss and expound on the middle chapters of Eruvin. Primary topics include creation of partnerships to permit conveyances, limits of travel and modifying areas that may be traveled. The status of cities, mountains and valleys in measuring these areas. Methods of land measurement.

22F.3	ERUVIN 6	2 CREDITS
22G.3	ERUVIN 7	2 CREDITS
22H.3	ERUVIN 8	2 CREDITS
22I.3	ERUVIN 9	2 CREDITS
22J.3	ERUVIN 10	2 CREDITS

Description: The later chapters of Eruvin revolve around topics related to in alleys and courtyards, and the status of an alley and yard in the absence of one of the adjacent owners. These courses further explain these ideas as well as other principles including the status of porches, gazebos, hinges, doors, locks, keys, structures providing water access, and perpendicular and parallel poles.

210A.3	MOED KOTON 1	2 CREDITS

Description: Activities during festival days and as part of the agricultural cycle, as mentioned in Moed Koton 1 are reexamined in this course.

ADDITIONAL COURSE OFFERINGS

E01 ETHICS OF OUR FATHERS 1 CREDIT

Description: The ethical teachings of the great sages of the Babylonian era, including Hillel and Shammai; Rabban Yochanan ben Zakai, the student of Hillel and Shammai, and Rabbi Yochanan's students. Extensive teachings of Rabbi Yochanan's students and Rabbi Yochanan's evaluation of their ethical teachings.

E01A ETHICS OF OUR FATHERS 1 1 CREDIT

Description: Miscellaneous ethical teachings. Various teachings about the value of learning, proper respect of learning, and the teacher-pupil relationship, and inter-personal relationships. The condition of the world and the condition of Man. Exemplars of good and evil behavior and their reward or punishment. Appropriate activities and states at different stages of a person's life.

E01B ETHICS OF OUR FATHERS 2 1 CREDIT

Description: A set of Braisos that have been appended to the Mishnah Avos. The rewards of learning. The lot of the scholar. Methods of acquiring wisdom. The preeminence of Rabbi Yehuda HaNasi and his sons. The importance of living in a community of scholars and learning.

E04 R' JONAH GERONDI'S WRITINGS 1 CREDIT

Description: An exploration of Rabbeinu Yonah's classic ethical work.

E05A R' AARON KOTLER'S WRITINGS 1 1 CREDIT

Description: This course explores the role of Talmudic study in history, ethics and interpersonal relationships, and Rabbi Kotler's influence in the pre- and post-World War II period.

E05B R' AARON KOTLER'S WRITINGS 2 1 CREDIT

Description: This course expounds on the Jewish calendar cycle and the lessons derived therefrom.

E07 SHEVET MUSSAR 1 CREDIT

Description: This course explores the importance of setting priorities and goals, ethical considerations of marriage and childrearing. The text used is the ethical classic by Rabbi Eliyahu Hakohen.

E08A LUZZATTO'S WRITINGS IN ETHICS 1 1 CREDIT

Description: The first half of Moshe Chaim Luzzatto's (Ramchal's) classic book of ethics, Mesilas Yeshorim (Path of the Just). Introduction. A person's ethical responsibilities in life. Vigilance. The components of vigilance. Methods of achieving vigilance. Items that retard vigilance and the need to avoid them. Alacrity. The components of alacrity. Methods of achieving alacrity. Items that retard alacrity and the need to avoid them.

E08B LUZZATTO'S WRITINGS IN ETHICS 2 1 CREDIT

Description: The second half of Moshe Chaim Luzzatto's (Ramchal's) classic book of ethics, Mesilas Yeshorim (Path of the Just). Innocence. Details of the trait of innocence. Methods of achieving innocence. Purity. Piety. The components of piety. Measuring and assessing pious behavior. Methods of achieving piety. Humility. Methods of achieving humility. Fear of sin. Methods of achieving fear of living without ethics. Sanctity.

E09 WAYS OF THE RIGHTEOUS 1 CREDIT

Description: A classic work on Jewish ethics by an unknown author. An analysis of various character and behavioral traits. Haughtiness. Humility. Remorse. Brazenness. Love. Impudence. Hatred. Mercy. Cruelty. Joy. Worry. Regret. Anger. Cooperation. Jealousy. Alacrity. Sloth. Generosity. Stinginess. Recall. Forgetfulness. Silence. Falseness. Truth. Flattery. Malicious speech. Repair of one's self and one's mistakes.

E10 R' SALANTER'S MUSSAR APPROACH 1 CREDIT

Description: A collection of writings and thoughts of Rabbi Yisroel Salanter, originator of the Mussar movement, assembled by his student, Rabbi Isaac Blazer (Rav Itzel Peterburger). Appendixes consisting of writings of Rav Itzel himself. Rav Itzel's Shaarei Ohr on the importance of learning Mussar. Five initial letters by Rav Yisroel to his students in the year 1849. Additional letters on the importance of learning Mussar and methods of learning Mussar.

E11 MAALOS HAMIDOS 1 CREDIT

Description: A book of ethics by Rabbi Yechiel ben Binyamin HoRophei.

E13A R' KAGAN'S WORKS IN ETHICS 1 1 CREDIT

Description: The first half of the classic Chofetz Chaim by Rabbi Israel Meir Kagan on the adverse consequences of malicious speech.

E13B R' KAGAN'S WORKS IN ETHICS 2 1 CREDIT

Description: The second half of the classic Chofetz Chaim by Rabbi Israel Meir Kagan on how to avoid negative tale-bearing, and its adverse consequences.

E17 R' LEVOVITZ'S MUSSAR APPROACH 1 CREDIT

Description: This course explores Jewish history, self-development, ethics, human behavior, and observing nature as a tool for personal growth, based on the insights derived and espoused by Rabbi Yeruchom Levovitz, a chief disciple of Rabbi Simcha Zissel Ziv and a student of the Kelm philosophy.

E18 DIVREI EMES 1 CREDIT

Description: This course explores the virtue of humility, guidance in childrearing and tools for personal development based on the book Divrei Emes by Rabbi Alexander Moshe Lapidot.

P02 EIGHT CHAPTERS OF MAIMONIDES 1 CREDIT

Description: The ethical work of the Rambam, written as an introduction to Pirkei Avos, the ethics tractate of the Mishnah.

P04 DUTIES OF THE HEART 1 CREDIT
P04A DUTIES OF THE HEART 1 1 CREDIT

Description: The 12th century classic book of ethics written by Rabbi Bachya ibn Pequda. Examination of human existence.

P05 NACHMANIDES' WRITINGS 1 CREDIT

Description: The non-halachic, philosophical writings of Rabbi Moshe ben Nachman (the Ramban).

P07	R' J. LOEW'S PHILOSOPHIC WORKS	1 CREDIT

Description: Works and thought of Rabbi Judah Loew of Prague in ethics, philosophy and the Jewish Festivals, taken from one or more of the following books he authored: Gur Aryeh, Netzach Yisrael, Nesivos Olam, Tifereth Yisrael, Gevuros Hashem, Ner Mitzvah, Or Chadash, Derech Chaim, and Be'er HaGolah.

P08	R' M. LUZZATO'S PHILOSOPHY	1 CREDIT

Description: The first section of Moshe Chaim Luzzato's classic work on Jewish philosophy

P08B	R' M. LUZZATO'S PHILOSOPHY 2	1 CREDIT

Description: The final section of Moshe Chaim Luzzato's classic work on Jewish philosophy

P09	R' C. VOLOZHINER'S PHILOSOPHY	1 CREDIT
P09A	R' C. VOLOZHINER'S PHILOSOPHY 1	1 CREDIT
P09B	R' C. VOLOZHINER'S PHILOSOPHY 2	1 CREDIT

Description: The classic philosophical and Kabbalistic work authored by Rabbi Chaim Volozhiner.

P10	R' KARELITZ'S "FAITH AND TRUST"	1 CREDIT

Description: This course focuses on the power of imagination and integrating with reality, conflict of interest, and general personal development, using the text Emunah Ubitochon by Rabbi A. Y. Karelitz.

P12	YESODOS NEEMONIM	1 CREDIT

Description: This course explores the conceptual ideas behind reconciling remedies and measurements from Talmudic times with current formulae and standards based on the work Yesodos Neemonim, culled anonymously from various Talmudic and contemporary sources.

P14	ANGER AND ITS ROOTS	1 CREDIT

Description: A book of ethics by Rabbi Abraham Yellin of Wengrov. The ignobility of anger and superiority of patience. Presenting an appearance of anger for a noble cause, but avoiding anger itself. Circumstances when appearing angry is appropriate. Breaking the habit of anger. Strategies for silence and use of a soft tone. Strategies for avoidance of true anger for someone who presents an appearance of anger for a noble reason. The prohibition for someone who becomes angry habitually to even appear angry under all circumstances. Methods for conquering anger and for correcting all bad habits. Valuable methods for transforming anger.

P15	R' DESSLER'S MUSSAR APPROACH	1 CREDIT

Description: This course explores ethics, philosophy, and advanced self-development based upon this classic text compiled from the lectures of Rabbi Eliyahu Eliezer Dessler, one of the 20th Century's most profound Jewish thinkers.

P16	R' SIMCHA ZISSEL'S MUSSAR	1 CREDIT

Description: This course explores human behavior, self-development and ethics based upon the Kelm philosophy as explicated in the work by Rabbi Simcha Zissel Ziv of Kelm, founder of that school of thought.

SUPPLEMENTAL COURSES

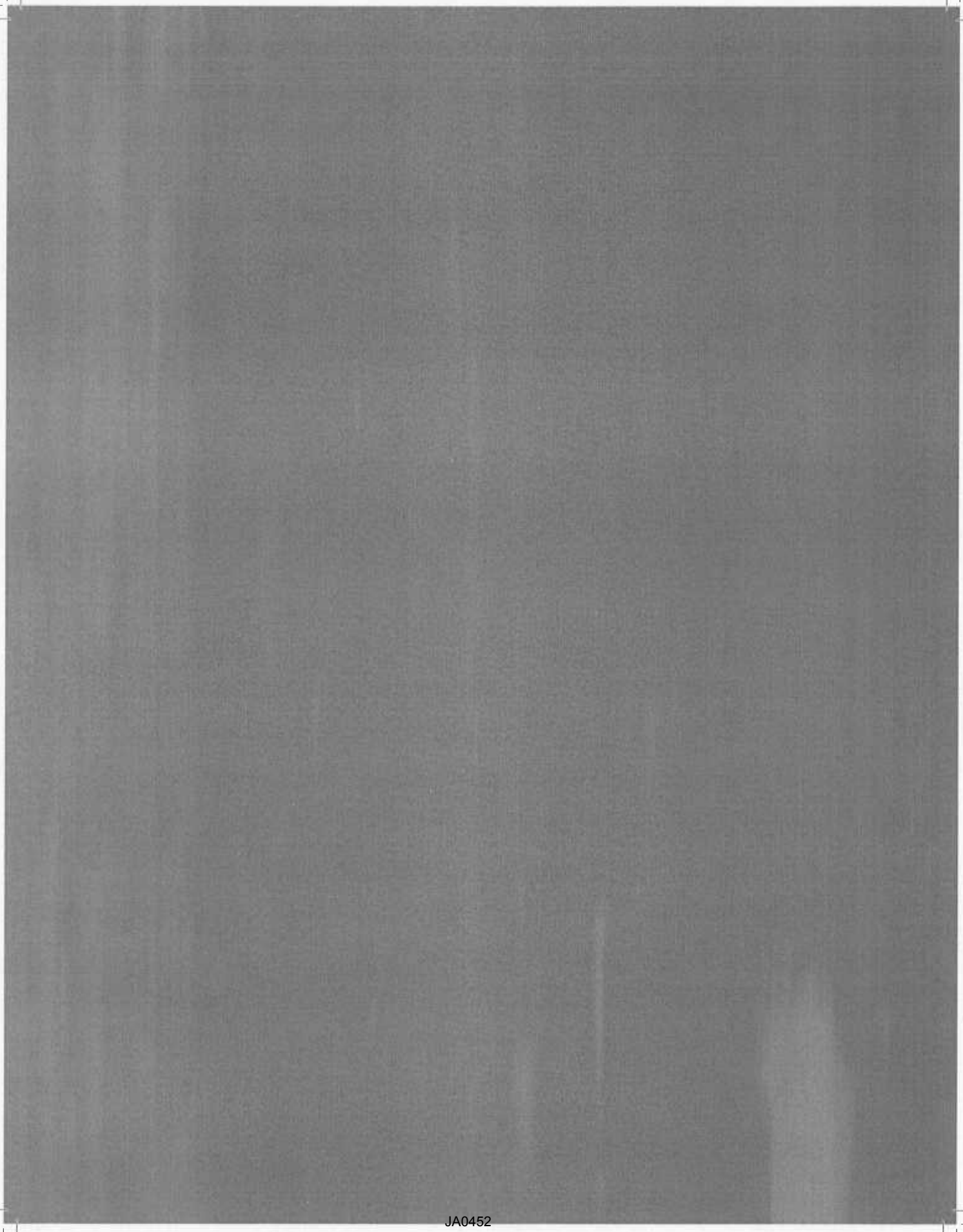
11I.1	Brachos 9	6 credits	Corequisite: 114, Laws of Blessings
12A.1	Pe'ah 1	6 credits	Corequisite: 7.2, Maimonides- Laws of Charity
16A.1	Trumos 1	6 credits	Corequisite: 7.3, Laws of Terumah
16C.1	Trumos 3	6 credits	Corequisite: 7.3, Laws of Terumah
19A.1	Urlah - Bekurim 1	6 credits	Corequisite: 7.6, Maimonides- Kohanim's Portions
19C.1	Urlah - Bekurim 3	6 credits	Corequisite: 7.6, Maimonides- Kohanim's Portions
25H.1	Yoma 8	6 credits	Corequisite: 8.8B, Maimonides-Yom Kippur Rituals
31D.1	Yevamos 4	6 credits	Corequisite: 307, Laws of Childless Widows
31F.1	Yevamos 6	6 credits	Corequisite: 307, Laws of Childless Widows
31J.1	Yevamos 10	6 credits	Corequisite: 307, Laws Of Childless Widows
32K.1	Ksubos 11	6 credits	Corequisite: 304, Marriage Contracts
32L.1	Ksubos 12	6 credits	Corequisite: 4.1A, Maimonides- Marital Law 1
33D.1	Nedarim 4	6 credits	Corequisite: 225, Laws of Obligations
33I.1	Nedarim 9	6 credits	Corequisite: 6.2, Maimonides- Laws of Obligations
33J.1	Nedarim 10	6 credits	Corequisite: 225, Laws of Obligations
33K.1	Nedarim 11	6 credits	Corequisite: 225, Laws of Obligations
34A.1	Nazir 1	6 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
34B.1	Nazir 2	6 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
34F.1	Nazir 6	6 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
35D.1	Sotah 4	6 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35F.1	Sotah 6	6 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35G.1	Sotah 7	6 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35I.1	Sotah 9	6 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
36D.1	Gitin 4	6 credits	Corequisite: 4.2B, Maimonides- Divorce Laws
36E.1	Gitin 5	6 credits	Corequisite: 305A, Divorce Proceedings
36F.1	Gitin 6	6 credits	Corequisite: 4.2B-J, Maimonides- Divorce Laws 2
36G.1	Gitin 7	6 credits	Corequisite: 4.2, Maimonides- Divorce Laws
36H.1	Gitin 8	6 credits	Corequisite: 4.2A, Maimonides- Divorce Laws 1
36I.1	Gitin 9	6 credits	Corequisite: 4.2A, Maimonides- Divorce Laws 1
37F.1	Advanced Kidushin 2	6 credits	Corequisite: 4.1B, Maimonides- Marital Law 2
51M.1	Zevachim 13	6 credits	Corequisite: 8.7, Maimonides- Unfit Korbonos
54A.1	Erachin 1	6 credits	Corequisite: 6.4, Laws of Erachin
54D.1	Erachin 4	6 credits	Corequisite: 6.4, Laws of Erachin
55B.1	Temurah 2	6 credits	Corequisite: 9.6A, Maimonides- Laws of Exchanges 2
55D.1	Temurah 4	6 credits	Corequisite: 9.6D, Maimonides- Laws of Exchanges 4
56B.1	Kriesus 2	6 credits	Corequisite: 9.5, Maimonides- Templar Regulations
56F.1	Kriesus 6	6 credits	Corequisite: 9.5, Maimonides- Templar Regulations
57D.1	Meilah 4	6 credits	Corequisite: 8.9, Illegal Use-Temple Possessions
57E.1	Meilah 5	6 credits	Corequisite: 8.9, Illegal Use-Temple Possessions
57F.1	Meilah 6	6 credits	Corequisite: 8.9, Illegal Use-Temple Possessions
58C.1	Tomid 3	6 credits	Corequisite: 6.6, Maimonides- Laws of Tomid
59K.1	Chulin 11	6 credits	Corequisite: 7.6, Maimonides- Kohanim's Portions
63E.1	Aholos 5	6 credits	Corequisite: 10.5, Maimonides- Chief Impurities
67A.1	Machshirin 1	6 credits	Corequisite: 10.6, Laws of Impure Foods
11H.2	Brachos 8	4 credits	Corequisite: 114, Laws of Blessings
11I.2	Brachos 9	4 credits	Corequisite: 114, Laws of Blessings
13A.2	Demai 1	4 credits	Corequisite: 7.4, Levitical Tithes
15A.2	Shviis 1	4 credits	Corequisite: 7.71B, Maimonides- Laws of Sabbatical 2
15B.2	Shviis 2	4 credits	Corequisite: 7.7B, Maimonides- Laws of Sabbatical 2
16B.2	Trumos 2	4 credits	Corequisite: 7.3, Laws of Terumah
17A.2	Maasros 1	4 credits	Corequisite: 7.4, Levitical Tithes
17B.2	Maasros 2	4 credits	Corequisite: 7.4, Levitical Tithes
17D.2	Maasros 4	4 credits	Corequisite: 7.4, Levitical Tithes
18B.2	Challah 2	4 credits	Corequisite: 7.6, Maimonides- Kohanim's Portions
18C.2	Challah 3	4 credits	Corequisite: 242, Laws of Challah
18D.2	Challah 4	4 credits	Corequisite: 242, Laws of Challah
19A.2	Urlah - Bekurim 1	4 credits	Corequisite: 7.6, Maimonides- Kohanim's Portions
212B.2	Shkalim 2	4 credits	Corequisite: 3.8A, Maimonides- Laws of Shkalim 1
212C.2	Shkalim 3	4 credits	Corequisite: 3.8A, Maimonides- Laws of Shkalim 1
21S.2	Shabbos 19	4 credits	Corequisite: 123A, Sabbath Laws 1
21T.2	Shabbos 20	4 credits	Corequisite: 123A, Sabbath Laws 1
21U.2	Shabbos 21	4 credits	Corequisite: 123A, Sabbath Laws 1
21V.2	Shabbos 22	4 credits	Corequisite: 123A, Sabbath Laws 1

21W.2	Shabbos 23	4 credits	Corequisite: 123A, Sabbath Laws 1
21X.2	Shabbos 24	4 credits	Corequisite: 123A, Sabbath Laws 1
25A.2	Yoma 1	4 credits	Corequisite: 8.8A, Maimonides- Yom Kippur Rituals
25B.2	Yoma 2	4 credits	Corequisite: 3.3, Maimonides- Laws of the Day of Atonement
25C.2	Yoma 3	4 credits	Corequisite: 8.8A, Maimonides- Yom Kippur Rituals
25D.2	Yoma 4	4 credits	Corequisite: 8.8A, Maimonides- Yom Kippur Rituals
25E.2	Yoma 5	4 credits	Corequisite: 8.8B, Maimonides-Yom Kippur Rituals
25F.2	Yoma 6	4 credits	Corequisite: 8.8B, Maimonides-Yom Kippur Rituals
25G.2	Yoma 7	4 credits	Corequisite: 8.8B, Maimonides-Yom Kippur Rituals
25H.2	Yoma 8	4 credits	Corequisite: 8.8B, Maimonides-Yom Kippur Rituals
26A.2	Sukkah 1	4 credits	Corequisite: 137, Laws of Sukkah
28C.2	Taanis 3	4 credits	Corequisite: 133, Laws of Taanis
28D.2	Taanis 4	4 credits	Corequisite: 3.10, Maimonides- Laws of Taanis
31D.2	Yevamos 4	4 credits	Corequisite: 307, Laws of Childless Widows
31F.2	Yevamos 6	4 credits	Corequisite: 307, Laws of Childless Widows
31H.2	Yevamos 8	4 credits	Corequisite: 307, Laws of Childless Widows
31M.2	Yevamos 13	4 credits	Corequisite: 307, Laws Of Childless Widows
32J.2	Ksubos 10	4 credits	Corequisite: 4.1A, Maimonides- Marital Law 1
32K.2	Ksubos 11	4 credits	Corequisite: 304, Marriage Contracts
32M.2	Ksubos 13	4 credits	Corequisite: 4.1A, Maimonides- Marital Law 1
33D.2	Nedarim 4	4 credits	Corequisite: 225, Laws of Obligations
33E.2	Nedarim 5	4 credits	Corequisite: 225, Laws of Obligations
33F.2	Nedarim 6	4 credits	Corequisite: 6.2, Maimonides- Laws of Obligations
33I.2	Nedarim 9	4 credits	Corequisite: 6.2, Maimonides- Laws of Obligations
33J.2	Nedarim 10	4 credits	Corequisite: 225, Laws of Obligations
33K.2	Nedarim 11	4 credits	Corequisite: 225, Laws of Obligations
34A.2	Nazir 1	4 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
34C.2	Nazir 3	4 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
34D.2	Nazir 4	4 credits	Corequisite: 6.3A, Maimonides- Nazirite Regulations 1
35D.2	Sotah 4	4 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35F.2	Sotah 6	4 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35G.2	Sotah 7	4 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
35H.2	Sotah 8	4 credits	Corequisite: 4.5, Maimonides- Laws of Sotah
36D.2	Gitin 4	4 credits	Corequisite: 4.2B, Maimonides- Divorce Laws
36E.2	Gitin 5	4 credits	Corequisite: 305A, Divorce Proceedings
36F.2	Gitin 6	4 credits	Corequisite: 4.2B-J, Maimonides- Divorce Laws 2
36G.2	Gitin 7	4 credits	Corequisite: 4.2, Maimonides- Divorce Laws
36H.2	Gitin 8	4 credits	Corequisite: 4.2A, Maimonides- Divorce Laws 1
36I.2	Gitin 9	4 credits	Corequisite: 4.2A, Maimonides- Divorce Laws 1
37F.2	Advanced Kidushin 2	4 credits	Corequisite: 4.1B, Maimonides- Marital Law 2
45C.2	Makos 3	4 credits	Corequisite: 248, Laws of Mourning
49A.2	Horiyos 1	4 credits	Corequisite: 14.3, Laws Governing Transgressors
51E.2	Zevachim 5	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51E.2	Zevachim 5	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51F.2	Zevachim 6	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51F.2	Zevachim 6	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51G.2	Zevachim 7	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51G.2	Zevachim 7	4 credits	Corequisite: 8.3B, Maimonides- Entering The Temple 2
51H.2	Zevachim 8	4 credits	Corequisite: 8.7, Maimonides- Unfit Korbonos
51H.2	Zevachim 8	4 credits	Corequisite: 8.7, Maimonides- Unfit Korbonos
51I.2	Zevachim 9	4 credits	Corequisite: 8.7, Maimonides- Unfit Korbonos
52D.2	Menachos 4	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52D.2	Menachos 4	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52E.2	Menachos 5	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52E.2	Menachos 5	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52F.2	Menachos 6	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52F.2	Menachos 6	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52G.2	Menachos 7	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52H.2	Menachos 8	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
52I.2	Menachos 9	4 credits	Corequisite: 8.2B, Maimonides- Vessels of Temple 2
54A.2	Erachin 1	4 credits	Corequisite: 6.4, Laws of Erachin
54G.2	Erachin 7	4 credits	Corequisite: 6.4, Laws of Erachin
54I.2	Erachin 9	4 credits	Corequisite: 6.4, Laws of Erachin
56A.2	Kriesus 1	4 credits	Corequisite: Maimonides-Templar Regulations
57C.2	Meilah 3	4 credits	Corequisite: 8.9, Illegal Use-Temple Possessions
59L.2	Chulin 12	4 credits	Corequisite: 208, Dietary Laws 1
63A.2	Aholos 1	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
63A.2	Aholos 1	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
63B.2	Aholos 2	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities

63B.2	Aholos 2	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
63C.2	Aholos 3	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
63C.2	Aholos 3	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
63E.2	Aholos 5	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
64A.2	Negaim 1	4 credits	Corequisite: 10.3A, Laws Pertaining To Negaim 1
65A or 916A.2	Taharos 1	4 credits	Corequisite: 10.5, Maimonides-Chief Impurities
65B or 916B.2	Taharos 2	4 credits	Corequisite: 10.5, Maimonides-Chief Impurities
65C.2	Taharos 3	4 credits	Corequisite: 10.5, Maimonides- Chief Impurities
67A.2	Machshirin 1	4 credits	Corequisite: 10.6, Laws of Impure Foods
67B.2	Machshirin 2	4 credits	Corequisite: 67B-J, Maimonides - Forbidden Foods 1
11A.3	Brachos 1	2 credits	
11B.3	Brachos 2	2 credits	
11D.3	Brachos 4	2 credits	
18A.3	Challah 1	2 credits	
18B.3	Challah 2	2 credits	
210B.3	Moed Koton 2	2 credits	
210C.3	Moed Koton 3	2 credits	
211A.3	Megillah 1	2 credits	
211B.3	Megillah 2	2 credits	
21B.3	Shabbos 2	2 credits	
21C.3	Shabbos 3	2 credits	
21E.3	Shabbos 5	2 credits	
21F.3	Shabbos 6	2 credits	
21R.3	Shabbos 18	2 credits	
22E.3	Eruvin 5	2 credits	
22F.3	Eruvin 6	2 credits	
23A.3	Pesachim 1	2 credits	
23E.3	Pesachim 5	2 credits	
25A.3	Yoma 1	2 credits	
25B.3	Yoma 2	2 credits	
26A.3	Sukkah 1	2 credits	
26B.3	Sukkah 2	2 credits	
26C.3	Sukkah 3	2 credits	
27A.3	Beitzah 1	2 credits	
28A.3	Taanis 1	2 credits	
29A.3	Chagigah 1	2 credits	
31A.3	Yevamos 1	2 credits	
32A.3	Ksubos 1	2 credits	
32B.3	Ksubos 2	2 credits	
32C.3	Ksubos 3	2 credits	
33A.3	Nedarim 1	2 credits	
33B.3	Nedarim 2	2 credits	
34A.3	Nazir 1	2 credits	
34A.3	Nazir 1	2 credits	
35A.3	Sotah 1	2 credits	
35B.3	Sotah 2	2 credits	
36A.3	Gitin 1	2 credits	
36B.3	Gitin 2	2 credits	
36C.3	Gitin 3	2 credits	
37B.3	Kidushin 2	2 credits	
37F.3	Advanced Kidushin 2	2 credits	
41B.3	Bava Kama 2	2 credits	
41E.3	Bava Kama 5	2 credits	
41G.3	Bava Kama 7	2 credits	
41H.3	Bava Kama 8	2 credits	
42A.3	Bava Metziah 1	2 credits	
42G.3	Bava Metziah 7	2 credits	
43A.3	Bava Basra 1	2 credits	
43B.3	Bava Basra 2	2 credits	
43D.3	Bava Basra 4	2 credits	
43J.3	Bava Basra 10	2 credits	
44A.3	Sanhedrin 1	2 credits	
45A.3	Makos 1	2 credits	
47A.3	Avodah Zarah 1	2 credits	
47B.3	Avodah Zarah 2	2 credits	
47C.3	Avodah Zarah 3	2 credits	
51C.3	Zevachim 3	2 credits	
51G.3	Zevachim 7	2 credits	
52C.3	Menachos 3	2 credits	

52E.3	Menachos 5	2 credits
52G.3	Menachos 1	2 credits
53A.3	Bchoros 1	2 credits
53B.3	Bchoros 2	2 credits
53C.3	Bchoros 3	2 credits
59B.3	Chulin 2	2 credits
59C.3	Chulin 3	2 credits
59D.3	Chulin 4	2 credits
59F.3	Chulin 6	2 credits
59G.3	Chulin 7	2 credits
59H.3	Chulin 8	2 credits
59I.3	Chulin 9	2 credits
61A.3	Niddah 1	2 credits
61C.3	Niddah 3	2 credits
61D.3	Niddah 4	2 credits
61H.3	Niddah 8	2 credits
63E.3	Aholos 5	2 credits
65A or 916A.3	Taharos 1	2 credits
65A.3	Taharos 1	2 credits
66A.3	Mikvaos 1	2 credits
66C.3	Mikvaos 3	2 credits
P01	Emunas V'dayos	1 credit
P03	Guide To The Perplexed	1 credit
P08A	R' M. Luzzato's Philosophy 1	1 credit
P13	Kuzari	1 credit
P18	Tomer Devorah	1 credit
RG01A	Graduate Research	3 credits
H31A	Introduction to Classical Hebrew Writing	4 credits
330A	Medieval Hebrew Commentaries	4 credits
438A	Post-Medieval Hebrew Texts	4 credits
438B	Contemporary Hebrew Texts	4 credits
530A	Major Hebrew Works on Halacha	4 credits
530B	Supervised Independent Study and Research	2 credits

Explanatory Note: Please note that course coding for graduate level courses at Beth Medrash Govoha include a two-digit prefix indicating the grade level of the student taking the courses indicated.



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APPENDIX A

REVISED COVER PAGE

Name of Institution: Princeton Theological Seminary

Project Name: Enhanced IT Infrastructure for Renovated Luce Library

Total Project Cost: $483,444.38

Address: 64 Mercer Street, P.O. Box 821

Princeton, New Jersey 08540-0803

Contact Person: Mr. Adrian Backus

Title: Vice President for Information Technology

Signature: Adrian Backus

Telephone: (609) 497-7837

Fax: (609) 524-6020

E-mail: adrian.backus@ptsem.edu

Included herein is an Application for a Project that seeks funding from the following grant programs in the amounts indicated below:

Carol g

$ $241,722.19 Higher Education Technology Infrastructure Fund

$ $241,722.19 TOTAL AMOUNT OF GRANT REQUESTED FOR PROJECT

Dr. Iain R. Torrance, President
PRINCETON THEOLOGICAL SEMINARY
Application # 038-01

'19 MAR 11 AM 11:19:38

APPENDIX B

REVISED CHECKLIST

All Programs:	Bond Act	CIF	HEFT	HETI	ELF
Cover Page					
Checklist (Appendix B)				✓	
4 Page Summary				✓	
Institution Resolution				✓	
Project Description				✓	
Programs to be served				✓	
Q&A Documentation Cert				✓	
Addenda Cert				✓	
Program Specific:				✓	
Construction Ready					
Cost Effective (Different for each Program)				N/A	N/A
Long Range Facilities Plan				✓	
Long Range Technology Plan	N/A	N/A	N/A	N/A	N/A
State funded facilities & maintenance				✓	N/A
Narrative re: Selection Criteria (different for each program)				N/A	N/A
Source of Matching Funds				✓	
Source of Debt Service Match	N/A	N/A	N/A	✓	N/A
Reimbursement			N/A	N/A	
How addressed needs of LRP, increases capacity & direct benefit to students		N/A	N/A	N/A	N/A
Description of renewal & renovation & how advances LRP	N/A		N/A	N/A	N/A
If support facilities, demonstrate no more than 20%	N/A		N/A	N/A	N/A
If not renewal & renovation, evidence of 7.4.2 (9) (a), (b) or (c)	N/A		N/A	N/A	N/A
Schedule for acquisition of equipment	N/A	N/A	N/A	✓	
How enhances interinstitutional interconnectivity (part of 7.6.2(3))	N/A	N/A	N/A	✓	N/A
How advances to next level of technology integration	N/A	N/A	N/A	✓	N/A
How Compatible with State Technology Plan	N/A	N/A	N/A	✓	N/A
How relates to mission & plan	N/A	N/A	N/A	N/A	
Process to generate application	N/A	N/A	N/A	N/A	
Description of Equipment Purchase	N/A	N/A	N/A	N/A	
Program Specific Certifications:					
Certificate C		N/A	N/A	N/A	N/A
Certificate D	N/A		N/A	N/A	N/A
Certificate E	N/A	N/A		N/A	N/A
Certificate F	N/A	N/A	N/A	✓	N/A
Certificate G	N/A	N/A	N/A	N/A	

Introduction

Princeton Theological Seminary is a denominational school offering ecumenical and interdenominational graduate theological education. Founded by the Presbyterian Church over 200 years ago in Princeton, New Jersey, the Seminary educates men and women of the State of New Jersey for traditional church leadership and, increasingly, for employment in many professional, humanitarian and corporate endeavors to which they bring the added dimension of faith. New Jersey students comprise approximately 15% of the institutions enrollment in any given year. The Seminary also attracts students to its campus from all parts of the United States and has a worldwide constituency, as well. In academic year 2012-13, 42 states are represented on campus, as well as 19 foreign countries, the Commonwealth of Puerto Rico and the U.S. Territory of Guam. There are currently more than 500 students enrolled in six degree programs.

5.1 Eligibility

5.1.A Eligibility

The Institution: Princeton Theological Seminary is a private nonprofit institution of higher education authorized to grant advanced academic degrees. The Seminary is accredited by the Association of Theological Schools (ATS) in the United States and Canada, as well as by the Middle States Commission on Higher Education (MSCHE), one of three accrediting Commissions of the Middle States Association of Colleges and Schools. The following degree programs are approved: Master of Arts (MA), Master of Divinity(MDiv), Master of Divinity/Master of Arts (MDiv/MA) Dual Degree program, Master of Arts - Theological Studies (MA(TS)), Master of Theology (ThM), and Doctor of Philosophy (PhD).

5.1.B Technology infrastructure

Building on its past investments in infrastructure, PTS is ready to move its converged network into its third generation. This is expected to support high definition video conferencing and telepresence, as well as facilitate access to volumes of digitized resources including books, video, and audio. This infrastructure is expected to remain compatible with other intrainstitutional systems, and continue to be compatible with inter-institutional communication, with the resources available for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

5.1.C. Advancing the Institution:

In 2001, Princeton Theological Seminary was one of the first academic institutions of higher education in the country to adopt a converged technology solution to integrate video, voice and data. The Seminary has over a decade of experience in leveraging integrated technology. Through this grant, the Seminary will be able to advance its digital "reach" to the next level, able to offer its unparalleled resources for historical and theological research and reference to a vastly broader community without constraint of time or place and across the widest range of technological devices. The project includes content creation for digital access, an upgrade of the underlying communications infrastructure, provision of a redundant, diverse-pathway fiber backbone to the network, and extension of the reach of the fiber optic network, accomplished with economy and efficiency by running it along with the redundant backbone fiber. These enhancements will provide a synergy, allowing the Seminary to move to the next level of utilization of its converged network.

5.1.D. Inter-Institutional Connectivity:

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions. The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey**.

The scope of technological advances proposed in this application will result in the enhancement of Open Educational Resources (OER) for scholarly collaboration and support services for educators and researchers. These advances will connect infrastructure for intra- and inter-institutional repositories, not only among the reciprocal institutions but for free access by all educators and students in New Jersey who may "visit" the Seminary library electronically.

The Seminary's mission is the preparation of men and women for theological leadership; however, the Seminary is also in service to educators, students and lay people throughout the State, the nation, and globally. Its resources are accessed in support of congregations of all denominations and faiths and as resources for the study of history and the demographic movements of populations throughout history. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission.

5.1.E. Compatibility with Technological Infrastructure for New Jersey Higher Education:

This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

5.1.F. Training, Staffing, other Indirect Costs Related to the Project:

Expenses have been calculated over the expected five-year life of the Project, considering equipment acquisition, installation services, ongoing maintenance, and operating expenses. No expense is anticipated for training. Please see 7.2.1.5(C): Budget for Project Lifespan.

5.1.G. Matching Funds Commitment Equal to the Amount of the Grant:

Matching funds equal to the amount of the grant will be provided through Seminary resources.

5.1.H. Resolution of the Board of Trustees to Maintain the Funded Project:

The Board of Trustees of Princeton Theological Seminary has resolved to maintain the funded Project. Please see attached Resolution, executed on March 8, 2013.

7.2 GRANT APPLICATION REQUIREMENTS FOR ALL PROGRAMS

7.2.1.1

See Cover Page

7.2.1.2

See Appendix B for completed checklist

7.2.1.3 Summary

Princeton Theological Seminary, hereinafter referred to also as PTS, seeks to enhance, upgrade or replace portions of the current networking and telecommunications infrastructure. Focused on our world-class research library, this project is necessary to meet the growing demands for electronic and interactive access to the Seminary's various rich academic and research resources. Academic materials including but not limited to scholarly publications, course syllabi and materials, and on-campus lectures are highly sought after by those outside the institution and improving the infrastructure creates the foundation necessary to make PTS materials more accessible to others. By identifying materials appropriate to release and securing necessary copyright permissions when required, PTS will create an academic repository to expand scholarly communications as well as make scholarly material open to interested parties outside the Seminary. Infrastructure enhancements will allow for improved and increased storage capacity, consistency across campus, and create the foundation necessary for longer term campus projects such as an academic repository containing traditional print material in a digital format, course materials, and videos of on-campus lectures.

The project is comprised of six components that will elevate Princeton Seminary's third generation converged voice, video and data technologies into the twenty-first century. The Seminary is primed to renovate Luce Library in order to integrate it with the Seminary's new library, which is set to open May 2013. The structure that was Luce Library will be fully integrated with the completed new library to become the north wing focusing as a digital enterprise learning and research center where research, publication, teaching and learning will benefit from a revamped infrastructure, most notably scholarly collaboration. The first two components are internal and external cabling necessary to upgrade the current infrastructure,

7.2.1.3 Summary (continued)

prepare for future growth and expansion, and provide redundancy to the existing fiber plant to support additional video and lecture capture projects. Component three includes Power over Ethernet (PoE) and non-PoE 10/100/1000 switches to provide connectivity to all data, wireless, phone and audio/visual equipment. Component four includes Voice over Internet Protocol (VoIP) phones needed to connect to the existing phone system, which will provide visual connections and allow for support calls and training to be conducted utilizing the desk phones. Component five upgrades the existing call manager servers as the current ones are scheduled to be end-of-support in 2014. Component six focuses on the library storage and transitions the Seminary to an on-site storage system, which eliminates the monthly charges for off-site hosting services and will provide 200 terabytes of data storage.

The combination of these critical components will significantly impact the style in which the Seminary conducts business, expand research opportunities, increase access to resources and further the Seminary as a leader in theological education. Quite simply, this infrastructure enhancement has tremendous benefits for all who study and work at Princeton Seminary in addition to those who wish to access it contents. By strengthening our converged technologies, the Seminary is better able to fulfill its core mission, focusing on teaching, learning and research and carrying out key aspects of its strategic plan by leveraging technology to better engage and enhance our institutional partnerships.

Princeton Seminary is primed to complete the second phase of its library project as the new library building is scheduled to open May 2013, at which point the Seminary will transition to phase three that will renovate the current Luce Library building and integrate its use into the

7.2.1.3 Summary (continued)

new library for maximum operational efficiency. The Seminary has already committed to evolve technologically by constructing a new data center, preparing the upcoming IEEE 802.11ac wireless standards, and adaptively planning to incorporate future technologies. Building on its past success of moving to VoIP, which saw cost savings eight years after implementation, the Seminary is committed to furthering its infrastructure to take advantage of future cost savings and benefit from converged technologies. Below is a summary of project funding:

Summary of Project Funding by Program

Project Capital Costs	Internally Funded	HETI Funding Request
$ 484,444.38	$ 241,722.19	$ 241,722.19

7.2.1.4: Resolution of the Board of Trustees of Princeton Theological Seminary

See attached.

Princeton Theological Seminary Resolution
NJEFA Capital Facilities Programs

Resolution approving and authorizing the undertaking and implementation of a project consisting of (a) Enhanced IT Infrastructure for Renovated Luce Library, (b) Learning Spaces: Time Presence Place Room, and (c) Revamped Cooper Conference Room and authorizing the financing of all or a portion of the project through program(s) made available by the State of New Jersey for New Jersey institutions of higher education and other available funding sources; approving and authorizing the form of the application to the Secretary of Higher Education for participation in such program(s) as are applicable to the projects with such changes as are approved by the Officers of Princeton Theological Seminary designated herein and the submission of the application to the Secretary of Higher Education: approving and authorizing the execution and delivery of any and all agreements in connection with undertaking, implementing and financing the projects in the form(s) approved by the officers of the institution executing such agreement(s); and designating and authorizing the officers of the institution to take the aforementioned actions and to take any and all such other actions deemed necessary or desirable to undertake, implement and finance the project(s).

WHEREAS: The Board of Trustees (the "Board") of Princeton Theological Seminary (the "Institution") desires to approve the undertaking, implementation and financing of a project (the "Project") consisting of (a) Enhanced IT Infrastructure for Renovated Luce Library, (b) Learning Spaces: Time Presence Place Room, and (c) Revamped Cooper Conference Room; (see Project Summaries attached) and

WHEREAS: The Board desires to approve the aggregate costs of the Project paid and or financed through all sources in an amount not to exceed $1.3 million; and

WHEREAS: The Board desires to finance all or a portion of the Project through one of more of the hereinafter defined Programs made available by the State of New Jersey (the "State") for certain projects of New Jersey institutions of higher education (the "Programs"); and

WHEREAS: The Programs are the Building our Future Bond Act, (P.L. 2012, c.41 (the "GO Bond Act"): the Higher Education Capital Improvement Fund Act, N.J.S.A. 18A:72A-72 et seq. ("CIF"); the Higher Education Equipment Leasing Fund Act, N.J.S.A.18A: 72A-40 et seq. ("ELF"); the Higher Education Technology Infrastructure Fund Act, N.J.S.A.18A:72A-59 et seq. ("HETI"); and the Higher Education Facilities Trust Fund Act, N.J>S.A.18A:72A-49 et seq. ("HEFT"); and

WHEREAS: The Board has determined that the Project will assist in serving the needs of its students and providing a benefit to the Institution; and

WHEREAS: The Board desires to approve financing of all or portions of the Project through [the GO Bond Act, CIF< ELF, HETI, and/or HEFT]; and

WHEREAS: Portion(s) of the Project may also be financed by bonds issued by the New Jersey Educational Facilities Authority which bear tax-exempt interest for federal income tax purposes ("Tax-Exempt Bonds"), commercial loans or funds otherwise available to the Institution; and

WHEREAS: In order to provide maximum flexibility and most efficient borrowing costs, the Board wishes to authorize financing the Project through [insert Programs for which applying] (the "Proposed Programs"), issuance of Tax-Exempt Bonds, commercial loans and funds otherwise available to the Institution or any combination thereof (the "Financing Structure"); and

WHEREAS: The Board wishes to approve the form of the Application to be submitted to the Secretary of Higher Education (the "Secretary") for the Proposed Programs for the Project, and to designate and authorize officers of the Institution to take necessary and desirable actions to undertake, implement and submit to the Secretary the Application for the Project; and

WHEREAS: The Board hereby approves the Long Range Technology Plan of the Institution in the form attached hereto as PTS Appendix B and authorizes and directs the officers designated in this resolution to include the Long Range Capital Plan in the Application(s) approved herein; and

WHEREAS: The Board desires to authorize certain officers of the Institution to determine the Financing Structure which is most economically advantageous to the Institution provided the Financing Structure includes utilization of the Proposed Programs, and take all action necessary or beneficial to accomplish the financing of the Project including the financing of capitalized interest, if any, and other costs of issuing any debt including, Tax-Exempt Bonds or other financings ("Financing Costs"); and

WHEREAS: The Board reasonably expects to reimburse expenditures for costs of the Project paid prior to issuance of Tax-Exempt Bonds or any debt bearing interest which is exempt from gross income for federal income tax purposes which will fund an applicable Project and/or Program;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF PRINCETON THEOLOGICAL SEMINARY AS FOLLOWS:

SECTION 1. The Board approves the Project and authorizes the undertaking, implementation and financing of the Project in a maximum aggregate amount not to exceed $1.3 million (including Financing Costs). [The Board approves the Long Range Technology Plan of the Institution in the form attached hereto as PTS Appendix B].

SECTION 2. The Board approves the financing of all or any portion of the Project through the Higher Education Technology Fund. The Board approves the Application for funding of the Project through such Program[s] in the form submitted to the Board and authorizes and directs the herein defined Designated Officers to submit such Application to the Secretary with such changes, modifications and additions as are approved by the Designated Officers and such changes, modifications and additions shall be conclusively evidenced by the submission of the Application to the Secretary. The Board expressly directs and authorizes the Designated Officers to submit the Long Range Technology Plan in the Application for any Program for which it is required. The Board acknowledges and agrees that approval of the Application and receipt of funds pursuant to the Program(s) will obligate the Institution to: (a) provide funds for the operation and maintenance of the Project, (b) contribute to the cost of the Project; (c) pay all or a portion of debt service on Tax-Exempt Bonds issued to fund the Proposed Program(s) as applicable; and (d) fulfill other conditions imposed under the Program(s) and hereby directs and authorizes the Designated Officers to certify such acknowledgement and agreement as part of the submitted Application. The Designated Officers are hereby authorized and directed to fulfill all conditions of the Proposed Program(s) including without limitation providing for the operation and maintenance of the Project and using available funds of the Institution to pay for such operation and maintenance and to satisfy conditions of the Proposed Program(s) to contribute to the cost of Projects and/or debt service on Tax-Exempt Bonds issued to fund the Proposed Program(s) from available funds of the Institution.

SECTION 3. The Board further approves the financing of all or any portion of the Project with Tax-Exempt Bonds, commercial loans and other funds available to the Institution and through the Financing Structure determined to be most economically advantageous to the Institution by the President and the Senior Vice President/Treasurer (the "Designated Officers"). The Designated Officers are expressly authorized and directed to determine such Financing Structure provided that the Financing Structure includes utilization of Programs which are approved by the Secretary for financing the Project.

SECTION 4. The Board Chairperson, the President, and the Senior Vice President/Treasurer (each an "Authorized Officer") are each hereby authorized and directed to approve, execute and deliver any and all agreements necessary to undertake, implement and finance the Project and any and all other financing documents and instruments in the form approved by the Authorized Officers executing the same in the name of and on behalf of

Princeton Theological Seminary, in as many counterparts as may be necessary, and to affix or impress the official seal of the Institution thereon and to attest the same and such execution and attestation will be conclusive evidence of the approval of the form and content of such agreements and other documents and instruments necessary to undertake, implement and finance the Project and to pay Financing Costs including through the financing thereof. The Authorized Officers are further authorized and directed to do and perform such other acts and to take such other actions as may be necessary or required, or which may be deemed to be appropriate to implement the purposes of this resolution to undertake, implement and finance the Project and Financing Costs and the payment and/or repayment thereof.

SECTION 5. This Resolution is a declaration of the official intent of the Institution that the Institution reasonably expects and intends to reimburse expenditures for costs of the Project[s] paid prior to issuance of Tax-Exempt Bonds or other tax-exempt debt issued to fund the Projects/Programs ["Applicable Tax-Exempt Debt"] in accordance with Treasury Regulation Section 1.150-2 and that the maximum principal amount of the Tax-Exempt Debt expected to be issued to finance costs of the Project [s] including amounts to be used to reimburse expenditures for such costs paid prior to the issuance of the such Tax-Exempt Debt is $0 (including Financing Costs).

SECTION 6. All resolutions, orders and other actions of the Board of the Institution in conflict with the provisions of this resolution to the extent of such conflict are hereby superseded, repealed or revoked.

SECTION 7. This Resolution shall take effect immediately; and be it further

RESOLVED: That no further approvals by the Board are necessary to implement this Resolution.

RESOLUTION ADOPTED: March 8, 2013

DULY CERTIFIED: _____

John Gilmore, Senior Vice President/Treasurer
March 8, 2013

Princeton Theological Seminary

Project Summaries

1. Enhanced IT infrastructure for a renovated Luce Library

   A. Project Summary

   PTS seeks to enhance its information technology infrastructure to increase access to its various content and enable that content to be available for public consumption. Academic materials including but not limited to scholarly publications, course syllabi and materials, and on-campus lectures are highly sought after by those outside the institution and improving the infrastructure creates the foundation necessary to make PTS materials more accessible to others. By identifying materials appropriate to release and securing necessary copyright permissions when required, PTS will create an academic repository to expand scholarly communications as well as make scholarly material open to interested parties outside the seminary. Infrastructure enhancements will allow for improved and increased storage capacity, consistency across campus, and create the foundation necessary for longer term campus projects such as an academic repository containing traditional print material in a digital format, course materials, and videos of on-campus lectures.

   As research in the humanities transitions into more digital formats, key components of the increased infrastructure, especially increased bandwidth and a new data center, allow for PTS to enter this field and continue as a leader in theological education and research by allowing for inter-institutional connections necessary for today's multidisciplinary approach.

2. Learning Spaces: Time Presence Place Room

   A. Project Summary

   Teaching, learning and research – the core of life at Princeton Theological Seminary – is radically being refashioned by information technology, and PTS continues to be a leader in theological education by integrating new and emerging technologies to enhance its primary endeavors. The Time Presence Place Room (TPP) expands the seminary's presence in the digital humanities by creating the environment necessary to create, display and utilize tools appropriate to the twenty-first century. PTS is already at work identifying current faculty projects that will benefit, both in research and presentation, from the TPP room and promote the joy of discovery and the fostering of curiosity.

One project is "the creation of an image-based, facsimile edition" of Aramaic papyri from Elephantine to create digital scholarly text edition.[1] This digital edition would both build upon the previous text critical edition that is approximately sixty years old and capitalize on available digital technology for "staging, viewing, and manipulating high-resolution digital images" in order "to become the premiere scholarly resource" for these papyri.[2]

Another project is based on the premise that to truly understand Biblical texts, the reader must also grasp the historical setting, an understanding that can now go beyond traditional text-historical criticism and include a first-person geographical perspective to enhance the particularity of textual characters – a particular time, a particular place, a particular person. The ultimate objective is "to revolutionize the visual display of the biblical world."[3] This project of course not restrictive to the biblical world but also encourages creative imagining of major events in history to better grasp the ever elusive issue of perspective.

The seminary has also initiated conversations with various institutions and centers to expand on ancient world mapping. To date, ancient maps are almost entirely two dimensional, and while they remain useful, the emergence of 3D mapping holds the potential to greater and more quickly understand geographical features crucial to gaining new insight on world events.

All of these projects are born in the academy but are designed to have life beyond the academy, too as their digital form and the promise of openness permits anyone anywhere to benefit. In addition, the rooms' specifications are unique to humanities and theological institutions making PTS an attractive destination for potential faculty, visiting scholars and students as well as set the stage for collaborative partnerships with institutions and scholars across the state, nation and globe.

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[1] Dobbs-Allsopp, Chip, BMAP Whitepaper.

[2] Dobbs-Allsopp

[3] Charlesworth, James.

3. Revamped Cooper Conference Room

A. Project Overview

The 70 year old ministry of continuing education at Princeton Theological Seminary was radically reformed and relaunched in January 2009 around a singular purpose: Continued Formation and Renewal of Church Leaders and the Uplift of Congregations. Not only was this a return to the historic mission of continuing education at PTS, but it was also a clear and faithful response to fundamental needs in the church today (confirmed by State and denominational leaders and addressed in the Bicentennial Strategic Plan of the Seminary). The critical change over these seven decades has been the increasing inability of church leaders – even those who live in the State of New Jersey - to spend significant time on campus in pursuit of continuing education. What then is the efficacy of a mission of "continuing formation" if one cannot count on the physical presence of the leaders we are charged with assisting? The answer, in large part, is the use of rapidly changing and enabling technology to provide content **and** connection to our constituents *where they live and work.*

We have been helped in the discernment process of the last four years by the significant, legacy investment in broadcast technology (installed eight years ago) in the Cooper Conference Room of the Erdman Center and by continued engagement with thought leaders at institutions such as the Lilly Endowment who have encouraged us to be ever more imaginative and risk taking in the use of technology to follow the trajectory articulated the previous paragraph. We have, over these four years, moved from recording programs in Cooper for posting on our social media platform (Called to Community); to the (static) live broadcast of lectures in Cooper to a broad, off-campus audience; to highly interactive webinars broadcast synchronously and directly into church halls and the production of totally on-line, multi-lecture courses that utilize up to date pedagogy. The results, while only a first level of the potential that exists, have been significant. Over a 12 month period, our short (approximately one hour) Princeton Monthly Conversations reached 2000 computers in 49 states and over 140 countries. The current Lilly Endowment supported programs of webinars attracted over 50 congregations in 19 states, Canada and Hong Kong for live Sunday night broadcasts and the set of six on-line courses (taught by our most senior PTS faculty) have attracted 160 participants working individually or at three satellite sites in 30 states. Finally, our certificate program in Youth and Theology (also supported by the Lilly Endowment) has demonstrated the efficaciousness of providing *connection* (between participants at work all across the State and the US) as well as *content* on-line.

It is important to emphasize that the challenge of accessibility is not restricted to church leaders who live and work outside the State of New Jersey. It is very much a factor for State residents. We have established continuing

education partnerships with the NJ Bishops of the Episcopal, Lutheran and Methodist denominations as well as their Presbyterian, UCC and Baptist counterparts. Our work together benefits the larger social footprints of these faith communities as we train in community development, non profit leadership, community organizing and the public roles of pastors. In addition, we have targeted programs specifically for African American and Hispanic constituencies in the State and, until the limitations of our broadcast equipment became an issue, had accumulated useful experience. Most recently, in the on-line course program we just initiated, the second largest satellite site – more than 20 local leaders – is at a predominately African-American church in Trenton, less than 10 miles from campus. The pastor tells us that he would not have been able to bring a group of lay leaders of this size this relatively short distance. The success of our ministry seems to be inexorably linked to our ability to reach leaders where they actually live and work, even within our own county in New Jersey.

The blessing of the Cooper infrastructure that the new ministry inherited in 2009 has long been surpassed by the demands of on-line pedagogy as well as its own life expectancy. We need to refresh the technology to enable us, first, to sustain the degree of connectivity we have achieved, and, second, to position the School of Christian Vocation and Mission to leverage the enabling technology that will support the rapidly emerging on-line pedagogy as we bring content and connectivity to faith communities across the State of New Jersey.

7.2.1.5 Detailed Description of the Project

Project Overview

The overall goal of this infrastructure project is to upgrade, enhance, or replace a portion of the current networking and telecommunications infrastructure at Princeton Seminary. Focused on our world-class research library, this infrastructure project is necessary to meet the growing demands for electronic and interactive access to the various rich academic and research resources at Princeton Seminary made by students, faculty, and the public, on campus, within New Jersey, and throughout the world.

This project has 6 major components:

1. Luce Internal Cabling
2. Outdoor Fiber Cabling
3. Luce Library Data Network
4. Cisco IP Phones
5. Cisco Call Manager Upgrade
6. Library Digitization and Storage

7.2.1.5.A Project Design Information

This project has 6 major components, with design information available in PTS Appendix A, as listed below.

1. Luce Internal Cabling
    a. EXHIBIT A Luce Library Electrical Design
    b. EXHIBIT E Luce Library internal cabling, itemized list
2. Outdoor Fiber Cabling
    a. EXHIBIT B Proposed Campus Fiber Upgrade Design

7.2.1.5.A Project Design Information (continued)

b. EXHIBIT C Present Fiber Plant Conditions

c. EXHIBIT F Itemized list of proposed fiber connections

3. Luce Library Data Network

a. EXHIBIT D Itemized Network Electronics

4. Cisco IP Phones

a. EXHIBIT G Itemized list of VoIP phones for Luce Library

5. Cisco Call Manager Upgrade

a. EXHIBIT H Itemized list of Call Manager Upgrades

6. Library Digitization and Storage

a. EXHIBIT I SAN Storage Design

b. EXHIBIT J Itemized list of SAN storage items

7.2.1.5.B. General Project Budget

The table below details the budget of each of the project components' development, construction, acquisition and installation.

Summary of Funding by Component

Component:		**Cost**		**HETI Funding Request**
Luce Internal Cabling	$	125,000.00	$	62,500.00
Outdoor Fiber Cabling	$	71,444.38	$	35,722.19
Luce Library Data Network	$	72,000.00	$	36,000.00
Cisco IP Phones	$	35,000.00	$	17,500.00
Cisco Call Manager Upgrade	$	60,000.00	$	30,000.00
Library Digitization and Storage	$	120,000.00	$	60,000.00
Total Capital Costs for all components:	$	**483,444.38**		
Total Funded by PTS capital budget:			$	**241,722.19**
Total Funding Request, HETI:			$	**241,722.19**

7.2.1.5.C Budget for Project Lifespan

Expenses have been calculated over the expected 5 year life of the project. Anticipated areas of expense include equipment acquisition, installation services, and ongoing maintenance and operating expenses. Some costs are one time up-front, and others are budgeted annually.

5 Year Project Budget Summary

Capital Expenses

		HETI Funding Request		PTS Capital Funded
Initial Purchase	$	241,722.19	$	241,722.19
Subtotal:	**$**	**241,722.19**	**$**	**241,722.19**

Ongoing Operating Expenses

		PTS Operating Budget		5 Year Total, PTS Operating Budget
Annual Maintenance Costs	$	25,000.00	$	125,000.00
Annual Operating Expenses	$	40,000.00	$	200,000.00
Subtotal:	**$**	**65,000.00**	**$**	**325,000.00**

Subtotal, HETI Funded:	**$**	**241,722.19**
Subtotal, PTS Capital Funded:	$	241,722.19
Subtotal, 5 Year PTS Operating Budget:	$	325,000.00
Project Total, 5 Years:	**$**	**808,444.38**

7.2.1.5.D Planned Project Lifespan

The overall lifespan of the project is expected to exceed 5 years, before new technologies are expected to make replacement more cost effective than continued maintenance. Several of the individual components have significantly longer expected useful lifespans, providing additional long-term value from this project:

7.2.1.5.D Planned Project Lifespan (continued)

Summary of Useful Lifespans

Component:	Expected Lifespan
1. Luce Internal Cabling	10+ Years
2. Outdoor Fiber Cabling	15+ Years
3. Luce Library Data Network	8 Years
4. Cisco IP Phones	8 Years
5. Cisco Call Manager Upgrade	5 years
6. Library Digitization and Storage	5 Years

7.2.1.6 Academic and/or Research Programs served by the Project; Enhancement of the Academic Capacity of the Institution

As research in the humanities transitions into more digital formats, key components of the increased infrastructure, especially increased bandwidth and a new energy-efficient data center that meets Telecommunications Industry Association (TIA) standards, allow for PTS to enter this field and continue as a leader in theological education and research by allowing for inter-institutional connections necessary for today's multidisciplinary approach. Academic materials including but not limited to scholarly publications, course syllabi and materials, and on-campus lectures are highly sought after by those outside the institution and improving the infrastructure creates the foundation necessary to make PTS materials more accessible to others. By identifying materials appropriate to release and securing necessary copyright permissions when required, PTS will create an academic repository to expand scholarly communications as well as make scholarly material open to interested parties outside the Seminary. Infrastructure enhancements will allow for improved and increased storage capacity, consistency across campus, and create the foundation necessary for longer term campus projects such as an

7.2.1.6 Academic and/or Research Programs (continued)

academic repository containing traditional print material in a digital format, course materials, and videos of on-campus lectures.

Such a project allows the Seminary to pursue faculty-proposed projects that seek to heighten access to scholars and the public. One project is "the creation of an image-based, facsimile edition" of Aramaic papyri from Elephantine to create a digital scholarly text edition.[1] This digital edition would both build upon the previous text critical edition that is approximately sixty years old and capitalize on available digital technology for "staging, viewing, and manipulating high-resolution digital images" in order "to become the premiere scholarly resource" for these papyri.[2]

Another project is based on the premise that to truly understand biblical texts, the reader must also grasp the historical setting, an understanding that can now go beyond traditional text-historical criticism and include a first-person geographical perspective to enhance the particularity of textual characters – a particular time, a particular place, a particular person. The ultimate objective is "to revolutionize the visual display of the biblical world."[3] This project is of course not restrictive to the biblical world but also encourages creative imagining of major events in history to better grasp the ever-elusive issue of perspective. Both projects would be led by top scholars in their respective fields and bring the research process into the public light by allowing all interested parties, such as faculty, students, researchers and the public at large, to engage, explore and inquire.

[1] Dobbs-Allsopp, Chip, *BMAP Whitepaper.*
[2] Dobbs-Allsopp
[3] Charlesworth, James

7.2.1.6 Academic and/or Research Programs (continued)

The implementation of this research project is not part of any current Seminary program but instead serves as the foundational path for future institutional scholarship. The Seminary's strategic plan, finalized and approved by the Board of Trustees in October 2012, directs the institution to become an "unparalleled resource: a center of scholarly excellence connecting, faculty, students, and researchers through innovative services and technologies."[4] The furthering of the Seminary's technical infrastructure is critical to carrying out this goal, as it is the key element in allowing such a bold endeavor to successfully take root. The project is also vital for the Seminary's PhD students, who provide important new research to the humanities. As faculty can benefit, so can tomorrow's scholars by allowing a wider variety of research opportunities consistent with technology's evolving landscape. No additional staff are needed to provide support.

7.2.1.7

See attached Certifications: Appendix H Question and Answer Documentation Certification and Appendix I Addenda Certification

7.6 GRANT APPLICATION REQUIREMENTS FOR HIGHER EDUCATION TECHNOLOGY INFRASTRUCTURE FUND GRANTS

[4] Princeton Theological Seminary Strategic Plan, Imperative 5
http://www.ptsem.edu/index.aspx?menu1_id=2030&menu2_id=2031&id=25769804258

7.6.1 Application must provide:

7.6.2.1 Schedule of Acquisitions and Project Completion

There are six components included in this project. The schedule of acquisition and completion for each component is as follows:

7.6.2.1 Schedule of Acquisitions and Project Completion (continued)

Component	Acquisition Schedule	Installation Schedule
Luce Internal Cabling	August 2013	September 2013
Campus Outdoor Fiber Cabling	June 2013	June 2013
Luce Library Data Network	September 2013	October 2013
Cisco IP Phones	September 2013	October 2013
Cisco Call Manager Upgrade	June 2013	July 2013
Library Storage Project	June 2013	December 2013

7.6.2.2 Cost Effectiveness

7.6.2.2.A Cost Data

Summary Pricing

Components:	Cost
Luce Internal Cabling:	$ 125,000.00
Outdoor Fiber Cabling	$ 71,444.38
Luce Library Data Network/Network Electronics	$ 72,000.00
Cisco IP Phones	$ 35,000.00
Cisco Call Manager Upgrade	$ 60,000.00
Library Storage Project	$ 120,000.00
Total Cost for all Components:	**$ 483,444.38**

Component 1: Luce Internal Cabling:

Princeton Theological Seminary is in the process of a major renovation project for Luce Library. As part of this renovation the data, wireless, voice and video infrastructure will need to be upgraded for future growth and expansion.

7.6.2.2.A Cost Data (continued)

The data requirements set forth below are based upon the plans received by the architect in September 2010. Although some locations for data connectivity may change, the overall data requirements will remain consistent and the pricing should not vary.

The Component consists of the following:

Wired Data Ports: 363
Wireless: 23
IP Phones: 53
Wall Mount Phones: 15
A/V Cabling Coax runs: 18
A/V Cabling Video Conferencing Rooms: 10

Total Cost for Building Infrastructure: $125,000.00

Component 2: Outdoor Redundant Fiber Cable

The following fiber cable runs will provide PTS with additional fiber infrastructure to support additional video connects and will provide redundancy to the existing fiber plant. The fiber cabling included in this proposal consists of:

- (24 strand single mode) From Scheide
- (24 strand single mode) From Miller
- (24 strand single mode) From Stuart
- (24 strand single mode) From Mackay
- (6 strand single mode) From Payne
- (6 strand single mode) From Brown
- (6 strand single mode) From Administration Bldg
- (6 strand single mode) From Alexander
- (6 strand single mode) From Hodge
- (6 strand single mode) Gym to Tennent
- (12 strand single mode) Sheide to Luce

7.6.2.2.A Cost Data (continued)

Materials

Item	Description	Quantity
1	96st Singlemode cable in/out plenum	700
2	72st Singlemode cable in/out plenum	600
3	48st Singlemode cable in/out plenum	400
4	24st Singlemode cable in/out plenum	900
5	12st Singlemode cable in/out plenum	800
6	6st Singlemode cable in/out plenum	1500
7	CCH-002 HOUSING	10
8	CCH SM BULKHEAD	28
4	SM UNICAM CONNECTORS	252
5	MISC HARDWARE & SLEEVE	1

Total Cost for Outdoor Fiber Infrastructure: $62,444.38

Component 3: Luce Library Renovations – Network Electronics

This Component includes all PoE and Non-PoE 10/100/1000 switches for the Luce Library to provide connectivity to all, data, wireless, phone and A/V equipment as part of the Library renovations:

Luce Network Electronics		
	Stack 1	
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1

7.6.2.2.A Cost Data (continued)

WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
SFP-10G-LRM	10GBASE-LRM SFP Module	2
CAB-STK-E-1M	Cisco FlexStack 1m stacking cable	1
21617	3m USA-Made 10 Gb LC/SC Duplex 50/125 Multimode Fiber Patch Cable - Aqua	2
	Stack 2	
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1

7.6.2.2.A Cost Data (continued)

WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
SFP-10G-LRM	10GBASE-LRM SFP Module	2
CAB-STK-E-1M	Cisco FlexStack 1m stacking cable	1
	IDF 2107	
SU3000RTXL2U	SmartOnline 3kVA On-Line Double-Conversion UPS, 2U Rack/Tower	2
PDU2430	Single-Phase Basic PDU, 30A 120V, 1U Horizontal Rackmount,	2
SNMPWEBCARD	Remote monitoring and control via SNMP, Web, or Telnet.	2
27156	50ft Cat6 550 MHz Snagless Patch Cable - Black	2
2POSTRMKITWM	2-Post Rackmount or Wallmount Installation of UPS	2
31218	14ft SHIELDED CAT6 MOLDED PATCH CABLE - GREY	2

Total Cost for Network Electronics: $72,000.00

Component 4: VoIP Phones for Luce Library

The following Cisco VoIP phones will be needed for the Luce Library connect to the existing PTS Phone System:

	IP Phones	
	Wall phones	
CP-6901-C-K9=	Cisco UC Phone 6901, Charcoal, Standard handset	15
4108W-xSP	Leviton Quickport Steel WallPhone Wall Plate	15

7.6.2.2.A Cost Data (continued)

	Desk Phones	
CP-8961-C-K9=	Cisco UC phone 8961, Charcoal, Standard handset	52
CP-89/9900-LK-K-C=	Locking Wallmount Kit for 8900 or 9900 with KEM Charcoal	20
	Conference Phones	
CP-7937G=	Cisco UC Conference Station 7937 Global	4
CP-7937-MIC-KIT	Microphone Kit (7 ft) for 7937	8
	Cisco Phone Licenses	
LIC-CM-DL	Top level part number for Unified CM Device Licenses	1
LIC-CM-DL-10	Unified CM Device License - 10 units	35
Included: CM7-DL-PAK	CUCM 7.0 DL PAK	1

Total cost of IP Phones: $35,000.00

Component 5: Upgrade to Existing Call Manager Servers

The current PTS Cisco Call Managers are going to be end-of-support in 2014. The cost to replace the existing Call Manager, upgrade the Call Manager Software to the latest version (9.x or greater) and to provide collaboration licenses as part of this component are as follows:

- Replace existing Call Manager with Cisco UCS Servers
- Configuration Call Manager for VmWare
- Upgrade Call Manager Software to Version 9.x or greater.
- Upgrade all Call Manger Licensing to Cisco Unified Work Space Licensing.

Total Cost of Call Manager Upgrade: $60,000.00

7.6.2.2.A Cost Data (continued)

Component 6 Library Storage Project

Princeton Theological Seminary is currently in partnership with the Internet Archive. One of Internet Archive's three East coast digitization centers is housed at PTS where books published before 1923 from PTS and other libraries are digitized to make them available for public consumption.

The Seminary is planning to expand this component, increasing the total number of books electronically online to the public, including the New Jersey Higher Education community. As part of this expansion project, the Seminary will move to an on-site storage system, which could thereby eliminate monthly charges for the off-site hosting services for electronic publications. This increased storage capacity will accommodate 200 terabytes of data, which again would be made available online.

Total Cost of Library Storage Project: $120,000.00

7.6.2.2.B Alternatives Approaches

The Seminary has explored alternative solutions for the each of the project's components. The data center was designed for maximum energy efficiency, using alternating hot, cold racks to allow for greater air flow and thereby allowing for greater energy efficiency through faster heat displacement. It was designed in accordance with the latest TIA-914 standard.

The core switches in the data center have been upgraded from older chassis based switches to modular Cisco 4900 switches, which also reduces energy consumption in the data center. All of the equipment in the data center supports Cisco Energy Wise technology, which will allow for effective management of energy consumption.

7.6.2.2.B Alternatives Approaches (continued)

In addition to the above data center project, the Seminary has recently completed its new library. The new library project consisted of building wide wireless services, new cabling infrastructure for integrated video, voice, security and data systems, redundant fiber cabling to the data center and all new energy efficient stackable network switches. The Luce renovation building components listed below will utilize the technology that was completed for the new library project, as follows:

1. The wireless deployment will be extended into the new library. The purchase of additional hardware is unnecessary to complete Luce Library wireless infrastructure.
2. Internal fiber cabling to connect the Luce building to the new library was installed as part of the new library project. This installation will extend the network connectivity from the data center, so that only copper cabling will need installation in Luce Library.

The Seminary has considered alternative approaches for each of the components to meet the academic needs of the faculty and students.

Luce Data Cabling: The Seminary did investigate using primarily wireless network technology for this project, thereby reducing the number of data ports required for this facility. Due to the video, audio/visual and distance learning applications for the library, the use of mostly wireless technology was not possible because of bandwidth limitations.

7.6.2.2.B Alternatives Approaches (continued)

Campus Outdoor Fiber Cabling: Given the distance limitations of copper cabling, an outdoor fiber backbone was the only viable solution. Outdoor wireless was rejected based on sight line limitations because there was no line of site to many buildings due to the tree line or building locations. In an effort to gain cost efficiencies, the Seminary was very conservative on the fiber cabling amounts per location. As some locations did not require 24 strands of fiber cabling, smaller cable bundles were used to reduce the overall material and termination costs for this project.

Luce Library Data Network: Since 2001, the Seminary has been standardized on Cisco network infrastructure equipment. The Seminary looked at other less expensive hardware manufacturers for the network switching technology. The decision to remain with a Cisco networking solution was made to allow for ease of support by the Seminary's IT staff, which has Cisco networking architecture expertise. The result will be faster response time to a service-impacting event or network failure, which could negatively impact faculty and student endeavors housed in new library's north wing.

Cisco IP Phones: The Seminary has been standardized on Cisco VoIP since 2001. The new library phones will be added onto the existing voice system allowing the Seminary to leverage the existing phone infrastructure to add additional phones to the library.

7.6.2.2.B Alternatives Approaches (continued)

Cisco Call Manager Upgrades: As the Seminary has been standardized on Cisco VoIP since 2001, the cost to upgrade the system software and hardware was the least expensive solution as it allows the Seminary to leverage the existing investment in phone handsets and phone licensing.

Library Storage Project: The Seminary is currently using a hosted cloud-based solution for their online, digital library project. The cost to digitize the remaining library books with the current hosted provider was shown to be more expensive over the long term due to recurring service fees. The Seminary finds it more cost effective to purchase the storage system and scanning equipment necessary to digitize future library books, videos and lectures in-house.

7.6.2.3 Plan for Technology

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions. The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey**.

7.6.2.3 Plan for Technology (continued)

The scope of technological advances proposed in this application will result in the enhancement of Open Educational Resources (OER) for scholarly collaboration and support services for educators and researchers. These advances will connect infrastructure for intra- and inter-institutional repositories, not only among the reciprocal institutions but for free access by all educators and students in New Jersey who may "visit" the Seminary library electronically.

The Seminary's mission is the preparation of men and women for theological leadership; however, the Seminary is also in service to educators, students and lay people throughout the State, the nation, and globally. Its resources are accessed in support of congregations of all denominations and faiths and as resources for the study of history and the demographic movements of populations throughout history. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission.

For Princeton Theological Seminary's Technology Plan see Appendix B.

7.6.2.4 Advancing the Institution

Princeton Theological Seminary in 2001 was one of the first higher education institutions in the U.S. to adopt a converged technology solution to integrate video, voice and data. Its early prediction of cost effectiveness has led to reduced phone line costs and full virtualization of all servers. By having over a decade of experience in leveraging integrated technology costs effectively, the Seminary will extend this technology to the Luce library north wing and advance digital "reach" to the next level with the support of the Higher Education Technology Infrastructure grant.

7.6.2.4 Advancing the Institution (continued)

The funding sought by the Seminary for these projects to advance the use of its integrated voice/video/data network operates on three levels:

- Create content for digital access: The digitization of the library collection creates an expansive new resource that will be accessible to the broadest community of scholars, students and faculty and will provide an unparalleled compendium of research and reference materials, accessible from anywhere, anytime;
- Ensure high reliability and high availability of converged network resources: The Seminary is upgrading its underlying telecommunications infrastructure and provide a redundant, diverse-pathway fiber backbone to the network; and
- Extend the reach of its literary, academic and scholarly resources, especially those that benefit from higher bandwidth distribution, within and outside of its campus community. The Seminary wishes to extend the reach of its fiber optic network (which will be run along with the redundant backbone fiber for more economical, efficient installation).

These components not only support each other, but provide a synergy that allows the Seminary to move to the next level to utilize its third generation converged IT infrastructure. New back-end servers for telecommunications will provide more advanced features for accessing resources and accommodate more end-user devices and

7.6.2.4 Advancing the Institution (continued)

modalities. New front-end technological devices will provide a more robust platform for accessing Seminary resources. The enhanced technological infrastructure and advanced front end will magnify the impact and cost benefit to the Seminary's mission in allowing greater access to the developing digital collection.

A comprehensive, readily accessible repository of reference, research and even general materials is an irrefutable cornerstone of any educational mission. With this grant, the Seminary will be able to provide its outstanding collection to a vastly broader community, without constraint of time or place, and across the widest range of technical devices. The newly installed technological infrastructure and components will also create a workshop for new and innovative methods of working with these technical resources, of collaborating with each other across the converged network, and interconnect with other institutions and allow for new access to such resources that might be out of reach.

7.6.2.5 Compatibility

Compatible with the New Jersey Office of Information Technology 2012 Annual Report (http://www.state.nj.us/it/pdf/2012_Annual_Report.pdf), PTS has implemented a robust IT infrastructure. Starting in 2000, PTS planned and implemented a converged data network, designed to carry voice, video, and data. In 2001, PTS was one of the first higher-education institutions to purchase and implement a VoIP phone system, to replace legacy Centrex phone lines, providing greater services, better integration, and long term cost savings.

7.6.2.5 Compatibility (continued)

This IT infrastructure:

1. Continues to support all departmental and enterprise wide applications and IT systems, hosted both on site, off site, and in the cloud.
2. Is shared and secure within reasonable industry standards
3. Supports emergency communications, via email, web, and telephone based broadcast communication methods

Princeton Theological Seminary is developing a core Internet resource for the study of theology and religion. Such an effort is one of substance, due to its rich theological and religious collection, which it intends to enhance and preserve in various document formats. Current domestic efforts to provide free public access to digital collections, the most notable being the Digital Public Library of America (DPLA), lack religion and faith in their scope, thereby threatening to isolate critical resources needed to comprehend the world's cultural complexity. With the Seminary's goal being the free release of available materials, PTS is providing a key niche for the study of religion to the state and beyond and enhances current academic partnerships already in place with schools such as Princeton University, Rutgers, Westminster Choir College of Rider University, New Brunswick Theological Seminary and Jewish Theological Seminary. In addition to strengthening these formalized relationships, materials would be accessible to other institutions whose libraries are inadequate to study religion and theology as well as high schools in the state studying religion as a social phenomenon and historical perspective, thus better preparing students to enter a pluralistic twenty-first society.

7.6.2.5 Compatibility (continued)

In June 2012, PTS adopted its Overall Integration Policy to ensure the efficient and effective use, implementation, communication and management of various information technologies across the Seminary campus for faculty, staff, students, alums and Seminary visitors. The four committees that resulted allow for mission critical issues to be coordinated centrally including but not limited to: Use, maintenance and implementation; Resource management – fiscal, human, technological; Legal, including federal compliance and intellectual property; Information management; Privacy; Security; Risk management; Web use, development and deployment; Training; and Hiring. The integration policy certifies proper governance and planning of IT resources while aligning resources with institutional priorities. The issue of institutional IT governance is covered in the Seminary's Technology Strategic Plan.

PTS is now poised to leverage its past investments in infrastructure, and move its converged network into its third generation. This is expected to support high definition video conferencing and telepresence, as well as facilitate access to volumes of digitized resources including books, video, and audio – for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

7.6.2.6 Matching Funds

Princeton Theological Seminary is committed to matching funds from current institutional accounts as these projects are already budgeted and committed for funding as per the attached Princeton Theological Seminary Board resolution.

7.6.2.7 Selection Criteria

Introduction: In the interests of serving the State that has been home to Princeton Theological Seminary since its founding in 1812, the Seminary seeks to fully satisfy the Selection Criteria as outlined by the State of New Jersey Office of Higher Education. The Seminary is among New Jersey's unique offerings to our nation and to the world. Nothing comparable concerning Protestant Christianity exists for research, reflection and the education of people of faith, whether they serve in ministry or in a great range of professions, including those of educators, corporate leaders, government servants, health care workers, military officers, lawyers, welfare advocates, humanitarians – the Seminary's graduates bring the added dimension of faith to their leadership in numerous careers. **The Seminary is committed to:**

1. **Advancing student education in the State of New Jersey.** As research in the humanities transitions into more digital formats, key components of the increased infrastructure, especially increased bandwidth and a new data center, will allow Princeton Seminary to continue as a leader in theological education and research with the inter-institutional connections necessary for today's multidisciplinary approach. Academic materials including but not limited to scholarly publications, course syllabi and materials, and on-campus lectures are highly sought after by those outside the institution and improving the infrastructure creates the foundation necessary to make the Seminary's materials more accessible to others. Princeton Seminary will create an academic repository to expand scholarly communications as well as make scholarly material on theology and its influence on history open to interested parties outside the seminary. Infrastructure enhancements will allow for improved and increased storage capacity and create the foundation necessary for longer term projects such as an academic repository containing traditional print material in a digital format, course materials, and videos of on-campus lectures.

7.6.2.7 Selection Criteria (continued)

2. Improving and expanding educational opportunities for students: Currently, the Seminary hosts adult scholars and representatives of congregations from all parts of the State and nation for seminars, workshops and short courses and, for those more distant or unable to travel, webinars are offered on topics of faith. The existing Educational Media encompasses a wide variety of media equipment, support services, and facilities, including audiovisual assistance; audio and video recording services; videoconferencing; webcasting; web streaming; and personal consultation on the selection and use of technologies for curricular needs. The Seminary's Media Center features a combination listening/conference room, a production studio which is also equipped as a "smart classroom," soundproof audio narration booth, recording/editing/ encoding stations, resource duplication stations, and campus cable TV system with local access channels. By upgrading these services can offer a change in the way religious and theological scholars, students and communities of interest work with texts.

3. Promoting academic research excellence, workforce readiness and the enhancement of the State's academic and economic competitiveness and prosperity by assisting in the production of a highly skilled workforce. As described briefly in the introductory paragraph of Section 5.2, graduates of Princeton Seminary join the State's workforce in an impressive variety of highly skilled professions. Graduates of the Seminary hold positions of leadership in careers that are not usually associated with a theological education. Currently, Seminary alumni/ae in New Jersey are engaged as faculty members in institutions of higher education, in corporate leadership, government, law, as physicians and health care workers, in social work and advocacy. **All that is to say, "A Seminary Education! It isn't just for pastors anymore!"**

7.6.2.7 Selection Criteria (continued)

One can point out, as well, that the Seminary not only prepares people for the New Jersey workforce but has shown a strong preference to employ New Jersey workers, as demonstrated in the construction of the new library. With very few exceptions, local companies, craftsmen and trades people within a radius of fifty miles of the Seminary have been employed to do the work. An average of 60 – 80 New Jersey workers per day have labored at the construction site throughout the past year, with the maximum number on a single day occasionally reaching 90 individuals. Numbers change according to the skills needed – glaziers, carpet layers, wood craftsmen, stone masons, etc. The Seminary's director of facilities estimates that more than 500 workers from different trades have been involved in the construction of the Library.

4. Promoting innovation and improving the delivery of higher education. Library science has evolved at a pace that leaves many smaller and/or free-standing libraries behind. From the outset, it has been the plan for the Princeton Seminary library to provide training for librarians in the new technologies incorporated in its structure that can be accessed from anywhere in the State. Exposure to the Seminary's educational collections that can support course work from high school through college can be provided in on-site conferences, webinars and video-conferences.

5. Advancing study at all levels in science, technology, engineering and mathematics education. Admittedly, these subjects are not featured in a seminary curriculum. Of equal importance, however, is the fact that education in the liberal arts, to which the Seminary contributes greatly, enriches one's ability to understand how the need for the STEM disciplines have influenced quests for advancement among cultures – sometimes in ways collaborative and

7.6.2.7 Selection Criteria (continued)

sometimes in conflict. These are areas on which the Seminary's collections on history and the religious influence on human migration can contribute generously. The Seminary will deliver to the scholarly community an open access platform, currently consisting of nearly 80,000 books and eventually to comprise a minimum of 300,000 books and 100,000 journal volumes, drawn from associated libraries (University of Toronto, The Library of Congress, the University of California Libraries, New York Public Library, Brigham Young University, the Boston Public Libraries and the University of Illinois Urbana-Champaign) and representing Jewish, Catholic, and Protestant traditions of thought and how the histories of those faiths have shaped western civilization and culture.

The digitization of theological texts that is underway only at Princeton Theological Seminary is made possible through the Seminary partnership with the Internet Archive, a non-profit digital library with the stated mission of "universal access to all knowledge." Princeton Seminary's Library is the ***only theological library in the world*** hosting one of Internet Archive's 29 globally dispersed scanning centers. The resulting digital collection is of vital importance and will advance collaborative scholarship that can expand humankind's knowledge about religion, about the ways faith and religion influence earthly and cosmic events and complement physical, human and life sciences. By following a consistent collection development policy for nearly *two hundred years*, the library has developed a comprehensive collection of historical and theological literature that in digital form can provide new information to help solve old questions. Even as biostratigraphy provided crucial evidence for the development of evolutionary theory, a massive dataset will similarly provide the basis for transformative discoveries in theology.

7.6.2.7 Selection Criteria (continued)

6. Maintaining consistency with the Seminary's educational mission. The proposed project is essential to the Seminary's educational mission. That mission is the preparation of men and women for ministry to congregations and for Christian leadership in communities and professional environments. Especially since Princeton Seminary supports scholarship for advanced degrees, it is imperative that its library offers the tools expected in a major research library. This project will help to meet the growing demand among scholars for electronic and interactive access to the library's academic and research resources.

7. Maintaining consistency with the Seminary's long-range facilities plan for technology. The current deployment of technological enhancements to the Seminary's telecommunications system and services, is consistent with the Seminary's original intent, since 2001, to leverage the use of VOIP converged use of video, voice and data technology to enhance teaching, learning, and research opportunities in service to our faculty, students and guests.

This effort will be achieved, given the newly implemented technical capacities, i.e., increased bandwidth, networked wireless capacity, etc., to do effective online distance learning, provide more access to an abundance of newly available digitally stored academic and literary materials developed in an electronically stored format. The upgrade of the current telecommunications infrastructure additionally allows the seminary to now construct and design flexible learning spaces to meet the growing need of its users to connect and access information through mobile, wireless and other devices. Thus, current and future classroom design will be consistent with the newly emerging learning styles of future generations who seek networked learning opportunities. This includes the lifelong learner.

7.6.2.7 Selection Criteria (continued)

To ascertain necessary information from these learners and instructors on an on-going basis, the newly established integration policy reinforces the importance of good governance, and allows the voice of the teachers, learners, researchers, and administration, to collaborate and work judiciously towards sustaining this precious gift, the telecommunications network, in a more cost effective way.

This project also mirrors the guiding principles established in the technology plan as the infrastructure permits greater access, is designed to adapt later innovations and promotes collaboration. Thus, the members of the technology department are committed to supporting the mission, vision and values statement of the technology plan which articulates the need to prepare men and women, in accordance with the Seminary's stated mission, for all of the many forms and vocations in ministry, in service to the church and world.

8. Insuring the cost-effectiveness of the proposed infrastructure Project. Financial management at Princeton Seminary is professional and responsible. The Seminary's business office is fully staffed with a controller and assistant controller, accountants, payroll coordinators, a purchasing agent – all supervised by the Seminary's senior vice president, chief operating officer and treasurer and accountable to the Seminary President and the Board of Trustees. Annual financial audits are performed by an outside agency and the Seminary is found to be in full compliance.

9. Proposing an infrastructure Project that is consistent with the State's goals and priorities. This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

7.6.2.7 Selection Criteria (continued)

10. Serving the best interests of higher education in the State as a whole. The stated mission of New Jersey public education is to provide leadership to achieve excellence in education, to advance the State's vision to prepare New Jersey students to contribute to local, national, and international communities. On that basis, Princeton Theological Seminary's service to the State of New Jersey and its students is exemplary. In any given year, the Seminary's student body that ranges from 500 to 550 men and women includes 70 to 80 New Jersey students – always the largest representation of any state. Among the students enrolled for academic year 2012-13, four are studying for the PhD degree, leading to probable careers in the academy. Five seek dual degrees (Master of Divinity/Master of Arts), leading to specialization in Christian Education or youth ministry. The end result for the State of New Jersey is this: 365 churches throughout New Jersey are currently led by a pastor or pastors who are Princeton Seminary graduates. The churches they serve are African Methodist Episcopal (AME), Baptist, Community, Congregational, Episcopal, Greek Orthodox, Lutheran, Methodist, Reformed, Roman Catholic, United Church of Christ, Korean Methodist, Korean Presbyterian, Taiwanese Presbyterian, and Presbyterian Church (U.S.A.). 333 additional Seminary graduates work in New Jersey in humanitarian causes and professions other than church ministry, bringing the additional dimension of faith to their work. Princeton Seminary graduates currently serve as faculty members at New Jersey seminaries (New Brunswick Theological Seminary, the Theological School of Drew University, Princeton Theological Seminary). A total of 1,290 Princeton Seminary graduates live, work or are retired in New Jersey, likely still engaged in community service through volunteer activities.

APPENDIX F

HIGHER EDUCATION TECHNOLOGY INFRASTRUCTURE ACT CERTIFICATION

Although the Application relates to one Project, an institution may apply for funding from one or more Programs for each Project This certification is drafted on the assumption that funding for the entire Project is requested from HETI If funding is requested from multiple Programs, multiple certifications may be submitted

The undersigned officer of Princeton Theological Seminary (the "Institution") hereby certifies the following:

1. I am an officer of the Institution duly authorized to make this Certification and to submit to the Secretary of Higher Education, the Application dated March 8, 2013 (the "Application") to which this Certification is attached.

2 The Application requests funding pursuant to the Higher Education Technology Infrastructure Act, N.J.S.A. 18S: 72A-59 et seq. ("HETI") for the Project described in the Application.

3. The Project and the Institution satisfy the eligibility requirements for funding pursuant to HETI.

4. The Institution acknowledges and agrees that it is obligated to contribute matching funds to the cost of the Project and is authorized by the Resolution duly adopted by the governing body of the Institution dated March 8, 2013 and submitted with the Application (the "Resolution") to provide matching funds from the sources described in the Application in an amount equal to 100 percent of the amount of the grant (the "Matching Funds").

5. The Institution has or will have the Matching Funds as required by HETI.

6. The Institution acknowledges and agrees that it is obligated to maintain the Project and is authorized by the Resolution to fulfill this obligation.

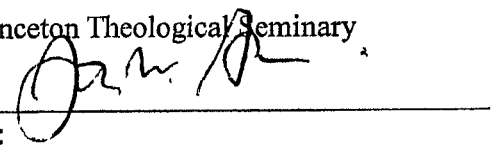
7. The Institution will use the HETI grant to advance the institution toward the next level in establishing integrated voice, video and data networks.

8. The Institution will use the HETI grant to enhance interinstitutional or intrainstitutional connectivity and information technology as it relates to advancing the instructional, research, or service/economic development missions of the institution.

9. The information provided in the Application regarding the Institution, the Project and the cost and uses thereof, and the benefit to and the effect of the Project on, the Institution, its students and the State of New Jersey is correct and complete.

10. The Project and the construction, operation and maintenance thereof will, at all times comply with all State and federal laws, regulations, codes, statutes, and government guidelines, including the principles of affirmative action and equal employment opportunity where applicable.

Princeton Theological Seminary

By: 

Name: John W. Gilmore

Title: Sr. Vice President, COO & Treasurer

March 8, 2013
Date

APPENDIX H

CERTIFICATION RELATING TO QUESTIONS AND ANSWERS

The undersigned officer of Princeton Theological Seminary (the "Institution") hereby certifies the following:

1. I am an officer of the Institution duly authorized to make this Certification and to submit to the Secretary of Higher Education, the Application dated March 8, 2013 (the "Application") to which this Certification is attached.

2. The Application requests funding from one or more of the five New Jersey Higher Education Capital Funding Grant Programs (the "Programs") to which the Application relates.

3. As of the date of this Application, the Institution has reviewed and understands the posted questions and answers and has taken such questions and answers into account in completing and submitting the Application.

Princeton Theological Seminary

By: _____

Name: John W. Gilmore

Title: Sr. Vice President, COO & Treasurer

March 8, 2013
Date

APPENDIX I

CERTIFICATION RELATING TO ADDENDA

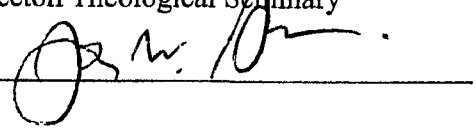
The undersigned officer of Princeton Theological Seminary (the "Institution") hereby certifies the following:

1. I am an officer of the Institution duly authorized to make this Certification and to submit to the Secretary of Higher Education, the Application dated March 8, 2013 (the "Application") to which this Certification is attached.

2. The Application requests funding from one or more of the five New Jersey Higher Education Capital Funding Grant Programs (the "Programs") to which the Application relates.

3. As of the date of this Application, the Institution understands that Addenda to this Solicitation may be posted by the Secretary. The Institution has reviewed any Addenda, if any have been posted by the Secretary, and has taken such Addenda into account in completing and submitting the Application.

Princeton Theological Seminary

By: 

Name: John W. Gilmore

Title: Sr. Vice President, COO & Treasurer

March 8, 2013
Date

PTS Appendix A – Design Documentation

Contents:

- Exhibit A Luce Library Electrical Design
- Exhibit B Proposed Campus Fiber Upgrade Design
- Exhibit C Present Fiber Plant Conditions
- Exhibit D Itemized Network Electronics
- Exhibit E Luce Library internal cabling, itemized list
- Exhibit F Itemized list of proposed fiber connections
- Exhibit G Itemized list of VoIP phones for Luce Library
- Exhibit H Itemized list of Call Manager Upgrades
- Exhibit I SAN Storage Design
- Exhibit J Itemized list of SAN storage items

EXHIBIT A Luce Library Electrical Design

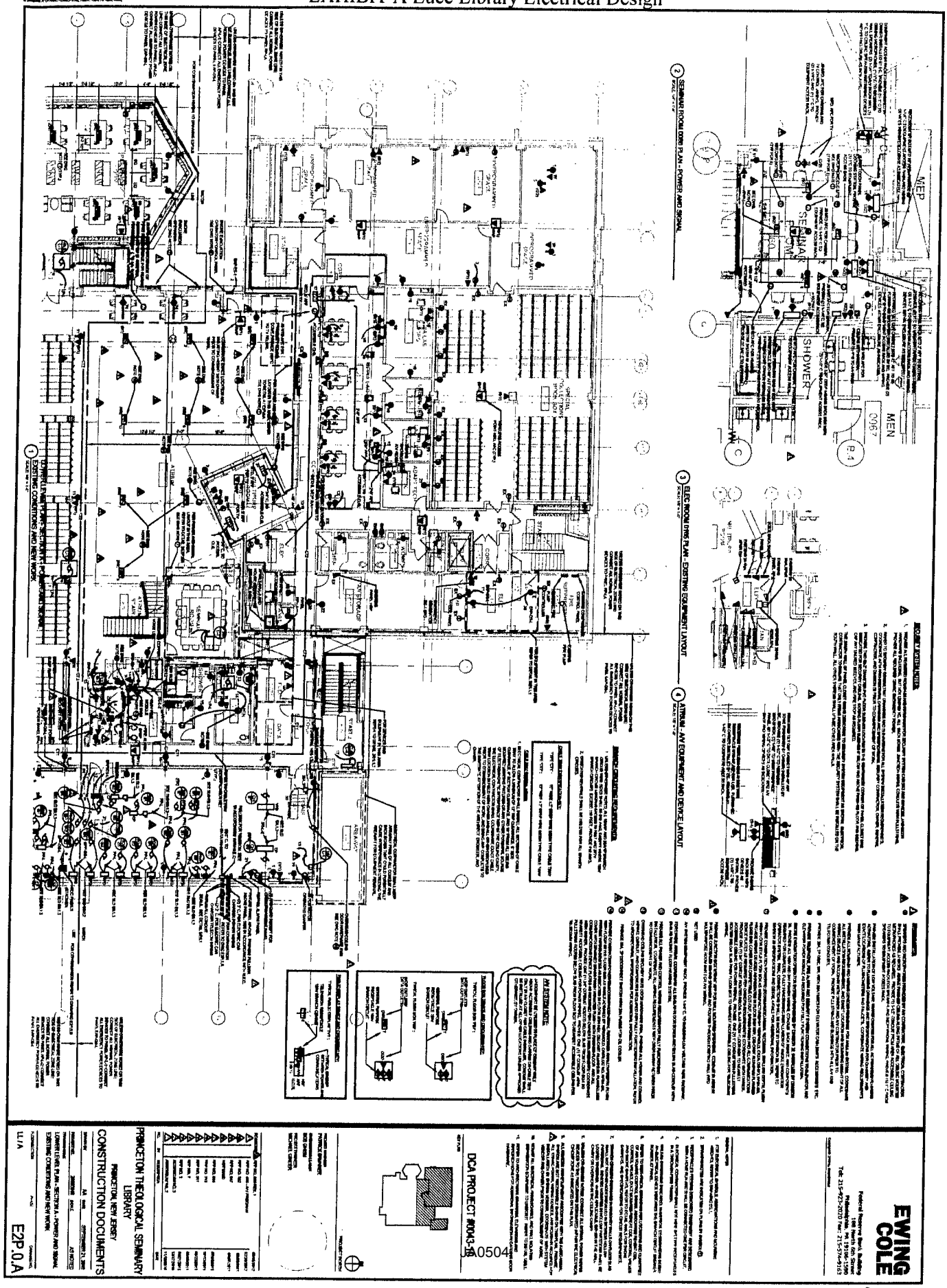


EXHIBIT A Luce Library Electrical Design

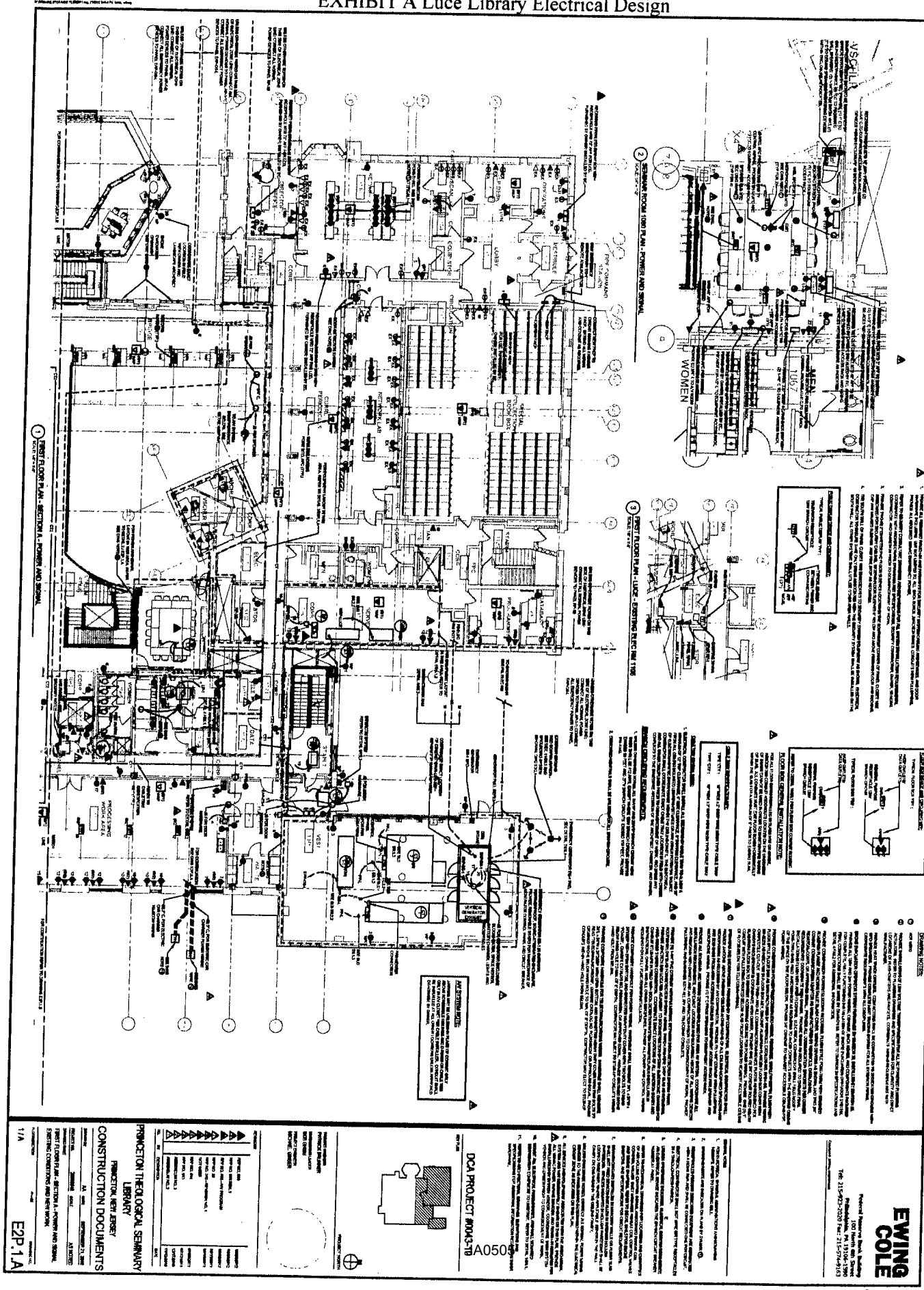


EXHIBIT A Luce Library Electrical Design

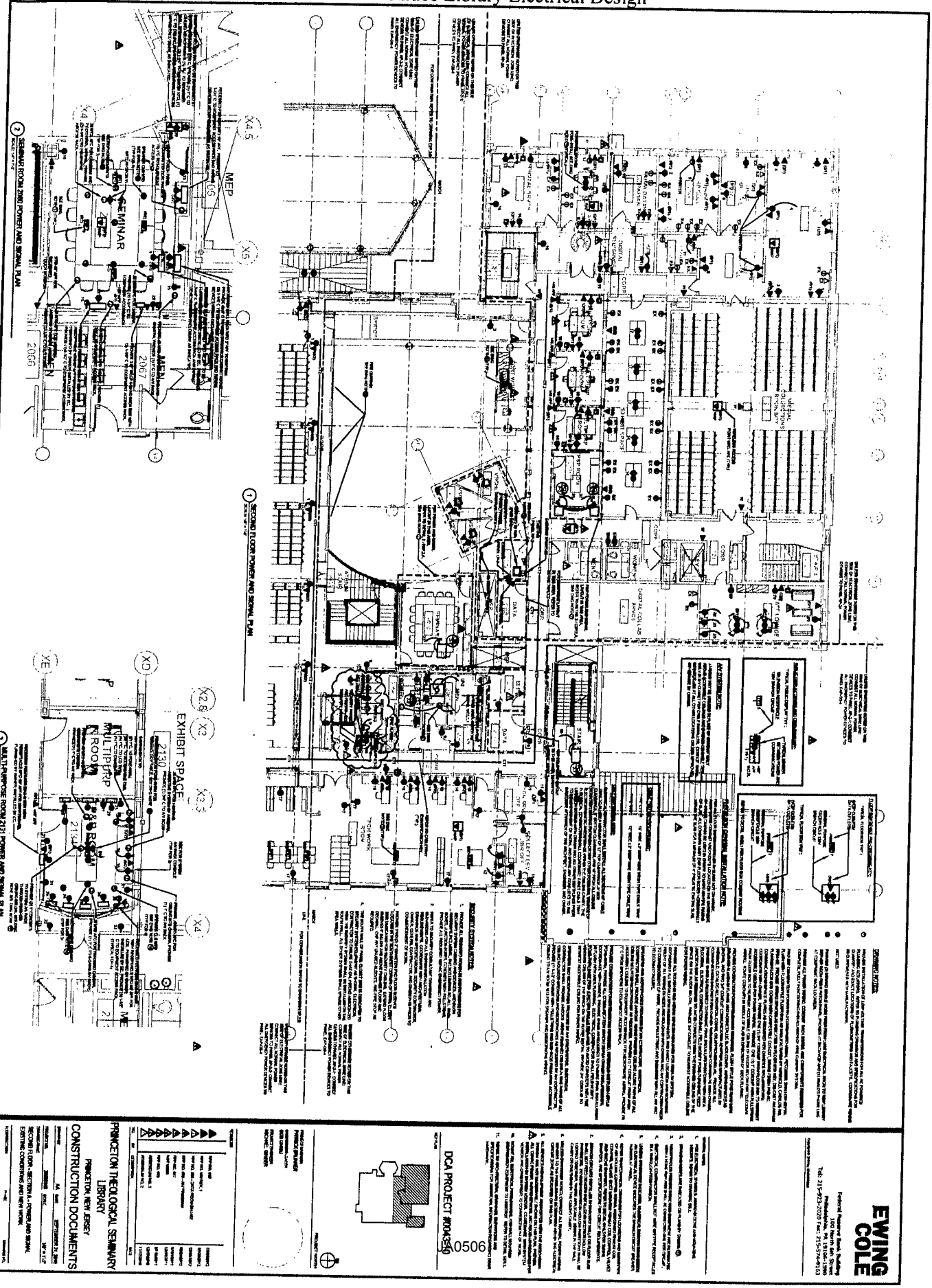


EXHIBIT A Luce Library Electrical Design

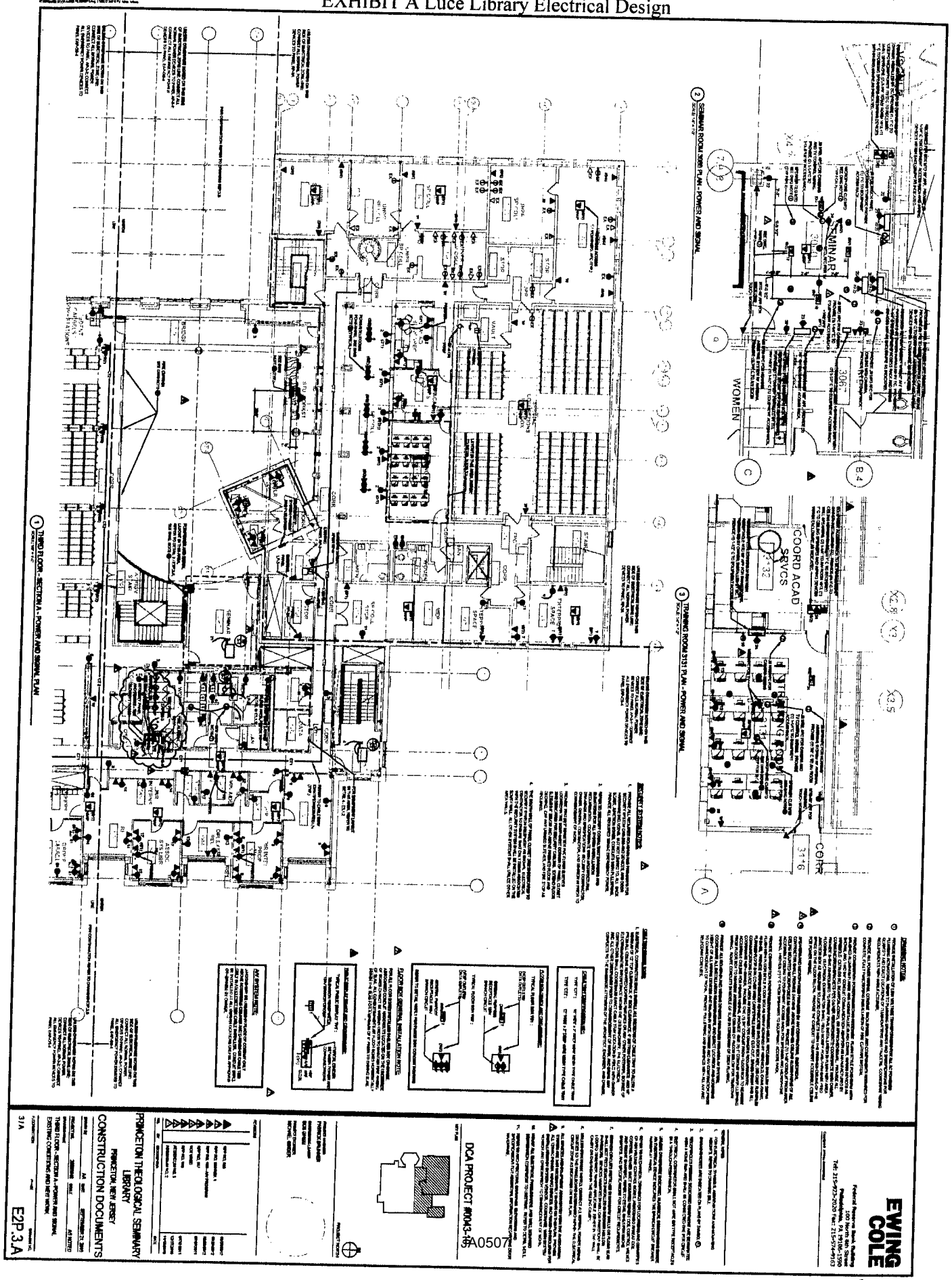


EXHIBIT B Proposed Campus Fiber Upgrade Design

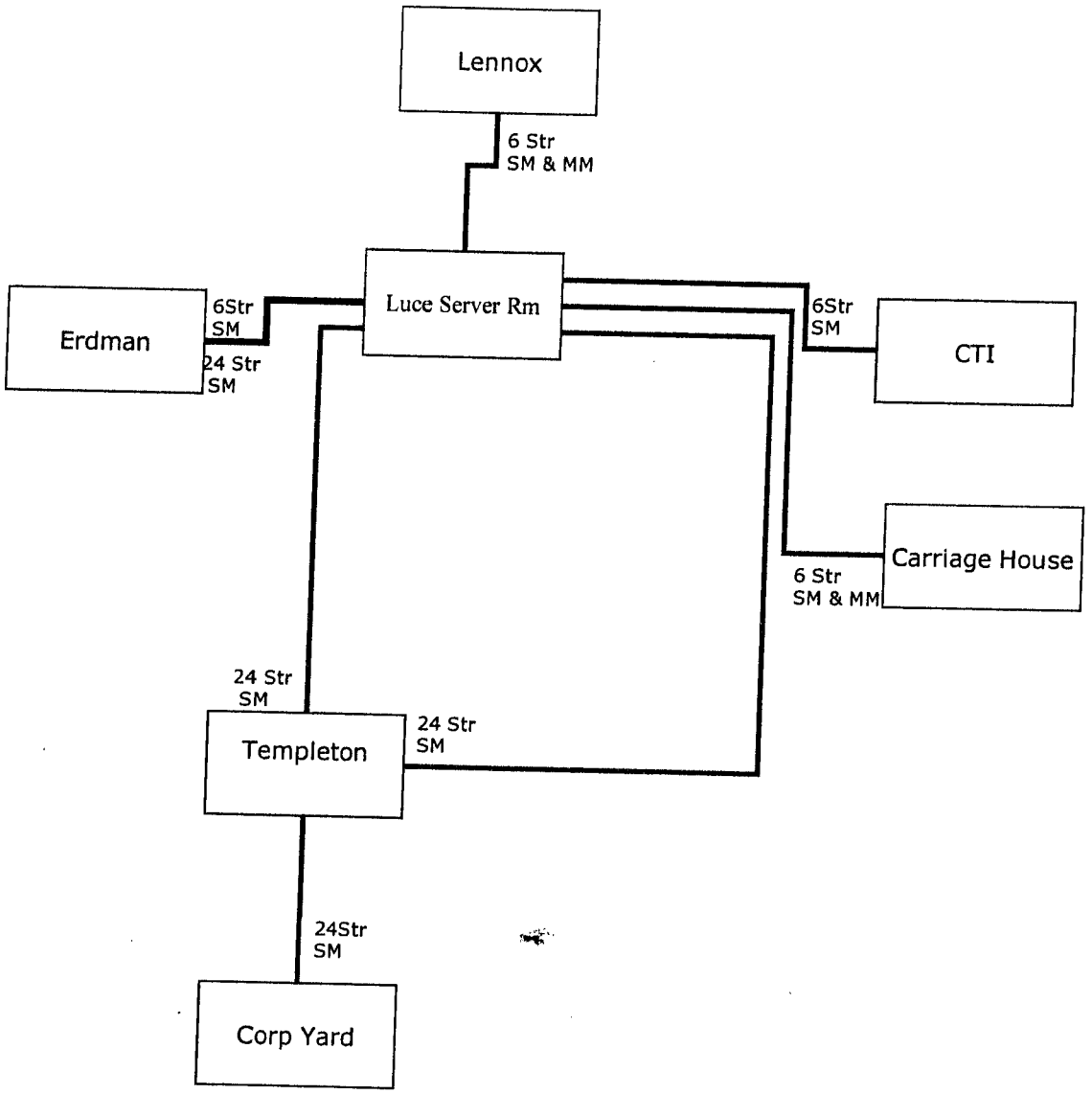
JA0508

EXHIBIT C Present and Historic Copper and Fiber Plant Conditions

See attached, 3 pages:

1. Current installed single mode (SM) fiber plant, main campus
2. Currently installed single mode (SM) fiber plant, West Windsor campus
3. Legacy fiber plant map, Main Campus
4. Legacy AV copper cable plant map, Main Campus

EXHIBIT C Present and Historic Copper and Fiber Plant Conditions

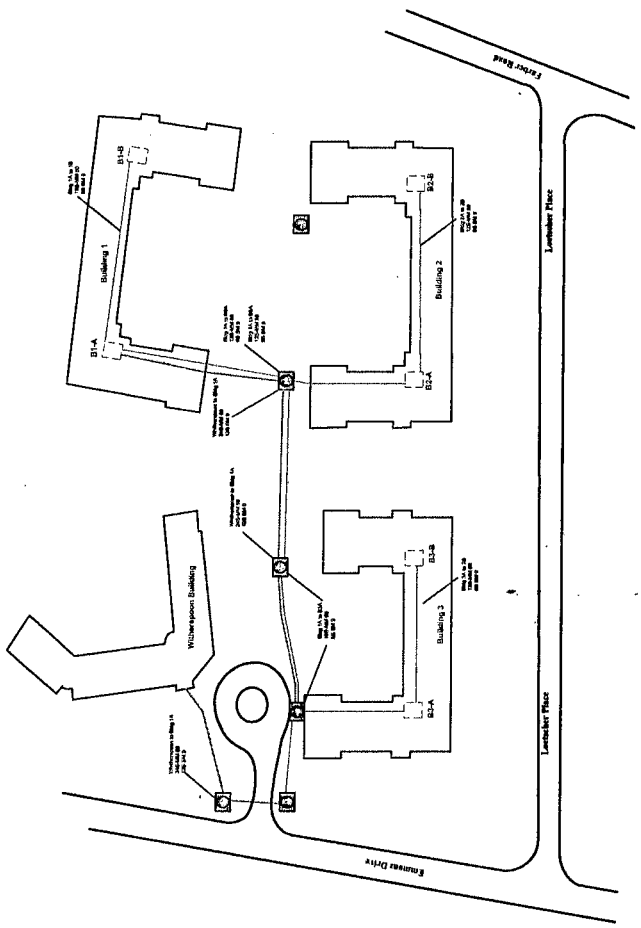


PTS Fiber Plant as installed on

10-15-2012
By R. Tillman

NetQ Multimedia Company

EXHIBIT C Present and Historic Copper and Fiber Plant Conditions



Princeton Theological Seminary West Windsor Fiber Plant

EXHIBIT C Present and Historic Copper and Fiber Plant Conditions

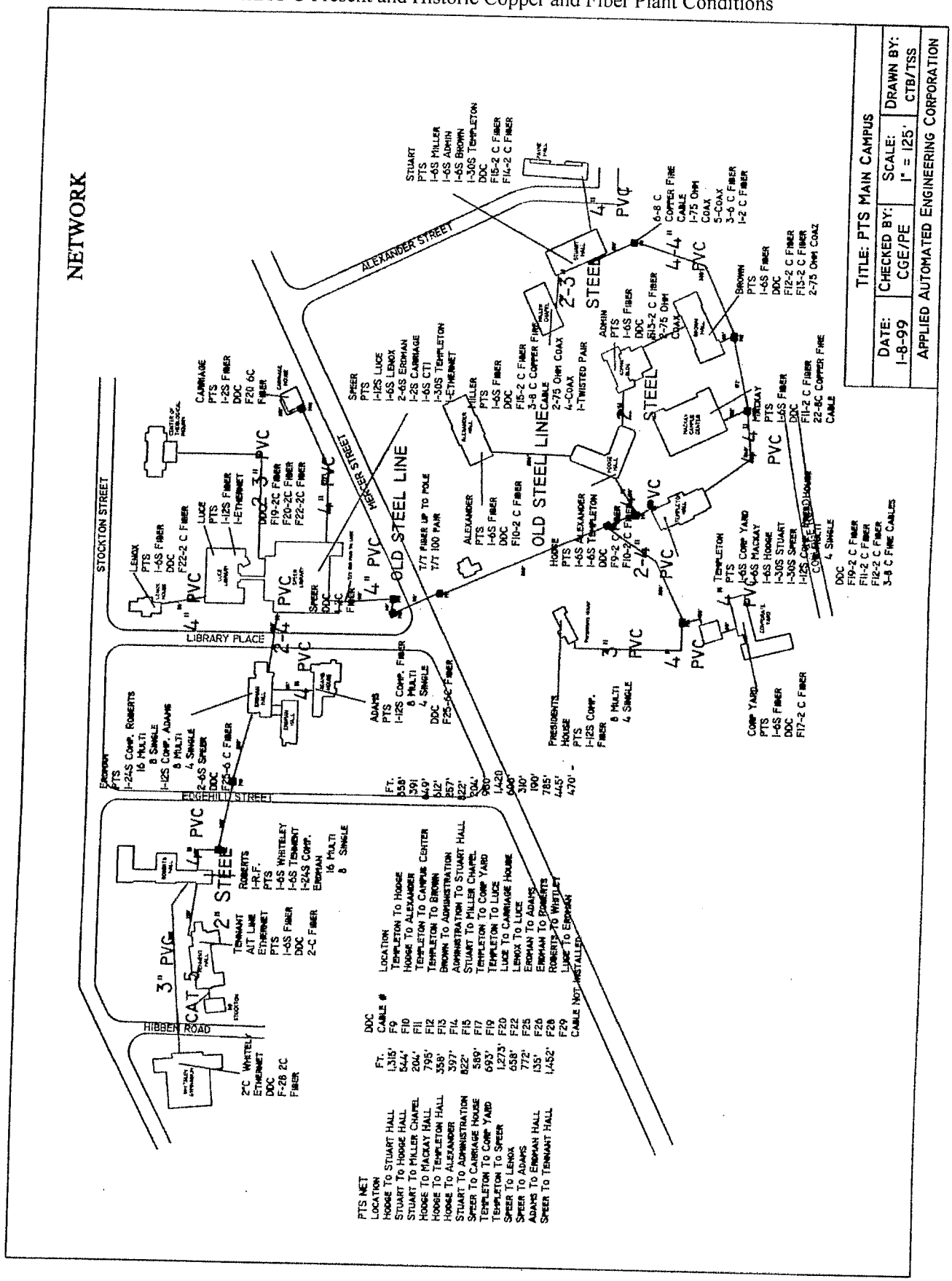


EXHIBIT C Present and Historic Copper and Fiber Plant Conditions

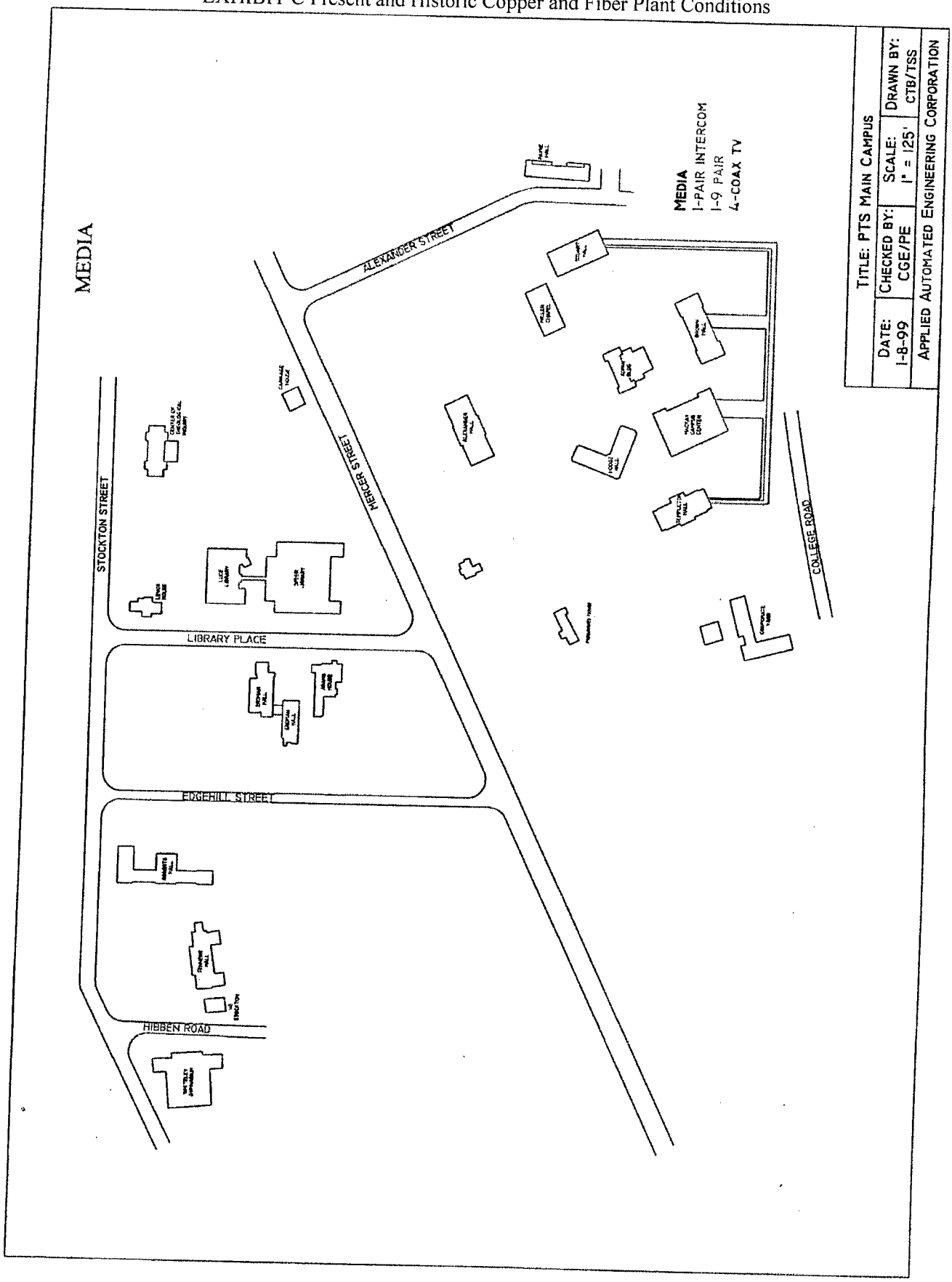


EXHIBIT D Itemized Network Electronics

Luce Network Electronics

Stack 1

WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
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WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1

CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
SFP-10G-LRM	10GBASE-LRM SFP Module	2
CAB-STK-E-1M	Cisco FlexStack 1m stacking cable	1
21617	3m USA-Made 10 Gb LC/SC Duplex 50/125 Multimode Fiber Patch Cable - Aqua	2
	Stack 2	
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-	Console Cable 6 ft with USB Type A and mini-B	1

USB		
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48FPD-L	Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	1
CAB-16AWG-AC	AC Power cord, 16AWG	1
C2960S-STACK	Catalyst 2960S FlexStack Stack Module optional for LAN Base	1
CAB-STK-E-0.5M	Cisco FlexStack 50cm stacking cable	1
PWR-CLIP	Power retainer clip for compact switches	1
SFP-10G-LRM	10GBASE-LRM SFP Module	2
CAB-STK-E-1M	Cisco FlexStack 1m stacking cable	1

IDF 2107

SU3000RTXL2U	SmartOnline 3kVA On-Line Double-Conversion UPS, 2U Rack/Tower	2
PDU2430	Single-Phase Basic PDU, 30A 120V, 1U Horizontal Rackmount,	2
SNMPWEBCARD	Remote monitoring and control via SNMP, Web, or Telnet.	2
27156	50ft Cat6 550 MHz Snagless Patch Cable - Black	2
2POSTRMKITWM	2-Post Rackmount or Wallmount Installation of UPS	2
31218	14ft SHIELDED CAT6 MOLDED PATCH CABLE - GREY	2

Total Cost for Network Electronics: $72,000.00

EXHIBIT E Luce Library internal cabling, itemized list

Wired Data Ports: 363

Wireless: 23

IP Phones: 53

Wall Mount Phones: 15

A/V Cabling Coax runs: 18

A/V Cabling Video Conferencing Rooms: 10

Total Cost for Building Infrastructure: $125,000.00

EXHIBIT F Itemized list of proposed fiber connections

- (24 strand single mode) From Scheide
- (24 strand single mode) From Miller
- (24 strand single mode) From Stuart
- (24 strand single mode) From Mackay
- (6 strand single mode) From Payne
- (6 strand single mode) From Brown
- (6 strand single mode) From Administration Bldg
- (6 strand single mode) From Alexander
- (6 strand single mode) From Hodge
- (6 strand single mode) Gym to Tennent
- (12 strand single mode) Sheidie to Luce

Materials

Item	Description	Quantity
1	96st Singlemode cable in/out plenum	700
2	72st Singlemode cable in/out plenum	600
3	48st Singlemode cable in/out plenum	400
4	24st Singlemode cable in/out plenum	900
5	12st Singlemode cable in/out plenum	800
6	6st Singlemode cable in/out plenum	1500
7	CCH-002 HOUSING	10
8	CCH SM BULKHEAD	28
4	SM UNICAM CONNECTORS	252
5	MISC HARDWARE & SLEEVE	1

EXHIBIT G Itemized list of VoIP phones for Luce Library

	IP Phones	
	Wall phones	
CP-6901-C-K9=	Cisco UC Phone 6901, Charcoal, Standard handset	15
4108W-xSP	Leviton Quickport Steel WallPhone Wall Plate	15
	Desk Phones	
CP-8961-C-K9=	Cisco UC phone 8961, Charcoal, Standard handset	52
CP-89/9900-LK-K-C=	Locking Wallmount Kit for 8900 or 9900 with KEM Charcoal	20
	Conference Phones	
CP-7937G=	Cisco UC Conference Station 7937 Global	4
CP-7937-MIC-KIT	Microphone Kit (7 ft) for 7937	8
	Cisco Phone Licenses	
LIC-CM-DL	Top level part number for Unified CM Device Licenses	1
LIC-CM-DL-10	Unified CM Device License - 10 units	35
Included: CM7-DL-PAK	CUCM 7.0 DL PAK	1

Total cost of IP Phones: $35,000.00

EXHIBIT H Itemized list of Call Manager Upgrades

- Replace existing Call Manager with Cisco UCS Servers
- Configuration Call Manager for VmWare
- Upgrade Call Manager Software to Version 9.x or greater.
- Upgrade all Call Manger Licensing to Cisco Unified Work Space Licensing.

Total Cost of Call Manager Upgrade: $60,000.00

EXHIBIT I SAN Storage Design

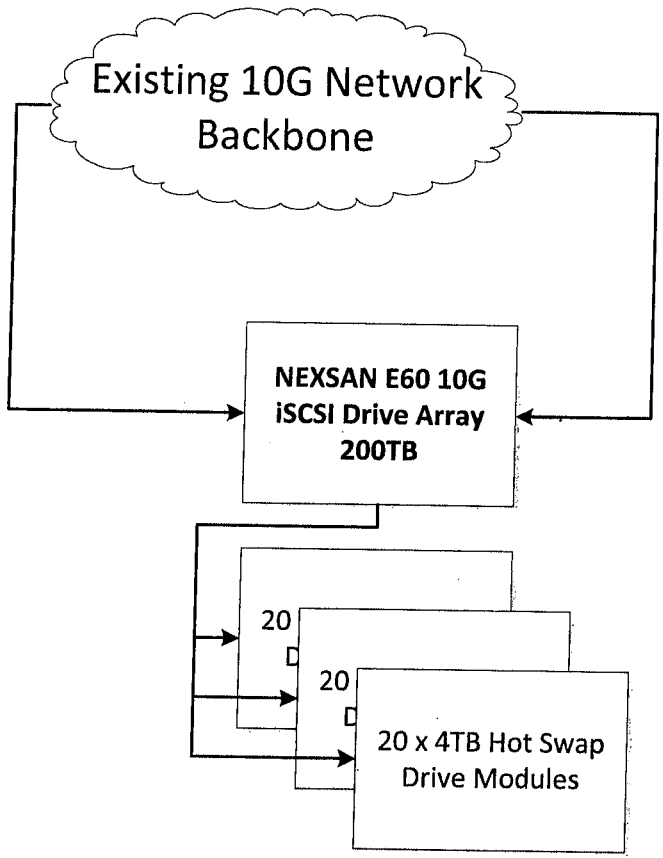

EXHIBIT J Itemized list of SAN storage items

- NEXSAN E60 10G iSCSI Storage Array
- QTY 60, 4TB NEXSAN Hostswap Drives
- QTY 4, NEXSAN 10G Fiber Modules
- QTY 4, CISCO 10G Fiber GBICs
- QTY 4, SC-LC Fiber Patch Cables, 10M

Total Estimated Cost: $120K

PTS Appendix B

Please see attached Princeton Theological Seminary Technology Plan

Overview of the Department of Information Technology at Princeton Theological Seminary

Technology Strategic Plan: History and Planned Progress

Adrian Backus
Vice President for Information Technology

March 2013

JA0525

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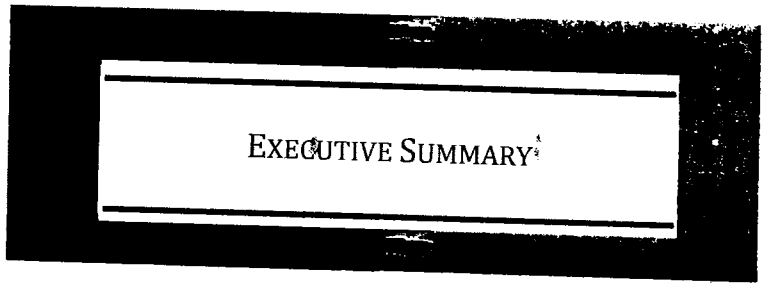


EXECUTIVE SUMMARY

The Princeton Theological Seminary ("PTS" or the "Seminary") Technology Plan is a comprehensive and forward looking strategy to support the library, learning environments, educational technology and infrastructure for the Seminary. The Department of Information Technology (DIT) was established in 1999, and the Board of Trustees charged DIT to develop a campus-wide technology plan. In response to this request, DIT conducted a comprehensive evaluation of technology across the Seminary. DIT worked closely with several key offices including: Academic Affairs, Business Affairs, Student Affairs, the Library, D.Min Program, Continuing Education, Institute of Youth Ministry and reviewed their long-term project plans in terms of the technology equipment needs and support services to meet their strategic goals.

In 2005, an external audit of the organization and operations of campus technology was performed by Kaludis Consulting. The final report highlighted the strengths of the technical infrastructure and encouraged a more integrated approach to the organizational structure. Further, it noted the need for continued support and maintenance of the technical systems and staff, and confirmed that there had been appropriate budgeting and funding for technology projects on campus. The main recommendations from the audit report included:

- Ending the "silo mentality" at the Seminary by integrating systems where possible, improving interdepartmental communications, and creating three campus groups to encourage community involvement in decision-making about technology throughout the community.
- The integration of the Seminary's external content-based Internet and its internal administrative-based Intranet by implementing the Jenzabar web portal solution.

Following the audit, DIT continued to work with key departments (the School of Christian Vocation and Ministry, Academic Affairs, Business Affairs, Student Affairs, and Seminary Relations) and updated the Technology Plan in 2008, 2011 and 2012.

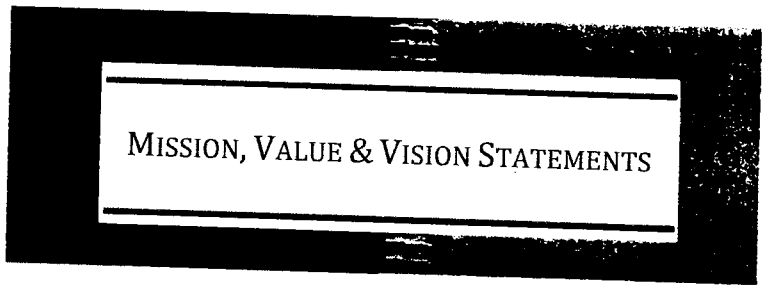
The guiding principles of the Department of Information Technology are to:

- Promote Access: The wealth of academic PTS resources as well as human, capital and financial assets, position the seminary to embark towards a more open institution by allowing others access to materials traditional only available to the seminary community.
- Be Flexible/Adaptable: New installations must meet the requirement of today's and tomorrow's learners by being flexible to allow for multiple configurations to adequately support learning environments that are solely physical to solely online and of course hybrid environments where in-person meets online.

JA0528

- Move towards active/collaborative: As learning moves away from the lecture method to more active, engaged and collaborative styles, DIT must ensure that classrooms and other learning environments meet this need by fostering curiosity and the joy of learning for PTS students and others interested in theological education.
- Provide enhanced training and support: Move towards a more advanced IT infrastructure and sophisticated environments, DIT commits to enhanced training and support for staff and end-users so teaching, learning and research can be strengthened.

The Executive Council of the Seminary meets twice per year for all day strategic planning sessions to review goals, objectives and accomplishments. The current Technology Plan is integrated with PTS' strategic planning process and aligns with financial planning initiatives at the Seminary.



MISSION STATEMENT

To develop and implement a comprehensive program of media and technological services in support of the Seminary's stated mission in theological teaching and learning, by thoughtful consideration and deployment of technology as an information, education and communication resource for equipping men and women "for leadership worldwide in congregations and the larger church, in classrooms and the academy, and in the public arena" (*Princeton Theological Seminary Mission Statement*).

VALUE STATEMENT

We value the use of computer, telecommunications and media technology in the service of the academic and administrative aims of the Seminary, including Academic Affairs, Student Services, School of Christian Vocation and Mission, the Library, Business Affairs, Seminary Relations, and Development.

VISION STATEMENT

We envision preparing our faculty, students and staff to excel in our increasingly complex world by equipping the Seminary community with continually evolving technology services that can provide unique tools for addressing major issues the church is facing today and will face in the future, including globalization. We envision supporting the curriculum of degree and non-degree programs by engaging in an interactive teaching/learning process through the following technologies: learning management systems (LMS) assessment and outcomes; distance learning; smart classrooms; providing audio, video, lecture capture and teleconferencing, mobile/QR, 4G, and Smart technologies, kiosk/electronic bulletin board, and emergency notification system; developing a multi-media lab and training center; providing CourseInfo web pages for individual classes; providing access to new technologies such as Cloud computing, gesture/touch-based augmented reality, Library: visualization, eBook, eReserves, and automated cameras and digitization; maintaining network and wiring infrastructure; providing voicemail and other telecommunication services; and supporting the most appropriate academic and administrative management information Enterprise Resource Planning (ERP) software packages for all seminary constituents.

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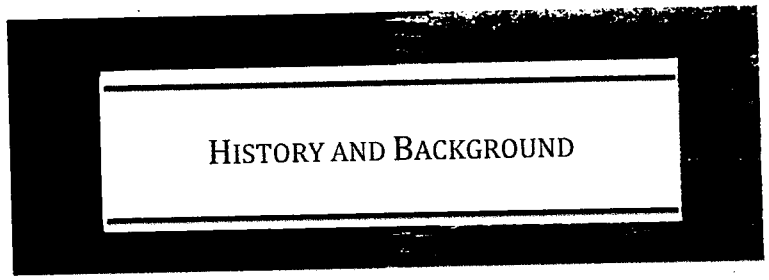

BACKGROUND

The Office of Information Technology was established in 1999. The information technology program can be divided into two overlapping areas: administrative and academic programs, and projects.

The primary administrative program is the Jenzabar software system, which integrates finance, development, admissions, alumni/ae, advising, and student life and registration modules.

The primary academic system is the Blackboard system, which contains individual course web sites and online community communication functions. The Blackboard system is a hybrid, which is a teaching tool, a mechanism for creating community, and an electronic reference library. It bridges the gap between the library building and classrooms.

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GUIDING PRINCIPALS

- Promote Access: The wealth of academic PTS resources as well as human, capital and financial assets, position the seminary to embark towards a more open institution by allowing others access to materials traditional only available to the seminary community.
- Flexible/Adaptable: New installations must meet the requirement of today's and tomorrow's learners by being flexible to allow for multiple configurations to adequately support learning environments that are solely physical to solely online and of course hybrid environments where in-person meets online.
- Move towards active/collaborative: As learning moves away from the lecture method to more active, engaged and collaborative styles, DIT must ensure that classrooms and other learning environments meet this need by fostering curiosity and the joy of learning for PTS students and others interested in theological education.
- Enhanced training and support: Move towards a more advanced IT infrastructure and sophisticated environments, DIT commits to enhanced training and support for staff and end-users so teaching, learning and research can be strengthened.

MANAGEMENT

The Information Technology Department operates through a careful balancing act encompassing three types of management.

- Facility management: Various campus locations where physical technology centers are maintained, including the Media Studio, three student computer labs, the Media Lab and Academic Services Center, as well as inter-building connectivity, including dorms and apartments.
- Utility management: Somewhat like the telephone company, DIT manages all network and telecommunications systems, including email, internet access, web services, media streaming, cable and satellite support, etc.
- Customer service support management: This includes hardware, software, printing, telephone and network support and connectivity, and academic software support as well as training for students, faculty, staff and administration.

The Information Technology Department is comprised of four main areas: The Academic Services Center; Telecommunications, Network, and Support Services; Educational Media Services; and Web Services.

The Academic Services Center (ASC) 2003 to 2012

ASC is currently home to Blackboard support services, specialty software support (EndNote, BibleWorks, Zotero, and Accordance), office productivity software support and training, and the Media Lab. ASC is a customer service oriented support center interacting with the seminary community through client training, application support, and instructional initiatives. It is anticipated that a growth of services with a broader sense of responsibility to the institutional mission statement will be required. Staff growth is expected, services and programmatic expansion will occasion, and support for training and technical needs will be streamlined. (Modified January 2013 – see DIT Reorganization, page 57.)

Telecommunications, Network, and Support Services (TNSS) 1999 to 2012

TNSS consists of six functional areas: Desktop Hardware/Software Support/Help Desk, Network/Server Support, Phone Support, Computer Lab Support, Academic Software Support, and Administrative Data Systems support. TNSS manages and administers the "systems" that provide electronic services, including software and hardware, and provides user support. These six areas are also administratively supported internally, specifically with office administration, purchasing, budget, project management, and accounting support.

Many departments have utilized such IT administrative services not in existence elsewhere in the institution. Increased online services have caused expansion and reliance on various technological services in real time, a demand for quick time response, and more user generated multi media and a need for more data and storage. Additionally, there is a need for service options, live support, tracking and evaluation of successes and failures for improvement, and interface changes between users and their data due to evolving technologies, i.e. mobile. Such challenges will require different configurations of systems, increased and flexible personal knowledge base, and increased development of regulations on security, privacy and legal liability matters. (Modified January 2013 – see DIT Reorganization, page 57.)

Educational Media Services 2001 to Present

Educational Media support services include audio-video recording, conferencing and lecture capture; live and on-demand multi-media streaming; media resource production; media system design and equipment purchasing; media event and classroom support; contract maintenance support; coordination of

JA0532

campus cable TV and local access channels; budgeting; and long-term system planning. Systems vary from way-finding campus kiosks and bulletin boards to high-tech smart classrooms.

Media-produced resources include audio-video recordings of various lectures, events and courses; departmental videos for the web, ranging from video fly-throughs of construction projects to virtual campus tours and interviews.

WEB SERVICES 2000 TO 2012

Web Services provides web infrastructure, development and maintenance support of the PTS intra-internet web. The purpose of the web program is to support, promote, and advance the academic and administrative goals of the seminary. The public PTS web presence was upgraded to the most recent stable release of the Ektron CMS400.NET platform in the summer of 2012. The Ektron CMS400.Net version 8.6 offers an environment that continues to meet current web standards set forth by the World Wide Web consortium. The three-tiered development, staging and production platform has altered slightly in anticipation of the migration of content off of the current Jenzabar Internet Campus Solution (JICS) platform. Development is now an isolated environment that allows for single sign-on. Workflow is limited for content editor use on the staging and production areas, which enables users to release content for web production at their discretion.

The Department of Information Technology continues to refine a proposal to restructure Web Services. The purpose is to ensure that the functions of web design, content management, programming, technical system support, and management oversight can be appropriately prioritized to service all facets of the PTS web community. A major effort to improve efficiencies of the Seminary web includes the design and development of the Web Content Migration Project. Benefits of the web portal content migration include: provide better search and navigation capabilities, enhanced security, layout functions with advanced social networking features and mobile web functionality, more current content/information, input by users and visitors with real time results, the ability for content managers to update content independently, virtual interaction, and PTS content retrieval (podcasts, blog posts, etc.). Currently, Web Services has begun the second phase of its web content migration project, which will focus on the cross-system integration of the PTS public website with the PTS private intranet portal. Such cross-system integration will allow for a more robust, interactive web environment. Public information currently residing on the portal will be migrated to the Ektron system, which allows for housing both public and private web information on a single platform. A determination on the use of such information, which could be appropriately placed either publicly or privately, would greatly enhance the possibility to attain the goal of enabling seminary internal users to have single sign-on capability. (Modified January 2013 – see DIT Reorganization, page 57.)

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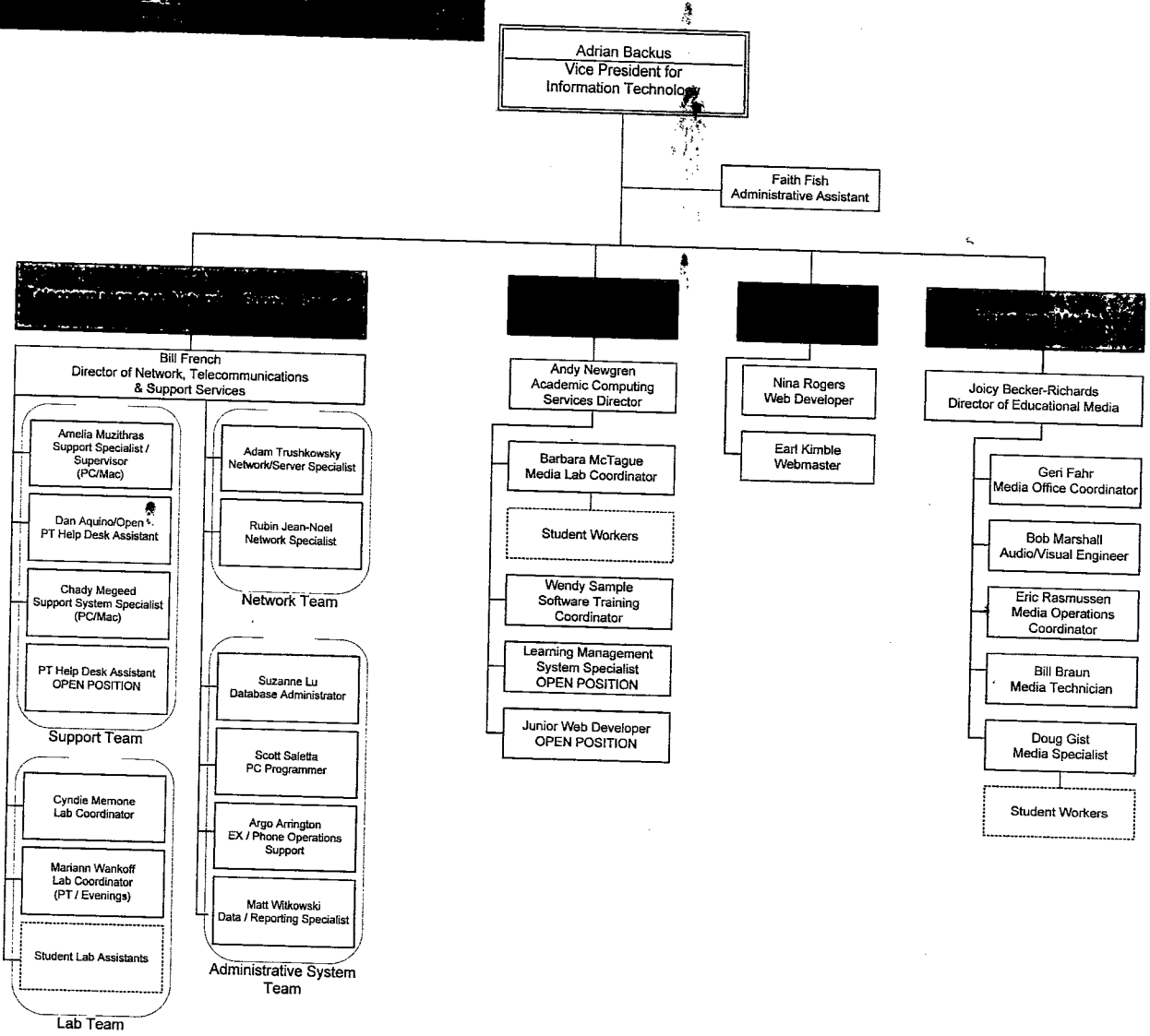
DEPARTMENT OF INFORMATION TECHNOLOGY ORGANIZATION 1999 – 2012

(Modified January 2013 – see DIT Reorganization, page 57.)



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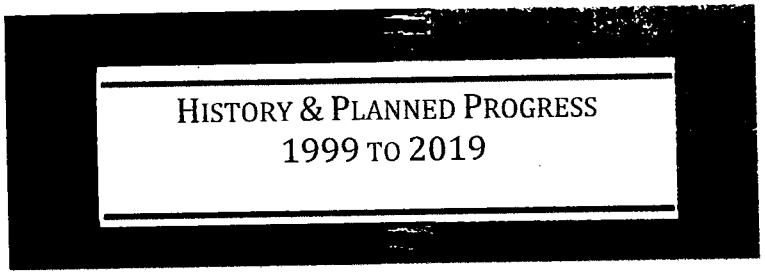

The Department of Information Technology continues to develop a roadmap to integrate technology in the Seminary's long range plan.

PHASE I – INFRASTRUCTURE PHASE 1996-2008

Goal: Build a solid hardware and software foundation on which expanding technology services can grow.

Actions: Installation of new network hardware backbone; move a majority of the system over to an appropriate technical platform (i.e. NT, etc.); upgrade the administrative management information system; foster and support web management and development; and establish life expectancy and maintenance programs for all purchased systems.

Status: Complete

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1996-1999

The PTS network fiber infrastructure, installed 1996 to 1999, connected over 400 faculty and staff and 800 student computers and printers. The fifteen high capacity NT servers and the AS/400 computer, communicating over 100 MB intra-building fiber optic copper cabling backbone delivered the Seminary's technology services. These included administrative information systems, document sharing, printing, email, internet, remote access, web services and the multi-media lab. The fiber optic and much of the Seminary's copper wiring remained in place essentially unchanged for over a ten year period. A review was conducted in 2000 and a decision was made in 2001 to procure and install leading edge converged technology to integrate voice, video and data (VOIP) while also anticipating that wireless connectivity could become a new standard. The CISCO VOIP system was installed at PTS. (See Appendix D, Fiber Plans and Network Equipment End of Life Estimates for Princeton Theological Seminary.)

2008-2019

Goal: Telecommunications network system upgrades to include the new Library and West Windsor construction projects operational and technical changes.

Status: West Windsor – complete, Library in progress

PHASE II – ACADEMIC COMPONENT

2000-2019

Goal: Develop Seminary-wide comprehensive programs on using technology as a means to facilitate the educational, as well as support online learning processes.

Actions: Development of Academic Services includes construction of the new Library/IT multi-media and training facilities; incorporate long range plans of various Seminary groups (IYM, SCVM, Library, etc.) to examine projected impact on educational technology needs and support; continue administrative, faculty and staff training; provide professional development for technical staff; complete second phase of system integration, included moving the administrative software to an appropriate platform, and incorporate web based opportunities in accordance with a newly implemented seminary proposed web development plan.

Status: In Progress

PHASE III – FUNDING

2000-2019

Goal: Review costs of long-term technology integration into budget; research alternative funding options; seek where necessary and cost effective outsourcing and equipment leasing opportunities.

Status: In Progress

ALTERNATIVE FUNDING

Identify possible funding opportunities in educational technology which might generate financial support for institutional academic endeavors, including:

- Foundations: Lilly grants, Luce Foundation
- Donor interest
- Educational teaching and learning facilities and technologically-based educational programs
- NJ Educational Facilities Authority (NJEFA)

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TELECOMMUNICATIONS & NETWORK SUPPORT SERVICES (TNSS)

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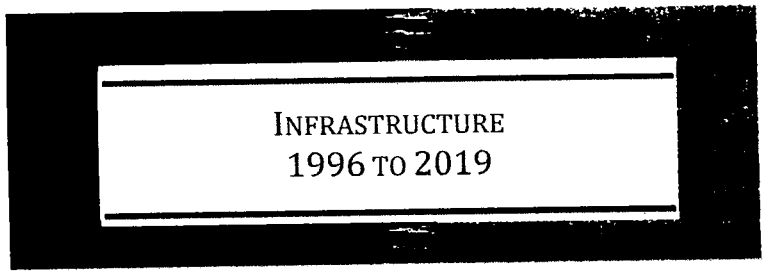

NETWORK AND SERVER INFRASTRUCTURE

OVERVIEW

The PTS network and server infrastructure has been continuously evolving to meet the technology needs of the campus since 1996. The network and server infrastructure consists of four parts:

- Physical Plant – the actual wires, jacks, and fiber within and between buildings
- "The Network" – the devices that provide the electronic signally for moving information over the physical plant
- Servers – the equipment that provides the services delivered over the network
- System Software – The actual applications and services accessed and used by end users

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PHYSICAL PLANT:

The investment made in 1996 to put in a strong copper and fiber optic physical plant has continued to pay off. No significant additional wiring or fiber has been needed to support the needs of the campus. Recent improvements include:

1. Single mode fiber has been added to support 10GbE (10 Gigabit Ethernet).
2. Significant work was done to "reroute" the fiber around Speer library for construction of the new Library.
3. An additional run of fiber to Scheide Hall will complete a true fiber "loop" around the main campus to improve redundancy.
4. The West Windsor fiber plant has been completely redone due to the West Windsor apartment construction project.

Life expectancy of the current fiber and wiring (including planned additions) will remain in service with minimal maintenance for at least the next 20-25 years.

THE NETWORK:

The campus network is now in its third "generation". The original Cabletron network was replaced with a Cisco Voice Over Internet Protocol (VOIP) Network in 2001, and then again replaced with new Cisco equipment during 2010 and 2011. The current network is expected to remain in service for at least 8 years, with minimal changes needed to support continued growth and new usage patterns.

SERVERS:

In the area of server development, a key focus has been on keeping costs low while maintaining "agility" – the ability to respond quickly to technology needs as they arise. The key decision to enable this was a move towards server virtualization and consolidation in 2003. Through virtualization, the Seminary is able to better utilize the hardware it has, and instantly provision for a new telecommunication service without purchasing additional hardware. For illustration, in 1999, the majority of the Seminary network infrastructure ran on 15 physical hardware server boxes. By 2003, it had ballooned to 30 such servers. As of 2011, the virtual network infrastructure of the Seminary entered its fourth generation, and most of the infrastructure is running on ***only*** eight physical boxes, with over 100 independent software driven virtual servers being provisioned on those eight boxes. This equipment has been continually upgraded to increase performance and capacity.

NETWORK DATA STORAGE:

The Seminary's first Storage Area Networking (SAN) infrastructure was implemented in 2003, as a part of its server virtualization and consolidation project. This infrastructure allowed for more flexible and expandable high performance data storage. TNSS is now on its fourth generation of storage infrastructure, having implemented a NEXSAN E60 unit in 2011. The unit features redundant 10Gb iSCSI connections and controllers, and plugs directly into our networking core. The system is currently configured with 60 spindles, with a total of approximately 90 TB (terabytes) of available storage space, in multiple performance tiers. This capacity is expected to be sufficient for production data through 2015, although data needs often grow faster than possible to predict in the long term.

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BUSINESS CONTINUITY / DISASTER RECOVERY:

Disaster Recovery and Preparedness assures that in the event of an emergency or disaster, the resources, training, and necessary steps are in place to assure that lives, property and critical resources are protected, and that a strategy to resume and continue operations is viable. The scope of Disaster Recovery and Preparedness can and should be very broad to assure the safety of people, property and resources.

The Business Continuity / Disaster Recovery Plan for Telecommunications, Network and Support Services is being continually updated, approved and tested. Currently, production data is stored in the Luce Library datacenter. Backups are performed to disk and tape in the Templeton Hall data center. Tapes are then rotated into the vault in the Administration Building. Additional critical data is replicated to the Seminary's West Windsor data center, with a smaller subset also replicated to a contracted facility located in Dallas, TX. Additionally, the West Windsor facility has a small computer lab which has been designated as a disaster recovery center in case of catastrophic damage on the main campus. The current setup allows for rapid recovery of critical systems while keepings costs for idle equipment low. Additionally, a Business Continuity/Disaster Recovery plan is in place and being updated for Educational Media.

COMING TO TERMS WITH THE CLOUD:

OVERVIEW

Cloud computing, announced as the top technology in 2011, is now becoming more and more a factor for educational institutions. There is a current shift where vendors are beginning to move away from solely offering a software solution but are now offering service solutions (Software as a Service). A growing

number of educational resources are no longer offering a local hosting option and as Apple initially phased out the floppy disk and CD-ROM, it is likely that these companies will likewise phase out the option to host locally. Blackboard recently announced that it was no longer focused exclusively on learning management systems but on service solutions. This shift presents opportunities but is also accompanied by many difficulties and stresses the importance of vendor relationships and contract negotiations. What may seem counterintuitive, evaluating cloud computing options is less about focusing on technologies and instead on goals and aims, risk assessment, and vendor management.

OBJECTIVES

1. Develop a campus wide cloud computing strategy.
   - Determine what type of data can be housed on the cloud and assess possible risk.
   - Assess the value of possible cloud computing services from an end-user perspective.

2. Conduct cost benefit analysis of outsourcing via the cloud and on-premises hosting for possible cloud-hosted solutions.

EXISTING QUESTIONS

With library materials shared with Internet Archive and the HathiTrust, how are seminary materials protected, and how can the seminary, namely students and faculty, benefit from increased access to cloud-hosted materials? What emerging cloud-based resources currently exist for academic systems (LMS, library), and what are their benefits over locally hosted solutions in terms of service, access and efficiency?

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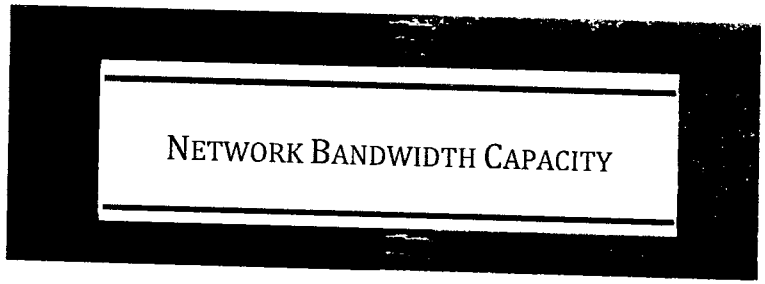

NETWORK BANDWIDTH CAPACITY

OVERVIEW

The Seminary's network is the conduit through which digital content, both administrative and educational, is delivered to our community. In general terms, the bandwidth of our network can be described as the volume of data that can be transmitted in a specific time frame. The Seminary network presently carries data, voice, and video information. Services are expected to continue to grow, placing additional demands for bandwidth on the network. There are six distinct aspects of our network with different bandwidth needs and measurements:

- The Internet connection bandwidth – bandwidth shared among all users for accessing "the web" and other off campus resources
- "Edge" connection bandwidth – the bandwidth available to an individual
- Intra-building – the bandwidth available to an individual building, shared among users of the building
- Core bandwidth – the total bandwidth available to service all buildings
- Server bandwidth – bandwidth available for a server to provide services to all users
- WAN bandwidth – in our case, the bandwidth available to connect the main campus with the West Windsor campus.
- Wireless bandwidth – bandwidth available for wireless use.

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INTERNET CONNECTION BANDWIDTH

Year	Bandwidth	What it allows
1996-2001	4MB SMDS	Supported basic web surfing and email, limited video
2001-2007	6MB DS3 – burstable to [redacted]MB	Web access, video, audio, email, advanced web applications
2007-2010	45MB "Full" DS3	Same as above, with more predictable cost
2010-present	100Mb Ethernet Connection	Better performance, more reliability and survivability, better support of distance learning, HD video
Future	500Mb – 1000Mb Ethernet Connection	Better support for mass video streaming to the world

Edge Connection Bandwidth

Year	Bandwidth	What it allows
1996-2001	10Mb "shared"	Basic network access
2001-2008	100Mb "switched"	Higher speed access, video, more secure, phone service
2008-2019	1000Mb (1Gb)	Higher speed access, HD video, advanced applications, video phones, improved desktop performance

Intra-Building Connection Bandwidth

Year	Bandwidth	What it allows
1996-2001	100Mb "switched"	Basic network access
2001-2008	2Gb – 4Gb	Higher speed access, video, more secure
2008-2019	2Gb-20Gb	Higher speed access, HD video, advanced applications

Core Bandwidth

Year	Bandwidth	What it allows
1996-2001	16Gb	Basic network access
2001-2008	32Gb	Higher speed access, video, more secure
2008-2019	64-256Gb	Higher speed access, HD video, advanced applications

Server Bandwidth

Year	Bandwidth	What it allows
1996-2001	100Mb "switched"	Basic network access
2001-2011	1Gb	Higher speed access, video, more secure
2012-2019	10Gb – 20Gb	Higher speed access, increased wireless speed to 300MB and increased security, HD video, advanced applications

Wan Bandwidth (West Windsor)

Year	Bandwidth	What it allows
1996-2001	1.4Mb DS1 (T1)	Basic network access
2001-2008	45Mb DS3	Higher speed access, video, more secure
2008-2010	100Mb	Higher speed access, HD video, advanced applications, disaster recovery applications
2011-	500Mb	Improved performance, faster backup and disaster recovery capabilities

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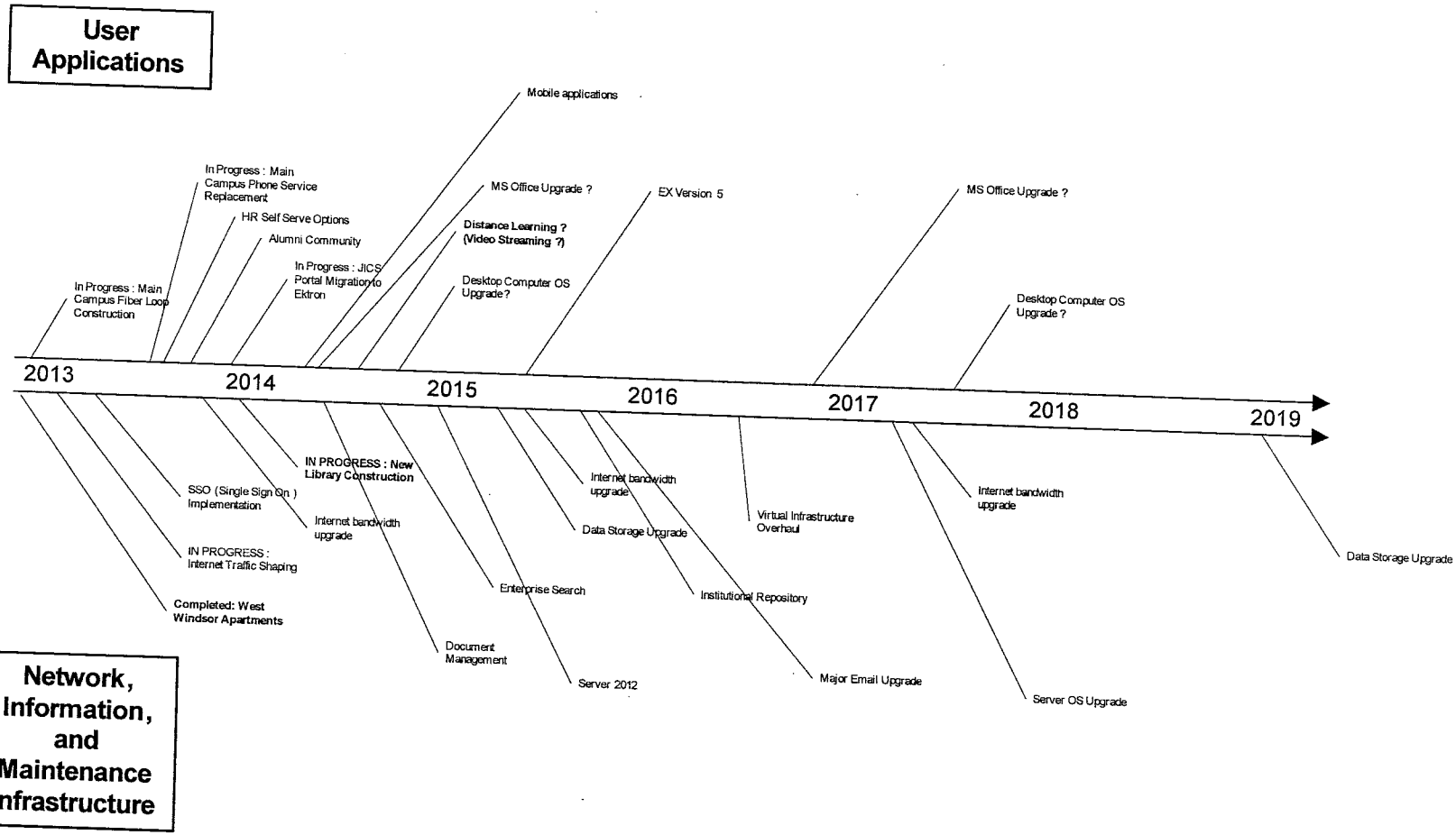
TNSS Project Timeline 2013 to 2019



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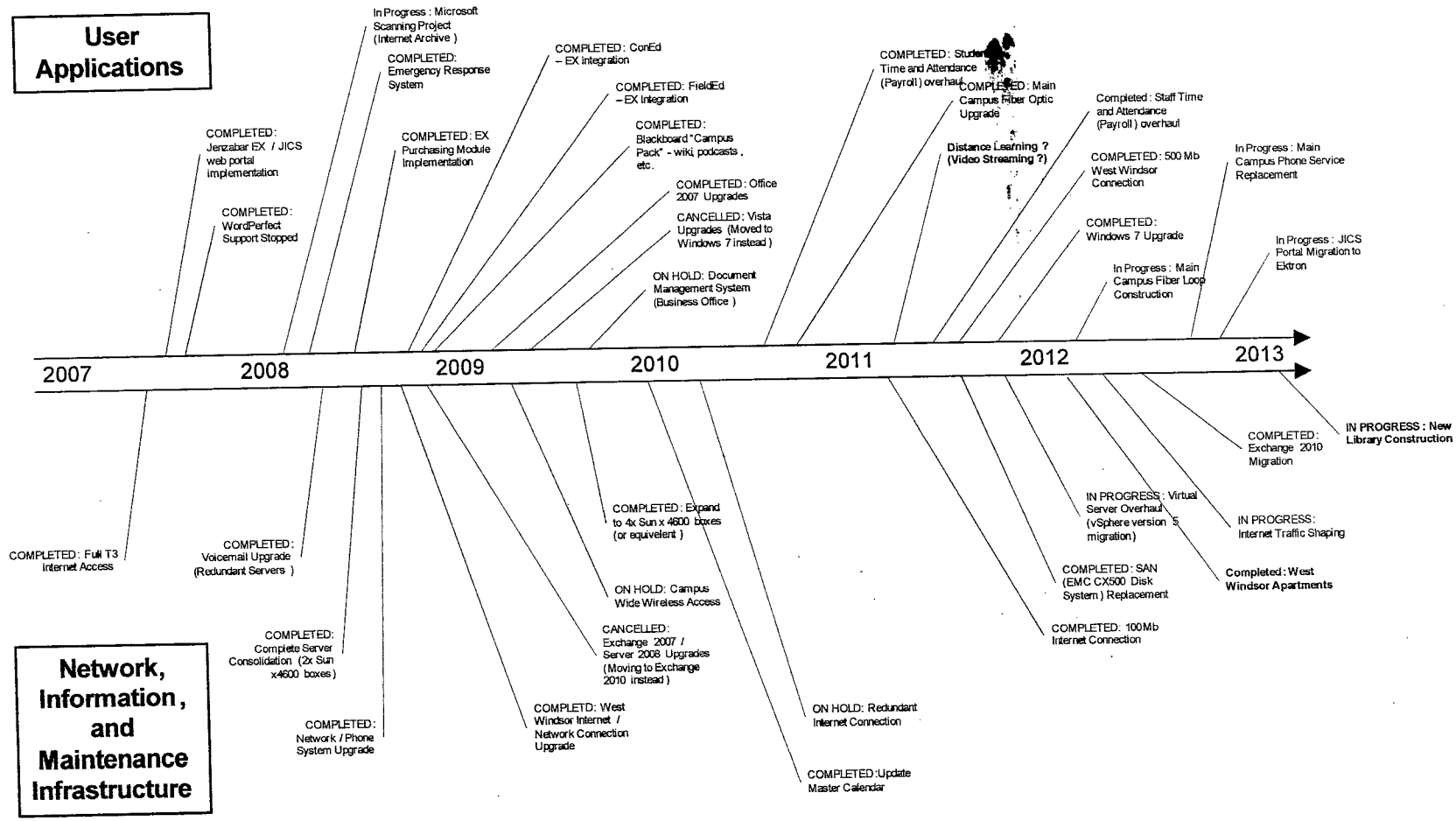
TNSS Project Timeline
2007 to 2013



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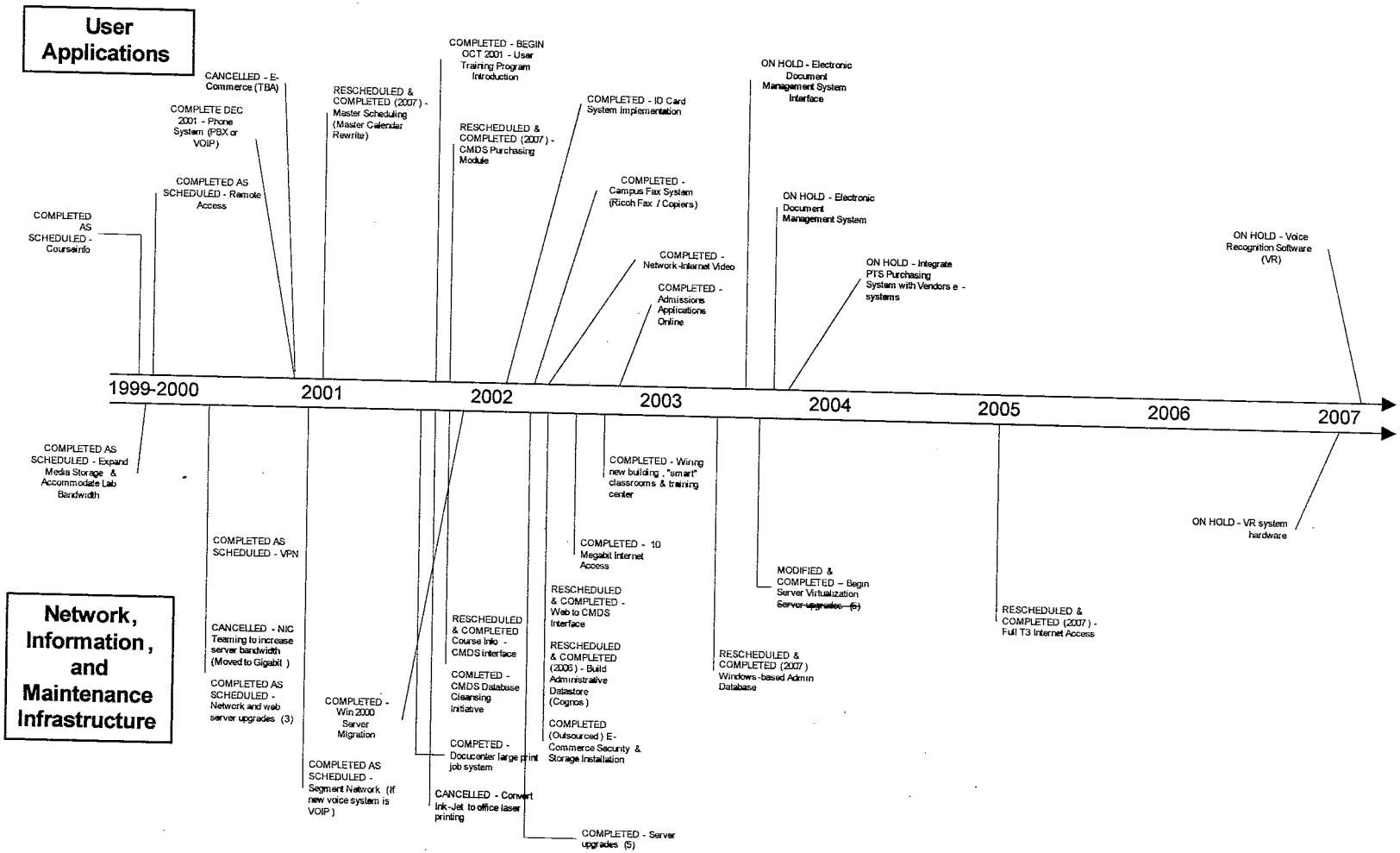
TNSS Project TimeLine
1999 to 2007



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Princeton Theological Seminary

THE LIBRARY

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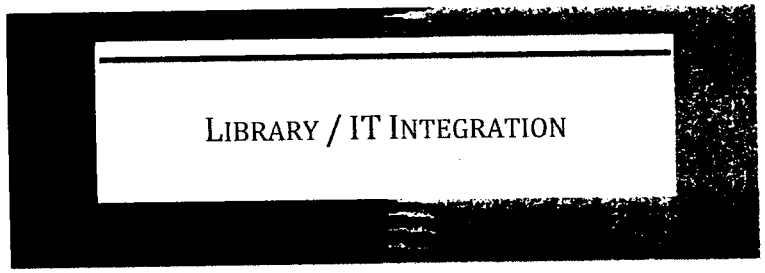

Based on master planning in 2007 and 2008, two priorities emerged: building of the Charlotte Rachel Wilson Apartments in West Windsor and the demolition and renovation of Speer and Luce libraries. The library project was planned in three phases: 1) demolition of Speer library and AV/IT implementation of underground telecommunications wiring utilities project, 2) construction of the new library and 3) renovation of the Luce building.

Prior to June 2012, the Library and the School of Christian Vocation and Ministry's technological systems were not under the jurisdiction of DIT. In June 2012, an Information Technology Integration Policy (see Governance section, page 60) was disseminated by the President to the Seminary community. A direct result of this policy, which called for information technologies across campus to be centralized and integrated with IT, was the formation of a joint Library/IT Task Force on Library Technology Planning (See Appendix C). This Task Force is part of an ongoing effort to provide for integrated technology planning between the Library and IT and will serve to define the Library's technology profile as the Seminary looks ahead over the next 5 years. The charge of the Task Force is to formulate a library technology plan to match the technology requirements and services of the library program with projected budgets covering fiscal years 2013-2018.

Highlights of the new Library technology are on the following pages.

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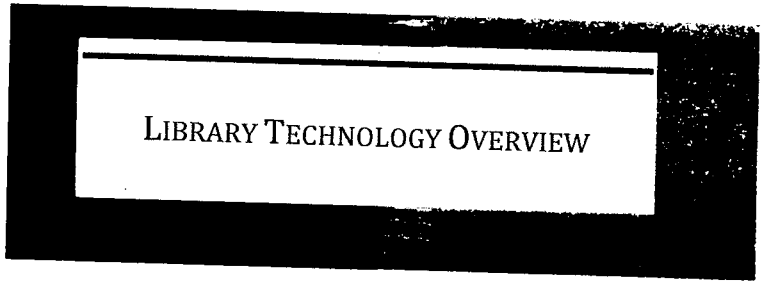

NETWORK WIRING – COPPER

Installation of all network fiber and copper wiring utilized in the new Seminary Library Data Network Center meets the latest Telecommunications Industry Association (TIA) enhanced performance standards for twisted pair cabling systems: Category 6a for Gigabit Ethernet and network. This cable will allow the seminary to run future systems at a faster network speed as edge technology speeds increase. Network data drops have been installed to meet the Seminary's program needs now and well into the future.

A data wiring cable tray has been installed above the ceiling as an alternative to open wiring or electrical conduit systems, to support insulated Data Cables, Fiber Optic and Control Cables for the AV Technology. The system will allow future situations where changes to a wiring system are anticipated, since new cables can be installed by laying them in the tray, instead of pulling them through a pipe

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NETWORK WIRING – FIBER BACKBONE

A Fiber Optic cable backbone has been installed to ensure not only network speeds today but use capacity for future expansion and to support the IT/Data and Audio Video needs of the seminary. The backbone will include 24 individual strands of Multimode and 24 strands of Singlemode fiber. The Multi-mode optical fiber will mostly be used for communications over short distances, such as within the library. The Single-mode optical fiber will be used for communications over long distances. Redundant Single-mode optical fibers have also been installed in two separate pathways across Mercer Street. This will ensure path redundancy should one pathway be severed by a construction mishap.

NETWORK WIRING – COPPER BACKBONE

The Library uses some technologies that require standard based communication connections. A 25 pair copper backbone riser has been installed between all of the communications closets and the main data center that will ensure that these legacy communication devices are supported.

NETWORK INFRASTRUCTURE – DATA NETWORK

The Seminary has chosen Cisco's Catalyst 4900M Switches for the Core backbone of the Seminary campus and the Library connections. There are multiple Cisco Catalyst 4900M in the Seminary data centers at Templeton and Luce Library. Providing multiple cores will ensure network resilience should any data center go off line. This core technology will support 10GB connections to the library network closets today, processes 250-million-packets-per-second (mpps), and allow support for 40GB connections when available in the future.

To support the library the Seminary has chosen the Cisco Catalyst 2960-S edge switches, which provides improved ease of use and sustainability, highly secure business operations, and borderless network capabilities and supports Cisco's innovative architecture called EnergyWise. EnergyWise will reduce the PTS library's energy consumption. When the library is unoccupied the Cisco network switch will power down devices then re-apply the power based on a set pre-timed daily schedule.

Every port in the new Library will support 10/100/1000 edge connectivity and support Power over Ethernet Plus (PoE+) (IEEE 802.3at standard) capabilities, which will allow the Seminary to deploy wireless Access Points (AP), Network Cameras, Network Monitors and support for Thin Client deployments.

Wireless / WiFi

Deployed on campus will be a Wireless LAN Controller (WLC). The LAN controller automates wireless configuration and management functions and allows the Seminary network managers to have the visibility and controls that are needed to cost-effectively manage, secure, and optimize the performance of the Seminary wireless networks. Wireless will be both inside and outside of the new Library.

The WLC will allow for student, faculty and guest efficient roaming capabilities to help ensure a consistent user experience while on campus.

The Seminary's installer has selected Cisco's 3600 Access Points Aironet 3600 Series, which supports a modular platform at a level that offers unparalleled investment protection with future module expansion to support the incoming 802.11ac clients with 870 Mbps rates or comprehensive security and spectrum monitoring and control. These access points will deliver up to three times more coverage for tablets, smartphones, and high-performance laptops.

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IEEE 802.11ac is a wireless computer networking standard of 802.11, currently under development (Draft 3.0[1]), providing high-throughput wireless local area networks on the 5 GHz band.

Standard finalization is anticipated in late 2012, with final 802.11ac Working Group approval in late 2013. It is expected that pre-release products will be available in late 2013/early 2014. When the 802.11ac Standard's finalization is anticipated in late 2013/2014 and products are released, an add on Module could be inserted to support the throughput and up-grade the Controller software.

The Network backbone will already support the 1GB throughput that is required and the Switches have the additional POE power requirements to support this standard. According to a recent technical study, devices with the 802.11ac specification are expected to become common by 2015 with an estimated one billion spread around the world.

Unified Communications

Building on the Seminary's current telephony System, the new Library will be integrated into the Cisco Unified Communication System. The VoIP handsets will be deployed in the new library to allow internal and external communications to the faculty and students. Each of the handsets deployed will allow two way video and audio communications directly from the handsets.

EDUCATIONAL MEDIA SERVICES

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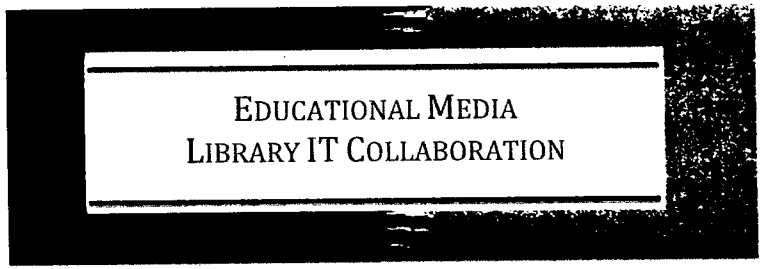

Educational Media provides the PTS campus with a wide variety of AV systems, support services, and media facilities. Services include presentation support; lecture-capture and recording services; audio and videoconferencing; webcasting; live streaming; and production and preservation of original PTS recorded resources. Located on the ground level of Templeton Hall, the Media Center features a combination listening/conference room; production studio which is also equipped as a "smart classroom;" soundproof audio narration booth; recording, editing and encoding stations; resource duplication stations; and campus cable TV system with local access channels. A wide variety of AV systems are also installed throughout most campus buildings, including Stuart Hall, Templeton Hall, Mackay Campus Center, Scheide Hall, Miller Chapel, Erdman Center, and Adams House.

The new Library and renovated Luce Library will significantly expand AV facilities, services and resources in a variety of ways.

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I. **FACILITIES: There will be a significant increase in new spaces with sophisticated A/V systems:**
(See the Library Room Media Equipment Chart following this section.)

A. The new Library and renovated Luce Library will provide the Seminary with up to **19 new spaces** equipped with a wide variety of advanced A/V systems and resources, including:
- Audio, video and lecture-capture recording capabilities
- A variety of conferencing capabilities
- Live streaming as well as on-demand access to media recordings
- A variety of display and projection capabilities, including smart boards and video displays
- Amplification and assisted listening options
- Installed automated video cameras in most rooms

B. While this will increase by over 50% the number of existing A/V spaces on campus, more importantly, it will **exponentially increase the quality and extent of campus A/V options** available.
- Currently on campus:
  - 35 spaces are equipped with some form of A/V technology, mostly for simple presentation
  - Only a few spaces offer the more advanced technologies (such as lecture capture and high-quality video conferencing) that will be prevalent throughout the Libraries
  - While video recording and lecture capture are the fastest growing areas of requested media support, lecture capture is available in only 2 spaces
  - Currently there are installed cameras in only 5 rooms; video in most rooms requires portable cameras
- When all library AV systems are installed, the following capacities will be available:
  - In 10 spaces - video recording and lecture capture with installed cameras

- In 18 spaces - Smart board technologies
- In 10 spaces - high quality video conferencing
- In 19 spaces - Skype conferencing possible

C. It is expected that these spaces will be in great demand, including evenings and weekends.
- This will increase the need for staff support, though the new spaces are designed for maximum efficiency.
- Decisions will be needed concerning prioritization on use of such spaces.

II. SERVICES: Requests for audio/video recording, conferencing, streaming and lecture capture will continue to increase significantly:

1. In addition to design and maintenance of these new spaces requiring various staff support, Media is responsible for all audio and video recordings related to the seminary. These include:
   - All lectures and special campus events, from Presidential lectures to Chapel services
   - Continuing education events and a wide variety of conferences
   - Various classes, including selected lectures; student presentations in speech and preaching classes
   - Promotional and instructional videos for use on the web, including video tours for new students
   - Excerpts of various events for posting on the web
   - A variety of interviews
2. Video conferencing, streaming and lecture-capture currently have costs and technical limitations:
   - Simultaneous lecture capture is limited by the number of Mediasites used.
   - Video streaming is limited to 25 viewers unless outside resources are utilized: A third party vendor called USTREAM is currently being used to help overcome such event streaming limitations on campus. A discussion is in progress with the Business Office regarding the possible increase of third party internet bandwidth, which will impact monthly telecommunications costs for internet bandwidth.
3. Video conferencing, recording, streaming and lecture-capture require cameras, which will be widely available in library spaces but may be limited elsewhere. This will likely increase demand for Library space usage.

III. RESOURCES: Need for easy access to Educational Media recorded resources will continue to increase significantly:

1. Media is responsible for editing, archiving and encoding an extensive library of well over 8000 audio and video recordings, dating back to at least the 1960s.
   - Work began four years ago to encode such recordings for library preservation and user accessibility.
     - All new recordings were encoded immediately as part of the library acquisition process
     - Some of the most requested and valuable recordings were encoded, as time allowed
     - Some requested recordings were encoded "on demand"
   - The remaining recordings are slowly being encoded as time permits, but there is concern that some irreplaceable recordings may be unrecordable due to age.
   - Educational Media has looked into various options to secure a grant for the purpose of purchasing an automated encoding system designed for this purpose and process.
     - The cost for such system is a fraction of the cost for outsourcing the work.
     - It would also allow the office to salvage old recordings given to the Seminary for its library.
   - Media works with other departments to update copyright releases, so that these valuable resources might be made more widely available for:
     - Theological Commons

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- SCVM programs
- Recruitment of new students
- Seminary Relations web pages

2. Efficient and expandable digital storage and archiving will be needed for the growing collection.
3. Thought should be given to recorded student portfolios (sermons, media projects, chapel services, etc.), and how such recordings might be preserved in the library or institutional archival collection.

CONCLUSION

1. **Strategy for meeting increased media support needs for new spaces and systems:**
   - Media will continue to update and post tutorials and user guides online. Its staff will continue to offer tech reviews and one-on-one training sessions to facilitate independent use of basic presentation equipment.
   - Some functions will be programmable and automated:
     - Cameras will have sensors that allow them to follow speakers
     - Lecture-capture will allow selected recordings to be programmed in advance as needed
     - Equipment will be programmed to automatically turn off when not in use
     - AV systems will allow Media to track specific usage for planning purposes
   - Staff will be able to view the new rooms, and remotely assist users as needed.
   - Existing best practices will be adopted and modified as needed for support, e.g.:
     - Currently, Chapel sextons are trained to support basic sound system needs; similary, selected library staff can too be cross-trained in simple skills.
     - Essential staff at the Erdman Center have been trained in the basic use of the A/V systems; similar training will be replicated with selected staff (particularly DIT staff) located in the new Library
     - The Media Kiosk in Stuart Hall is staffed by student Media workers during key hours of operation; additional students will be hired and trained for on-site support at the Library
   - New services will be deployed which may require new fulltime Media hires.
   - Room systems will need to be monitored regularly, with scheduled maintenance.
   - Other main campus spaces will need to be upgraded as soon as possible for technical and educational consistency.
2. **Strategy for support of increased audio/video recording, conferencing, streaming and lecture-capture:**
   - Since events must be scheduled in spaces requiring appropriate equipment, the Library staff should expect requests for such usage.
   - Policies must be prepared in advance regarding AV room equipment/system usages and how access to such rooms will be prioritized.
   - Media staff will need to be adequately trained.
   - Lecture-capture equipment, which can be programmed and automated to some degree, will help facilitate media recordings, especially after hours.
   - Internet bandwidth issues must be resolved for live video streaming of events.
3. **Strategy for maintaining and providing easy access to all recorded resources**
   - Media will seek ways to automate encoding processes to archive resources.
   - Media plans to work with the library regarding the addition of digital recordings to Theological Commons.
   - Media will coordinate with departments to identify resources held by other departments, and to create a common repository of all PTS recordings to prevent loss, and to improve common access.

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LIBRARY ROOM MEDIA EQUIPMENT CHART

Room Name	Room No.	Occ.	CD/ DVD	Doc. Cam.	Video [illegible]	Smart [illegible]	Video [illegible]	Screen	Shades	Recording*			Mics***		Conferencing			Computer	Network [illegible]	Cable [illegible]	Hearing Impaired	Food Allowed
										audio	video	digital cam	wired	wireless	[illegible]	video	share					
New Library:																						
Atrium	0001	374	X	X	X					X	X	X			X	X	X	X	X	X		
Seminar Room	0060	18	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	
Entrance	1003				X					X	X	X	X	X	X	X	PV	X	X	X	X	
Meeting Room	1010	19	X	X	X	X					P											
Assembly Room	1012	100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
AV Control Room	1013									X	X	X	X	X	X	X	X	X	X	X	X	
Cafe	1020	26			X																	
Seminar Room	1060	18	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	
[illegible]																						
Seminar Room	2060	18	X	X	X	X												X	X	X	X	
Collaborative Study	3026	7	X	X	X	X							X	X	X	X	X	X	X	X		
[illegible]													X		X		X	X	X	X	X	
Seminar Room	3060	18	X	X	X	X																
Multipurpose Room	3090	7	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	
Multipurpose Room	3094	7	X	X	X	X				P					X		PV	X	X	X		
Faculty Lounge	3095	15			X					P					X		PV	X	X	X		
Vera Library:																						
Corridor	0100				X																	
Multipurpose Room	0101	18	X	X	X	X																
TPP Room	2130	21	X	X	X	X	X			X				X	X		PV	X	X	X		
Multipurpose Room	2131	12	X	X	X	X				P					X		PV	X	X	X		
Multipurpose Room	2132	9	X	X	X	X				P					X		PV	X	X	X		
Multipurpose Room	2133	11	X	X	X	X				P					X		PV	X	X	X		
Multipurpose Room	2134	11	X	X	X	X				P					X		PV	X	X	X		
Training Room	3131	19	X	X		X				P					X		PV	X	X	X		
Lounge ["Reigner Reading Room"]	3177	6	X		X					X	X	X	X	X	X	X	X	X	X	X		
Other:																						
Circulation Desk	1040	6			X																	

V/K = video display + kiosk; P = Portable, PV = requires portable cameras for SKYPE

*Note: rooms greyed out have been deferred

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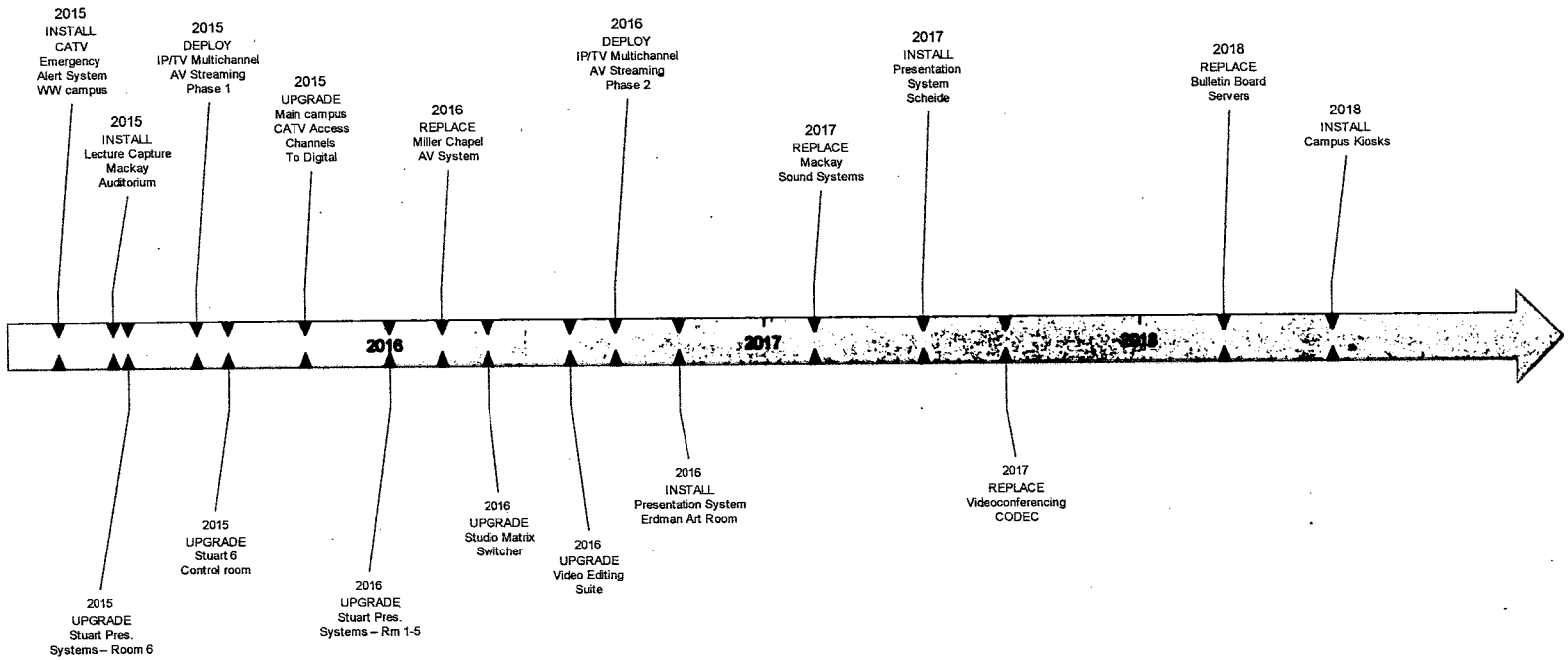
EDUCATIONAL MEDIA PROJECT TIMELINE
2015 TO 2018



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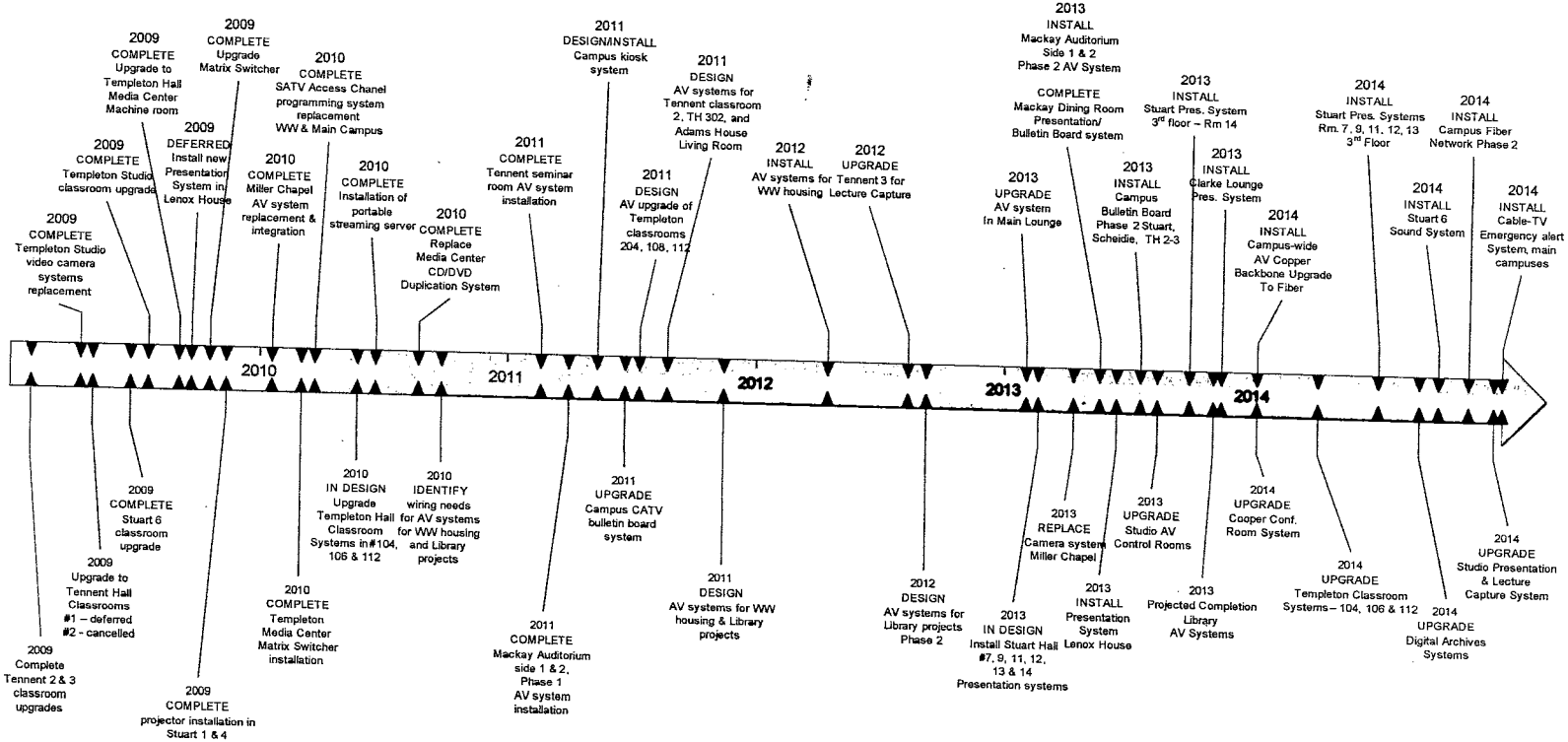
EDUCATIONAL MEDIA PROJECT TIMELINE
2009 TO 2014



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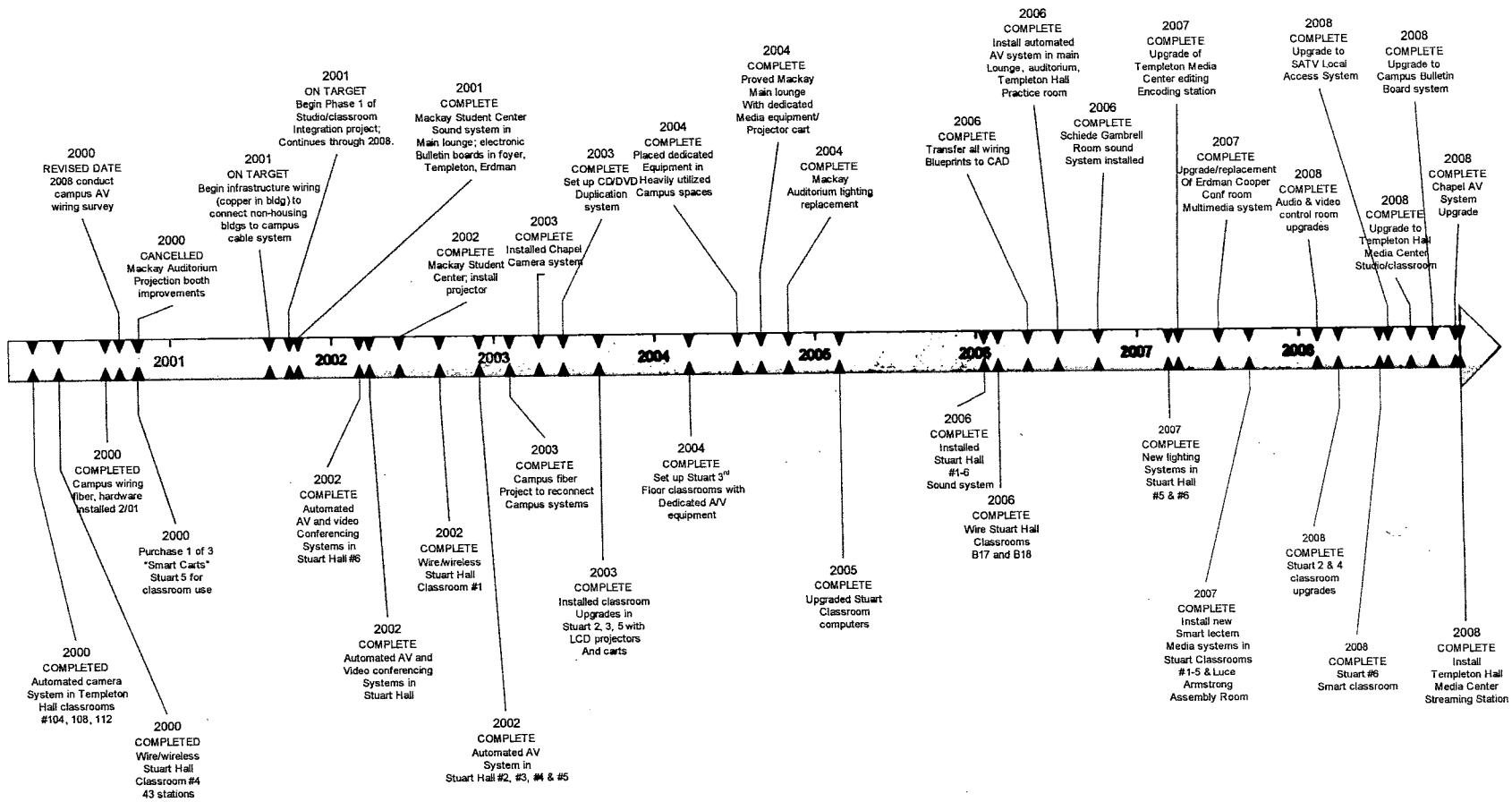
EDUCATIONAL MEDIA PROJECT TIMELINE
2000 TO 2008



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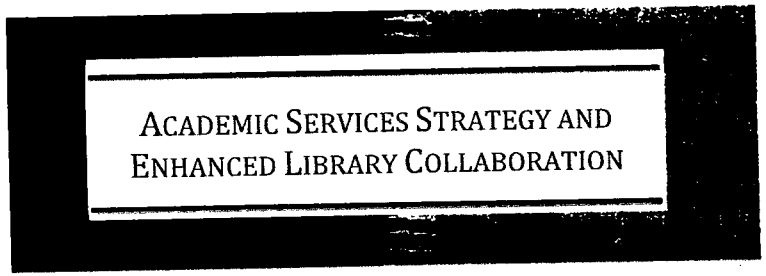
ACADEMIC SERVICES CENTER (ASC)



MISSION STATEMENT

The mission of Academic Computing Services is to promote the joy of discovery, the love of teaching and the fostering of curiosity in research through information technology.

OVERVIEW

Today's education environment is undergoing a formative shift in the delivery of information technology resources. Historically the role of IT has predominantly been that of ensuring ample access to computing resources (hardware and software), secure networks, proper bandwidth, and disaster recovery planning, especially for business purposes. With the advances of information technology at an ever increasing pace, IT can now be, as claimed by Diana Oblinger, a "game changer." This can have a variety of meanings but what it means here is that while technology remains critical to the business side of education institutions, more than ever it also provides a vast array of resources and opportunities for the core business of institutions of higher education – namely teaching, learning and research. Effectively leveraged, IT provides the tools and knowledge to create new possibilities for scholarly collaboration, support services for research, connected infrastructure for intra- and inter-institutional repositories, and outreach beyond the institution's walls. To live into such an opportunity requires a seminary wide collaborative effort directed by astute policies and led by visionary administrators. The collaborative endeavors of the library and IT must continue to flourish and extend across campus. The outline below sketches out five key areas to focus on in the next four years to create a vibrant environment for conducting research and training tomorrow's pastors and scholars.

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TEACHING, LEARNING AND RESEARCH

OVERVIEW OF RECENT DEVELOPMENTS

Teaching, learning and research – the core of seminary life – is radically being refashioned by information technology. New educational initiatives, often external to higher education institutions, provide insight into how to better craft an educational experience. Open Educational Resources (OER) continue to rise in popularity as access to these materials are accessible to anyone anywhere. The Theological Commons, in its initial stage, is a bold attempt by the library to make materials accessible to others, yet what remains in question is what are other materials deemed crucial by outside scholars, alums, clergy and inquiring lay people. A single searchable interface to return results that reside on different services is pivotal. For example, a search for "Thomas Gillespie" would return sermons and lectures he delivered on campus, books and articles, course syllabi and materials, and administrative papers for those given access allowing for a complete overview of his life and work. Federated search tools, already prominent in libraries, allow for more powerful searching and an improved search experience for users. Second, developments in the textbook industry, one with minor influence on the seminary, provide insight to new

forms of content delivery. Historically companies like McGraw Hill and Pearson were publishers in a strict sense – they published books and sold those to students. That is being reshaped as they now create learning networks. By merging the content of textbooks within a networked space, students now have the ability to have an interactive experience with the text – necessary when viewing anatomical drawings or millennia old scrolls, for example. Three specific initiatives provide room for enhanced library partnerships. These are not exclusive but highlighted due to the fact that they would have a major impact on the seminary's campus.

OBJECTIVES

1. Expand the Theological Commons
   - Move beyond print material by creating a program for born-digital scholarly projects.
     - Identify and recruit faculty who have an interest in digital publishing.
     - Reconfigure the current digital projects team in order to broaden the scope of their work including faculty research projects to create born digital content.
     - Index projects in library catalogue and/or Theological Commons
     - Identify institutional partners (regionally, denominationally, globally) to increase the scope of the Commons.
   - Expand access to PTS and PTS-affiliated publications. Already the PTS Bulletin is freely available as part of the Library's digital collections but the exploration into offering other publications ranging from pre-print versions of faculty journal articles to key campus lectures would enhance the offerings of the Commons.

2. Create a true institutional repository
   - Course syllabi, lectures and materials
   - Campus lectures/events
   - Administrative records
   - Integrate LMS

   ** A true repository would include both an inventory of various academic and educational materials from academic departments, the library and SCVM as well as the administrative and business records, which provide necessary insight into the history of the seminary. Access to materials would not be universal as some administrative records would be appropriately deemed as too sensitive for public and some academic materials would encounter copyright restrictions. However, collecting and organizing the seminary's history into a single collection, or at least having those materials accessible by a single search interface with proper restrictions in place, creates the opportunity to construct a comprehensive history of the seminary.

3. Time, Place and Presence Room
   - Work with faculty to develop two initial projects – maps and scrolls
   - Identify programming skills required and possible shared staffing with library's digital projects team.
   - Suitable for teaching seminars, open to general public and encourage inquisitive discovery.
   - Projects to be released online and incorporated into the Theological Commons to provide born digital content.

4. The Role of Large Data and Statistical Analytics in the Humanities
   - Often analysis of this type depends on sharing resources with other institutions but it is possible to use R, a statistical analysis and visualization software, for analysis of texts.

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- Need to outline possible projects the library is considering.
- Identify training and support needs and software requirements.

5. Learning Environments
   - Ensure access to academic computing environments and workstations across campus, including emerging audio visual and web-based tools.
   - Provide supreme support and training for software critical to faculty and students' academic pursuits.

Existing Questions

The future of distance education remains a question yet progress in this arena continues to be critical. The current use of the seminary's LMS is for web-facilitated courses, but the increased popularity of open online courses offered by Coursera and Audacity among others signal a need to define how PTS plans to offer its various educational opportunities in the future. At this critical juncture it is important to develop a more cohesive relationship with the Academic Dean as so many of these developments have a direct impact on faculty teaching and research. As has been noted previously by earlier reports and audits, faculty often share an uncertainness as to the benefits of emerging IT advances leading to support conducted on an ad-hoc basis with those faculty who desire to explore IT implications for teaching or research. Clearer and more regular lines of communication with the Academic Dean would allow for increased feedback from faculty as well as the opportunity to streamline IT communication as to its intentions, its benefits and eventually to developing structures and programs that utilize information technology to achieve the goals of the seminary. Folded into the conversation with the Academic Dean includes improved communication with SCVM as its continuing education opportunities evolve from solely on-campus programs to hybrid and fully online initiatives.

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Embracing the New IT Professional

Overview

Technology is ever changing – new programs, new programming languages, etc. Attempts to precisely articulate the landscape of the future are well intentioned but the specifics often remain vague. What we know for certain is that current structures must be agile as adaptation will be a requisite and promote a culture of experimentation in order to adequately test emerging tools and respond to users' needs.

Objectives

1. New strategies for staff development to that of "service broker," which often requires non-technical skills necessary to thrive in today's environment ranging from contract negotiations to customer service skills.
   - Project management
     - Implement consistent and shared project sheets for department heads to ensure collaboration among departments.
   - Knowledge management
     - Create a knowledge base for users to search for common questions (connect to H drive, download EndNote, etc.)
   - Relations management
     - Develop a marketing strategy, particularly to faculty and PhD students, to promote scholarly possibilities. Requires the development of sample projects.
2. Defining/redefining staff roles to focus on users – primarily faculty and students
   - Example: library/IT service desk.
   - Conduct customer service training for all DIT and Library employees and set expectations to be incorporated into annual performance reviews.

Existing Questions

The emergence of the soon-to-be instituted library Service Desk that combines library and DIT support serves as a model to explore other areas on campus that can benefit from similar arrangements, some of which may be temporary or event based. For example, do large events (IYM, Alumni reunions, bicentennial events) warrant the location of IT support services to closer proximity? There is a need to outline parameters of support for guests and determine what level of support to offer.

Consumerization/Customization

Overview

Students and faculty alike often bring their own personal computing environments (often a combination of computers, tablets and smartphones) and expect to use these for academic work. While campus computer labs remain important and a crucial component of DIT's service delivery, they are no longer the primary computing environment for many students. Members of the faculty are already expressing the desire, and this number will only continue to rise, to project from their tablet devices. Not only is there a proliferation of devices on the campus network, but users expect to use them for academic pursuits. Thus, ASC must adapt to:

- Bring your own device (BYOD) user expectation of support services which must match this changing environment.
- Leverage not prescribe personal devices.
- Devise strategies to support, train and teach with an increasing amount of personal devices.

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Existing Questions

How best to transition IT services from tightly controlled IT issued environments to more open environments that include user initiated hardware and software? How to identify potential security risks to the network from the proliferation of devices on it?

Governance

Overview

With the president's recent dissemination of Information Technology polices, it could appear that this issue is resolved, but it remains necessary to develop a framework for IT decision making for the library. Historically, much of the library's use of information technology resources has been self-directed; Voyager and MarkLogic being the primary examples. As the library's profile will undoubtedly grow with the opening of the new building in 2013, IT decision-making processes need to be better established to ensure fiscal responsibility, effective delivery of resources and long term planning for library technology. It is important to note that this process is already underway, yet without a clear sustainable technology plan, the library and IT could greater benefit by addressing specific categories of information technology decisions and who should participate in those conversations. Also critical to note is the need for the library to release its own strategic plan outlining its goals and objectives for the next four to five years. Yet such internal planning to be done by the library does not negate the present need to assess current IT systems and services. A review of such systems, again notably Voyager and MarkLogic, would be reasonable starting points along with the seminary's Learning Management System, currently Blackboard. Reviewing these IT systems simultaneously allows for possible integration and first steps leading to an institutional wide repository.

- Technology Planning Process
  - Assess current systems
    - Voyager ILS
    - MarkLogic
    - E-Reserves
    - Mobile
    - External Databases
    - Portal/Repository
  - Assess alternatives
    - ILS systems (LibraryWord, Koha)
    - Discovery interfaces (Blacklight)
    - E-Reserves

As the library undergoes its own technology planning process, the same must eventually be done with SCVM. Current collaboration on SCVM's new Lilly funded programming is a starting point, and at the conclusion of the first year, it will be necessary to assess the delivery and efficacy of utilized information technologies. The process to align SCVM objectives with mirrored library processes should position IT to benefit from the library's strategic technological initiative/plan.

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EXISTING QUESTIONS

DIT integration policies are critical to erode the long established "silos" within the seminary environment but there is a need to transition from the policies statement to implemented action. The newly existing collaborative spirit between the library and DIT can serve as a model to engage SCVM's programming as well.

ACADEMIC COMPUTING SERVICES TRAINING AND SUPPORT

Academic Computing Services supports the academic endeavors of the seminary community by providing instruction, support and guidance on how best to use technology for teaching, learning and research. ACS provides academic software (BibleWorks, EndNote and administers the seminary's learning management system (Blackboard). DIT trains and supports office and productivity software (Microsoft Office and Adobe products), oversees the Media Lab, a fully staffed, client supported facility for exploring multi and new media tools, and DIT supports academic departmental websites. The goal is for ACS technology to enable greater efficiency and use as well as further the curiosity of those engaged in the process of learning and discovery.

One of the primary aims of Academic Computing Services is to offer a robust training program that introduces and supports academic and other specialized appropriate software vital to students, faculty and staff. Below is an overview of training classes offered during the past year:

Courses for students, faculty and staff

- Adobe PDFs - using free-ad in to convert files
- BibleWorks for Beginners
- EndNote: The Basics
- Faculty Web Pages: Designing on Ektron
- MS Excel 2010: Essentials
- MS Excel: Sorting and Filtering Data
- MS PowerPoint: Essentials
- MS Word: Tips & Tricks for increasing productivity
- MS Word: Advanced Formatting Techniques
- MS Word 2007: Features/Essentials
- Windows 7 File Organization Tips
- Blackboard: New to Blackboard
- BibleWorks: Intermediate
- EndNote: Beyond the Basics
- Faculty Web Pages: Using OpenScholar
- MS Excel: Basic Budgeting Tips
- MS Excel: Using Formulas in Workbooks
- MS PowerPoint 2010: Preparing Your Presentation for Delivery
- MS Word: Using Styles to format papers
- MS Word: Resume Formatting Tips
- Outlook Webmail: Tips & Tricks
- Zotero: Getting Started with Zotero

In addition to formal classes, Academic Computing Services partners each semester with the library to offer the following Research Resources classes:

- Advanced online catalog searching; introduction to searching EBSCO databases, with particular attention paid to ATLA and Academic Search Premier.
- Introduction to JSTOR, ProQuest Religion, Religion & Theological Abstracts.
- Overview of Bible Works.
- Overview of reference e-books including Cambridge, Oxford, and Routledge publications.

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Some faculty members place such importance on particular specialized software tools that they request a demonstration or instructional session during classtime. Notable examples from Fall 2012 include:

- Introductory BibleWorks for Introduction to New Testament Exegesis
- Introductory BibleWorks and Accordance for Introductory Biblical Hebrew
- NVivo training and support for Dr. Kenda Dean Lilly funded research project

Technical support and personalized training is also available with advanced scheduling of the Academic Computing Services staff. ACS' trainer regularly offers one-on-one "Ask the Trainer" sessions. Additionally, both faculty and students are encouraged to seek Media Lab support from the Media Lab Coordinator.

Training and Support Beyond the Seminary

With the expanded mission of the new library viewed as a "library for the world," ACS is evaluating the opportunity of offering similar classes beyond the seminary in support of the church. ASC is communicating with the Administrative Personnel Association of the Presbyterian Church. With the upcoming revamped training room to be located in the newly renovated Luce, ASC is exploring opportunities to remotely train church administrators/staff secretaries. The new training room also presents the possibility of being an accredited test center. See the Training Program Development proposal (Appendix E) for more on these potential partners.

CONCLUSION

The strengthened structure of Academic Services Center (ASC) and recent technological infrastructure advances, notably the new data center and introduction of audio-visual resources in the new library, allow for the improved delivery of key services to support teaching, learning and research. Thus, ASC intends to improve its communication efforts with the Academic Dean, faculty as a whole, and SCVM to fully carry out its responsibilities. As first noted in the 2009 self study, faculty and senior administration must adopt an IT vision that fits the pedagogical aims of the seminary. Such a vision extends to the library and SCVM and its final formation is dependent upon good faith collaboration between all parties noted herein. By aligning the objectives of all academic endeavors with those of the Office of Academic Affairs and the School for Christian Vocation and Mission, DIT's Academic Services Center (ASC) will be able to carry out and implement a vision appropriate for the twenty-first century.

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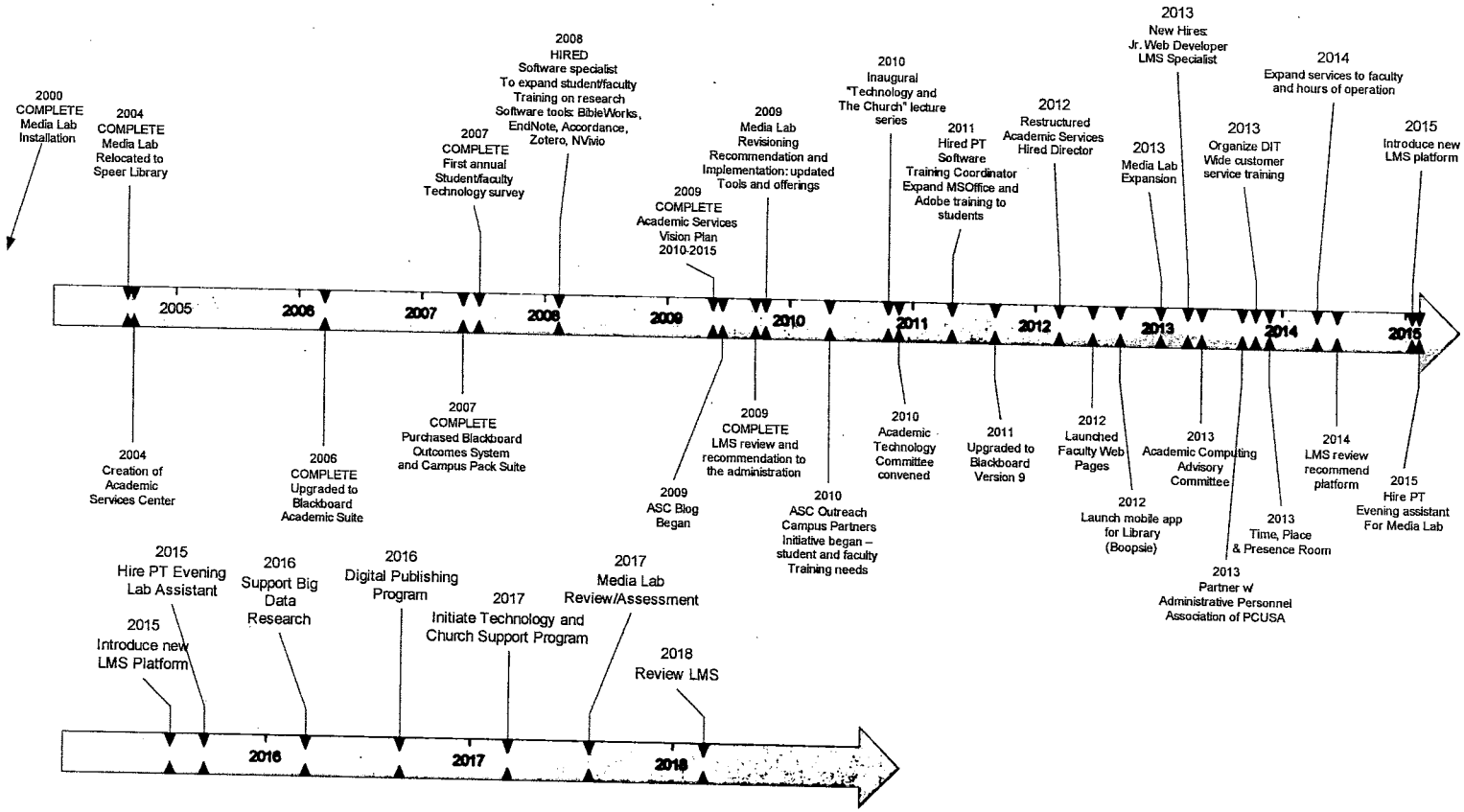
ACADEMIC SERVICES PROJECT TIMELINE 2004 TO 2018



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WEB SERVICES

Web Services Overview

Web Services Administration

The staff of Web Services consist of a Web Master and Web Developer who operate in a variety of capacities developing and maintaining the Seminary's web systems and supporting its constituencies. Often this work advances seminary or departmental technology initiatives, such as developing new processes to handle online web forms. However, at other times, Web Services work involves managing existing web projects.

The present opportunity for Web Services involves designing a web system for developing and managing the burgeoning number of web projects in service of the seminary offices while continuing to introduce new web-oriented initiatives and solutions. One consideration for achieving this objective is to create a content driven distributed authoring environment. Given proper training and in observance of style guidelines, designated personnel of the respective seminary departments can be empowered to provide editorial maintenance of their own web content.

The Web Team

The Web Services team creates and enhances websites that are essential for conveying Seminary projects. They contribute their expertise in project management, web design, information architecture, usability and accessibility standards, and web site development. The team's main area of focus includes: upholding the technical requirements for the Seminary's websites and instituting the Ektron web content management system integration.

The Web Environment

The environment for online web information at Princeton Theological Seminary can be divided into three categories: general, administrative, and academic. In 2005, the Seminary launched its first education portal maintained through the Jenzabar Internet Campus Solution (JICS) gateway. In 2007, an update to the Jenzabar EX administrative software prompted an updated redesign of the JICS portal. Jenzabar is the software vendor for the Seminary's administrative and student information system and the Jenzabar Internet Campus Solution (JICS) system, which facilitates a continuous flow of mission-critical web information between departments and delivers timely information to drive strategic and tactical business/administrative decisions. The seminary intranet offers non-public internal information and is restricted to students, faculty and seminary employees. A valid network logon is required to access the information on the intranet. Some of the information offered on the site are scheduled campus events, a directory of staff and students, and seminary policy/business information.

The General (External) Web Site

Princeton Theological Seminary's General Web Site allows the Seminary to generate official business content to a public (non-specific) audience and convey the formal tone of the Seminary.

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The Administrative Web Site (JICS Portal)

The Seminary's Administrative Web Site enables the Seminary to allow for individual web customization and personalization of pages and sites. Additionally it leverages the use of the institution's Enterprise Resource Planning (ERP) data, assist in building relationships with individual groups and allows for the upgrade of the latest software. Departmental business information may be gathered from this site to support the interest of the general public, however its main purpose is to disseminate information to the Seminary's internal community.

The Academic Resources Web Site (Blackboard) – Internal

The Seminary's Academic Resources Web Site enables the Seminary to host course and community information to students and faculty, individuals and community groups, which includes: institutional discussion boards, and file exchange areas.

Logical Design and Specialized Technology

Princeton Theological Seminary Online Content Approach:

The Seminary's online content approach can be divided into three distinct types which determine where information is accessed and administered. The three types are portal restricted, portal public (non-restricted), and public (ptsem.edu only).

The type of online information/data dictates where the content is accessed and administered and requires specific security and administrative procedures to allow content accessibility. Online information is categorized by content type, not department or area. For example: HR has public information (employment), public and private (Aetna) and portal private (employee records).

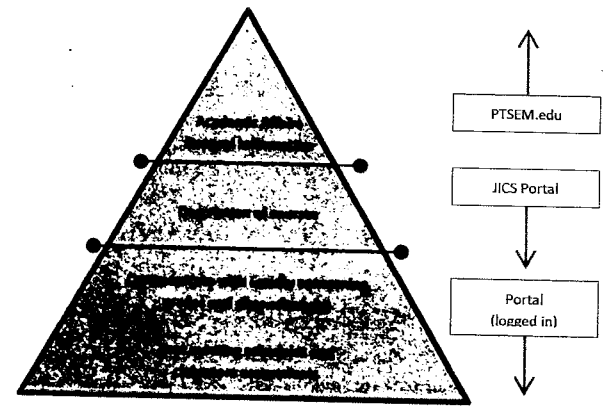


Illustration: JICS Website and JICS Portal Content Approach

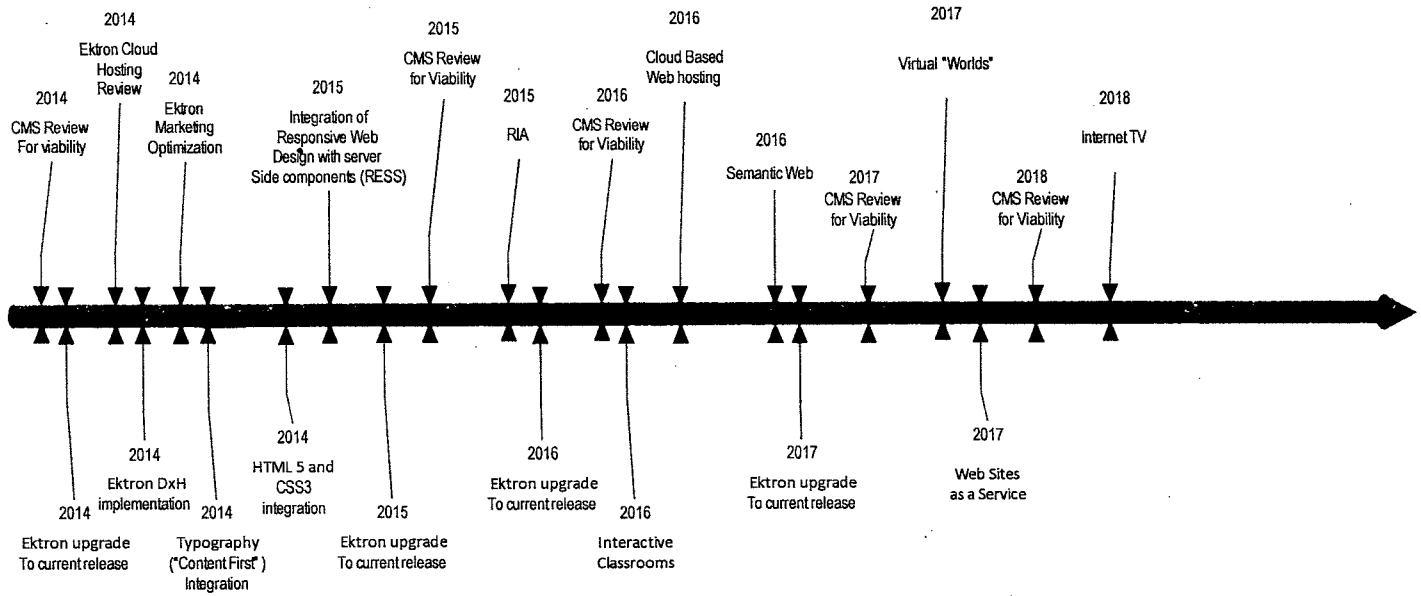
Categorizing and Maintenance of Online Content

No matter what type of content; each seminary department is charged with identifying appropriate content and context managers to ensure that web content is maintained in a timely manner and collaboration with Web Services to identify and categorize content properly occurs.

A proposed Web Services Reorganization initiative, which follows, describes the proposed web plan to coordinate a more effective web strategy to meet current web requirements for institutional operational support.

JA0572

Web Services Project TimeLine
2014 to 2018



Static Web Development

Static/Hybrid Web Development

Dynamic Web Development

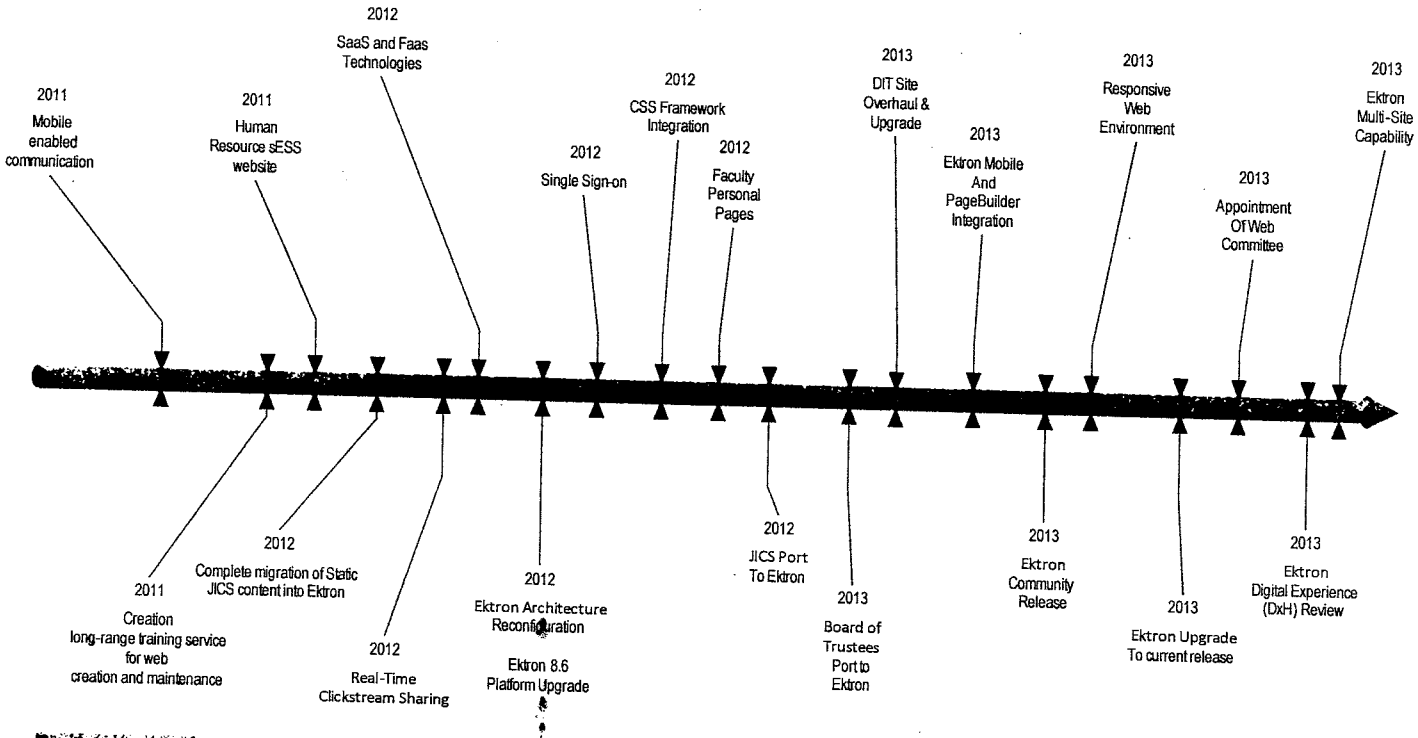
Interactive Web Development

Static - information or 'code' that creates the website doesn 't change.

Web Hybrid - A Web site that has functions that allows users to interact to the website but is not connected to the Seminary database stru cture. Online forms, streaming media are examples of Hybrid websites .**Dynamic** means that the data or content can change 'dynamically'. The content is fed from a database or Content Management System (CMS) so when the data is updated , the text and images on the website are also updated .

JA0573

WEB SERVICES PROJECT TIMELINE
2011 TO 2013



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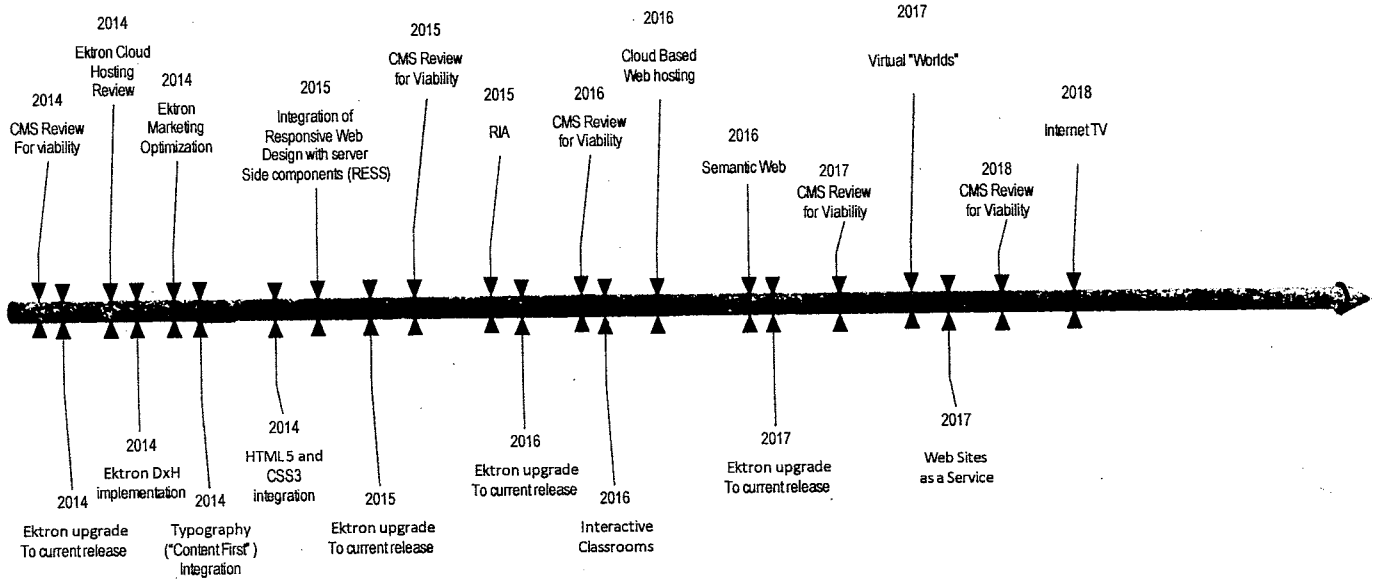
JA0574

WEB SERVICES PROJECT TIMELINE
1999 TO 2010



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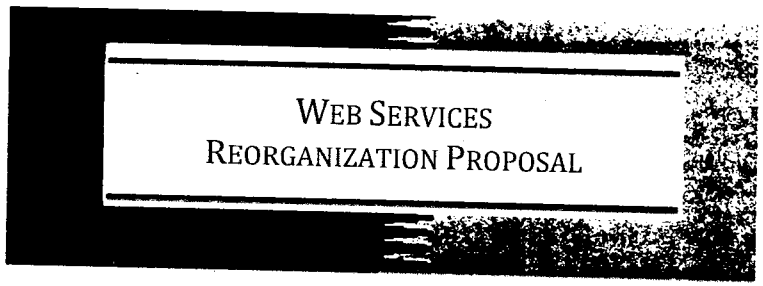

1. PURPOSE

The purpose of this document is to present a vision for the architecture and capabilities of PTS's official web sites and identify the organization, staffing and division of responsibilities necessary to achieve the goals of the Web Services Reorganization.

2. VISION

The vision of the Web Services Reorganization is for PTS to fine tune and present a polished, professional, comprehensive, state-of-the-art web presence that effectively markets to external audiences and provides intuitive access to academic and business information and applications for students, faculty, staff, alums and other external visitors who interact with the PTS website. To achieve this vision PTS currently offers two primary web sites to address the needs of these two very distinct audiences; the internet focused PTSEM.EDU web site, (http://www.ptsem.edu), and the intra-net Princeton Seminary, Jenzabar Internet Campus Solution (JICS) web- portal.

Recent redesign of the current web platform has allowed for optimized utilization of a newly initiated key word indexed search engine, social network and web page edit customization features, as well as, increased opportunity for project and document management use. Continued efforts for web use efficiency will include development of logical navigational paths and single sign on capability. To ensure that the Seminary's web resources and services are well planned, responsive, reliable, and appropriately supported to meet Seminary requirements, further implementation of technical and managerial suggestions resulting from the February 2010 Kaludis Consulting web audit review will continue.

Emphasis will be on strengthening the coordination of intranet departmental web design, content development and management of the Seminary's over all represented web presence.

The aforementioned web presence can only exist through strengthened technical staff services. Such technical planned services provided by the support organization should include:

A. Seminary and departmental web design and development
B. Seminary and departmental programming of dynamic web based software
C. Content management and maintenance services
D. Graphic design (for web) services
E. Search Engine registration and results monitoring

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F. Web Statistics reporting
G. Infrastructure support
H. Support for non-traditional browsing tools, including wireless devices.
I. Mobile Application technical development, programming and support

3. Current Web Architectural concern

The distribution of various seminary user business applications and information, found on multiple web sites has caused user confusion on where one must go to access such data. Under such circumstances an external user, a non PTS intra-net user, may access seminary information or business applications which may not be intended for their use. The newly installed Ektron platform allows for housing both public and private web information on a single platform. It also allows for cross integrative link to the JICS administrative portal as is currently practiced. A seminary departmental review of all data to determine its public/private use is critical to where information should be stored, accessed and managed. Given the capability to have either, on the current Ektron platform; a determination on the use of such information which could be appropriately placed either publicly or privately, would greatly enhance the possibility to attain the goal of the web services area to provide seminary internal users to have single sign-on capability.

4. Road Map

The Road Map to achieve the vision outlined above involves extensive work on PTSEM.EDU,JICS, various seminary departmental web sites and all ancillary services that support and monitor web organizational effectiveness. To ensure that the proposed web site infrastructural architecture has a scalable, extensible and dependable technical foundation, staff assistance, coordination planning and possible consultative services, where necessary, are needed. The following categorized actions are required to achieve the vision:

JA0577

Organization

A. Establish the Web Services Office.
B. Reorganize management and hire Academic Computing Services Junior Web Developer.
C. Identify the comprehensive list of web contacts throughout the Seminary community.
D. Establish the Web Strategy Committee as a Seminary standing committee, with one of its first business items to continue discussion of, produce and/or endorse the web marketing strategy of the prior web committee.
E. Develop and document the coordination and communication processes between the Web Strategy Committee, Web Services Office and departmental Web Contacts.
F. Identify oversight authority and responsibility for prioritizing Web Services Office work with regard to PTSEM.EDU, Portal and Departmental/Organizational design, development and maintenance activities.

Infrastructure

A. Create faculty PTSEM.edu web site for personal web sites.
B. Create a development PTS.EDU site and implement a code, test, promote development approach.
C. Strengthen policies and procedures for web backup and recovery scenarios.

D. Establish a clustered web site platform to provide failover protection and load balancing. Initial evaluation and design of clustered environment will be accomplished with the assistance of a consultant.
E. Upgrade web platforms to Ektron 8.6 to take advantage of faster page rendering, social networking and tools.
F. Establish fail over protection for production database server.

WEB SITES

A. Coordinate with departmental web representatives, content and context managers, the development of a prioritized list of characteristics or topics for which PTS should be known (PTS brand). This list will evolve over time as new programs are introduced or other significant changes occur at PTS. Consequently, this evaluation must reoccur to keep the web site up-to-date.
B. Design PTS.EDU as an externally focused marketing tool that specifically targets the PTS characteristics or brand in the web marketing strategy.
C. Complete Content Inventory to identify whether existing seminary content and business applications should be accessed internally, externally, or both. The Content Inventory is an effort to comprehensively examine all web-based applications, pages, forms, etc. which currently exists at PTS. As part of the content inventory, establish the need to decide which high profile information, etc., should appear in portal channels and which information should be sought by other portal or web means.
D. Work with departmental web contacts to establish requirements for the development of requested short term, web special interest or event needs.

5. WEB SERVICES OFFICE

As illustrated in the Web Services organization charts following this section, the Web Services Office (WSO) is one component of the overall PTS Web Support Organization. The WSO would manage and support, PTS's web environment based on the guidelines set forth by the Department of Information Technology, and recommendations of the Web Strategy Committee. Close collaboration between the Department of Information Technology and the Office of Communications and Publications staff will continually be fostered on issues of design and content. The newly established WSO would work closely with the PTS web publishing community, primarily through its relationships with the departmental web contact representatives.

Management of the Web Services Office will be accomplished by existing positions within DIT, new hires or reorganization. Staffing requirements identified for each function will support current levels of web maintenance and development, as well as, new initiatives derived from the feedback of the various office representatives and/or the Web Strategy Committee. Benefits should include: increased support for Seminary/departmental web application development, improved technical infrastructure capacities and support service capabilities, not presently being provided.

To accomplish the outlined goal of the reorganized web environment will improve and enhance current functions of web design, content management, web programming, web support, infrastructure and management oversight support currently bereft to all facets of the PTS web community.

The section below gives a brief, but rather broad description of responsibilities assigned to each function. The organization charts following this section illustrate the staffing (in both existing and new positions) requirements to accomplish the outlined plan of action. In the cases where web support tasks are assigned to individuals throughout the Seminary, not currently within the DIT Department, such current roles and responsibilities have been listed.

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WORK GROUP RESPONSIBILITIES AND STAFFING

Web Services Office Management

A. Accept direction from Vice President for Information Technology regarding utilitization and implementation of WSO resources for all PTS web site development and maintenance.*.PTS.EDU Web sites.
B. Coordinate with Web Contacts and Departmental Developers as necessary to assist with departmental needs.
C. Coordinate activities of WSO to achieve the Web Services Reorganization Vision Plan goals and objectives.

Infrastructure Support/Web Programming

A. Maintain platform integrity
B. Provide platform support for all supported web sites
C. Monitor server performance and plan upgrades and enhancements as necessary.
D. Maintain security precautions and patches as necessary to prevent servers from being hacked or compromised in any way.
E. Provide redundancy and fail-over for all Seminary data and web applications.
F. Develop and maintain enterprise class web applications and web service components accessible through portal channels and stand-alone applications.
G. Develop and maintain departmental/organizational applications on an as-needed basis as directed by the Department of Information Technology along with DIT approved recommendations from the institutional departments and appropriate suggestions/recommendations from the Web Strategy Committee.

Web Support / Internet Presence

A. Monitor feedback email accounts and phone calls and direct action requests to appropriate work group.
B. Produce statistical reports of web site activity for all supported sites.
C. Maintain and refresh PTS Search Engine providing in-house optimized search capability.
D. Perform recurring evaluation of PTS web site representation in major search engines.
E. Provide instruction to campus web developers in various techniques and technologies.
F. Web Site/Application usability testing and quality assurance.
G. Web Site/Application ADA compliance evaluation and monitoring.

Network Services Responsibilities:

A. Backup
B. Restore data and content
C. Disaster Recovery

Web Services and Communications/Publications (monthly meetings)

A. Receive basic format and design expectations from Comm/Pub
B. Research possibilities of implementation of design
C. Realize limitations
D. Collaborate on changes due to software limitations
E. Update design layout
F. Implement styles (Font, liquid non-liquid design, color scheme)
G. Release design changes

Content/Context Management

Content/Context Management is defined as activities related to developing and formatting various types of information for display on the web. Often the information will require multiple display formats depending on where it is being displayed (portal channel, PDA, browser, etc.). Current content maintenance is the responsibility of individual departments and includes:

1. Content Management
    a. Ensuring that content is available and current
    b. Adding content where appropriate
    c. Updating content where appropriate
    d. Removing content where appropriate
    e. Gathering feedback from constituents and users to determine content to offer for a user rich experience
2. Context Management
    a. Work with Content managers to plan necessary changes to content
    b. Manage content users
    c. Reviewing updates to content and approve for publication

Web Strategy Committee

A. Suggest intra and internet policies to Vice President for Information Technology
B. Guideline reviews, make suggestions on institutional web project priorities

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6. Web Services Responsibilities

Work managed and supported by the Manager of Web Services Office in support of the PTS web site can be classified as either development or maintenance effort. Tasks relating to the functionality of pages, page structure, authentication, security, document management, private user accessibility, programming, etc. will be considered infrastructure support work whereas site/page design, content formatting, public page flow, navigation, et al. will be considered development work. The PTS web site is comprised of public and private specific web pages. Public pages are main pages and any non-private specific page linked to and from the main public web presence. Private pages are those that are available when authentication has taken place and will include faculty pages, board of trustees web pages, user pages, and any page that requires authentication to view.

Maintenance Tasks

Includes User Input - Monitor email received via webservices@ptsem.edu or through the online Web Request Prioritization Form and subsequently take appropriate action. These methods are referenced in multiple locations on the site for users to solicit changes or report problems. For example, the PTS site index pages direct users to report needed changes, deletions or additions to the web email address. Often the emails received from these accounts are general questions requesting contact information or site directions. Other areas for maintenance include:

PTS Site Index - The data for the site index is stored in an Access database which is updated via as web interface or by directly updating the database file.

PTS Calendar - The data in the PTS public/private calendar is pulled from NAUTICAL. This data is kept current automatically by departmental administrators making entries, or Marketing Communications making calendar entries. (http://PTS.edu/survey/calendar.cfm)

PTS Pressroom - Maintenance of this content page is performed by Marketing Communications. The news insert component of the main page is maintained in the same fashion. (http://PTS.edu/PTSMain/press/)

Expert/Speaker Guides - Indexes searchable by keyword and/or categories of individuals. Data for these applications is maintained by Marketing Communications by updating the associated Access database files and providing to the DWM. The DWM replaces the outdated files with the new ones. The applications are written in ASP (Active Server Pages). (Speaker - http://haas.PTS.edu/facindex/, Expert - http://haas.PTS.edu/facindex/)

Trustee's web sites - The Trustee's (http://trustees.PTSEM.edu/) site requires a major move to the new Ektron platform which is in the planning stages. This content is maintained by the Executive Assistant to the President.

Development Tasks

PTS Web Site: The PTS web site has received stylistic updates since its public release. The office of Communications and Publications designs the necessary changes for the majority of the PTS public face, however Web Services subsequently becomes responsible for helping individual departments and offices design and launch their public web presence.

Infrastructure/Programming Tasks

Ektron Development – Web Services is responsible for ensuring that the Ektron platform's integrity remains in line with the public face of the web site. Maintenance may require tasks such as taxonomy/navigation synchronization, work area cleanup, programming services, roles and responsibility identification to the system and Smart Desktop accessibility.

JA0581

7. Conclusion

Web Services is already performing some of the maintenance actions required to maintain the PTS web site and some are more or less automatic as they feed from data maintained by others. Gathering information and web support from the Web Request Form and webservices@ptsem.edu email account will essentially help organize and prioritize critical web maintenance tasks. Providing development support is the bigger issue. This level of support requires a substantial investment of time and talent from several people possessing a variety of skills including web design, graphics design and dynamic web site programming.

To complete transition of the PTS web support process, the following actions are recommended:

1. Responsibility for developing departmental/organizational web sites needs to be determined.
2. All General PTS site capabilities should be consolidated under the newly established Web Services Office.
3. Staffing new hires or a managerial reorganization effort within the Department of Information Technology should occur to ensure quality support
4. Institute Web Strategy Committee

DEPARTMENT OF INFORMATION TECHNOLOGY REORGANIZATION JANUARY 2013

As the newly appointed president, Dr. Barnes approved the Department of Technology's proposed reorganization plan in January 2012. This plan was presented to the Technology Committee at the January Board of Trustees meeting. Below is the rationale for the restructuring of the department.

RESTRUCTURING: ACADEMIC SERVICES AND TELECOMMUNICATIONS, NETWORK, AND SUPPORT SERVICES BECOME ACADEMIC COMPUTING AND SUPPORT SERVICES (ACSS) AND ENTERPRISE AND INFRASTRUCTURE SERVICES (EIS)

PURPOSE

The changes proposed below serve two main goals:

1. Consolidation of key service points on campus. ACSS will include academic, help desk, computer lab, and training services under one umbrella
2. Consolidation of key infrastructure and enterprise development resources on campus. EIS will include web and mobile development, network/server infrastructure, and enterprise application support under one umbrella

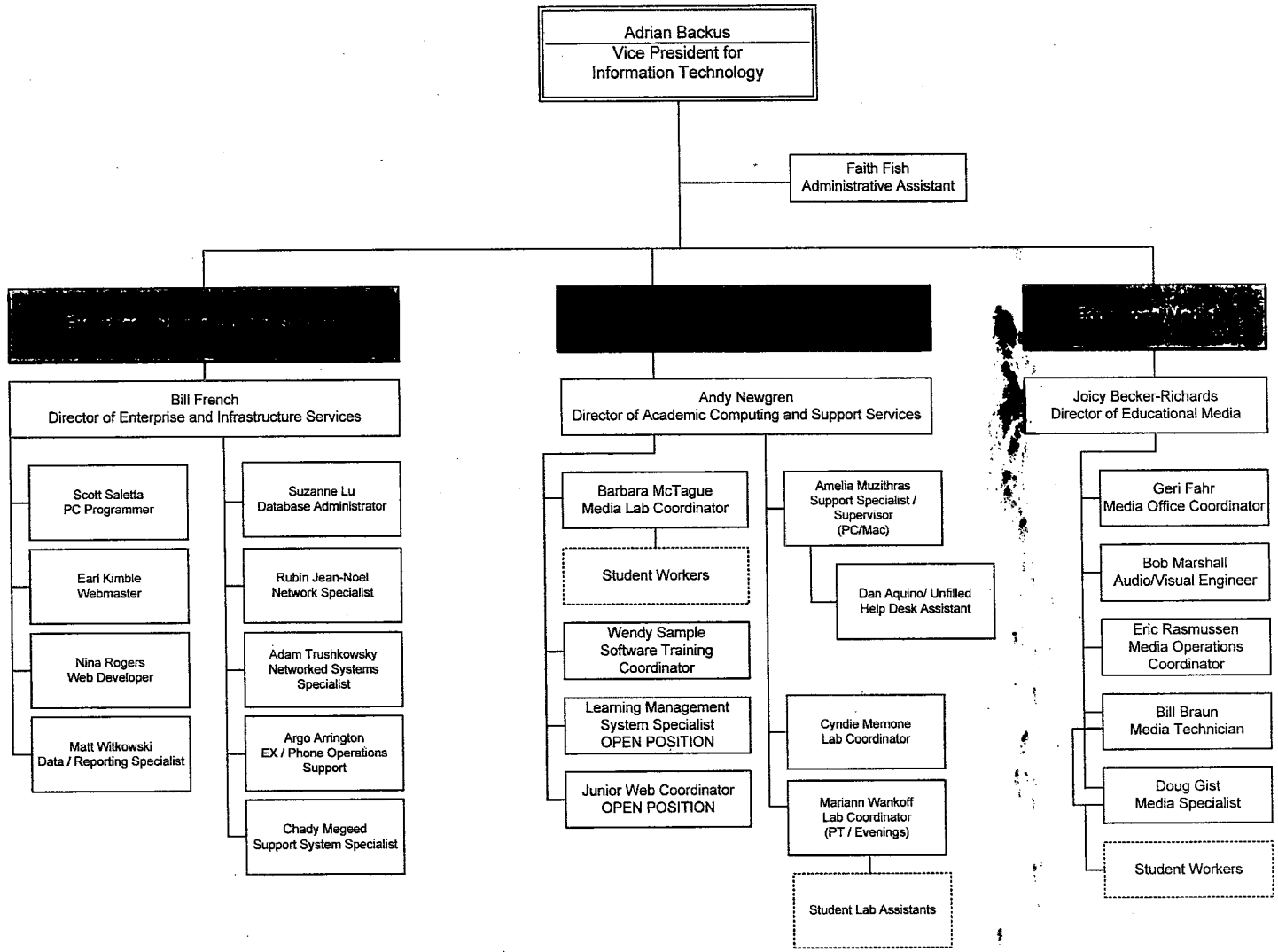
These changes will allow for more consistent, higher quality end-user support and services on campus as well as move forward the development of information data management resources, leading to a data warehouse and institutional repository for academic and administrative materials.

RATIONALE

The rapidly increasing demand for online (web and mobile) access and services, coupled with the opening of the new library with a global reach provide the opportunity to both physically and "philosophically" realign services in order to ensure DIT:

1. Provides a seamless, consistently high level of customer support, both online and onsite
2. Prepares the institution to effectively gather and leverage its tremendous human, intellectual, and data resources electronically through web and mobile based system development

Department of Information Technology Reorganization January 2013



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GOVERNANCE

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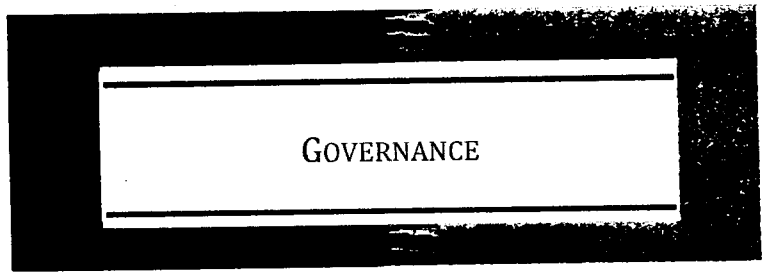

The June 2012 release of the Seminary's Overall Information Technology Integration Policy positions DIT to lead the Seminary into the future by permitting a business operations mindset combined with clear governance for information technology decision making. This transformation allows for more effective financial and strategic planning and leads to a robust information resources service delivery.

Overall Integration Policy - 2012

Information technology policy is overseen by the Vice President for Information Technology who is advised by four committees to ensure the efficient and effective use, implementation, communication and management of various information technologies across the seminary campus for faculty, staff, students, alums and seminary visitors. The objective of the four committees follows the Board of Trustees Information Technology Committee's charter for information technologies across campus to be centralized, integrated and coordinated with the Department of Information Technology. Mission critical issues to be coordinated centrally include but are not limited to: Use, maintenance and implementation; Resource management – fiscal, human, technological; Legal including federal compliance and intellectual property; Information management; Privacy; Security; Risk management; Web use, development and deployment; Training; and Hiring.

The following committees, which pull from faculty, administrators and professional staff, are responsible for advising the Vice President for Information Technology and seek to address critical operational, development and communication matters.

Academic Computing Advisory Committee (Fall 2013)

This committee is comprised of faculty, professional staff and students and advises the Vice President for Information Technology on policies and support issues focused on the seminary's LMS and other technologies for teaching and learning.

Administration Data Systems Advisory Committee (April 2013)

This committee is comprised of professional staff who regularly work with the seminary's administrative and business systems and is responsible for data computing issues including but not limited to data flow between EX modules, coordination, data entry standards and other administrative data computing issues.

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INFORMATION POLICY AND USE COMMITTEE (FALL 2013)

This committee is comprised of faculty, professional staff and administrators to advise the Vice President for Information Technology on technology-related policies, procedures and practices and ensure their effective communication.

WEB ADVISORY COMMITTEE (FALL 2013)

This committee is comprised of web professionals, faculty and other professional staff to advise the Vice President for Information Technology on all issues related to the web (use, development, digital projects...) and ensure effective communication across the seminary about web projects and processes.

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FINANCIAL PROJECTIONS

JA0588

PRINCETON THEOLOGICAL SEMINARY
TECHNOLOGY CAPITAL PROJECT EXPENDITURES
FISCAL YEARS ENDING 6/30/08-6/30/18

Category	Spent FYE 6/08	Spent FYE 6/09	Spent FYE 6/10	Spent FYE 6/11	Spent FYE 6/12	Budgeted FYE 6/13	Anticipated Expenditures FYE 6/14 - FYE 6/18
Replacement Servers/Disk Storage/Etc.	$ 101,744.00	$ 100,300.00	$ 72,877.00	$ 67,946.00	$ 132,163.00	$ 66,000.00	$ 343,000.00
Switches and Phones for Network/Phone System	$ 11,719.00	$ 66,193.00	$ -	$ -	$ 4,790.00	$ 10,000.00	
Replacement of Large Printers	$ 21,791.00	$ 8,740.00	$ 9,690.00	$ 11,192.00	$ 19,691.00	$ 12,000.00	$ 62,000.00
Track 1 Computers (Faculty/Staff)	$ 158,865.00	$ 70,903.00	$ 158,596.00	$ 216,757.00	$ 117,750.00	$ 134,300.00	$ 941,584.00
UPS--XL Phone Equipment	$ -	$ 260,891.00	$ 283,495.00	$ 159,855.00	$ 146,652.00	$ -	
EX Software System	$ 196,548.00	$ 8,190.00				$ -	
Library Related Computer Items						$ 137,000.00	
Data Storage Equipment						$ -	$ 120,000.00
Backup Equipment						$ -	$ 240,000.00
Network Equipment							$ 226,000.00
Contingent Computer Services Funds	$ 4,400.00	$ 8,900.00	$ -	$ -	$ 9,876.00	$ 15,000.00	$ 79,637.04
Educational Media Systems/Equipment/Contingency Includes Luce Library & other learning spaces	$ 226,315.00	$ 71,678.00	$ 277,667.00	$ 30,539.00	$ 74,732.00	$ 333,484.00	$ 6,445,700.00
Web Services Expenditures	$ -	$ -	$ 20,195.00	$ -	$ -	$ -	$ -
New Library Project Expenditures:							
Low Voltage Cabling						$ 396,000.00	
Network Electronics						$ 437,495.35	
Audio Visual Cabling						$ 123,352.00	
Audio Visual Equipment						$ 2,324,960.00	
Underground Utilities				$ 114,000.00			
Outdoor Redundant Fiber							$ 62,444.00
CRW Campus Project Expenditures:				$ 97,000.00			
Library (Luce renovation)							$ 483,500.00

*** This sheet does not include operating budget costs

General Inventory and Capabilities

Below is a list of general inventory items and some capabilities the Office of Information and Educational Technology currently has. This inventory list is not an exhaustive list; its purpose is to provide a glimpse into the kinds of equipment and services we currently offer the Seminary community.

Item	Description	Quantity
Desktop PCs	User systems, offices and labs	286
Notebook PCs	User systems, offices	69
Desktop Macs	User systems, offices and labs	32
Notebook Macs	User systems, offices	45
InkJet printers	Local user administrative printers	89
Network laser printers	Workgroups, shared in offices	140
Virtual Servers	File, print, web, e-mail, database services	109
Physical Servers	Firewall, ESX Hosts, Call Managers	17
Fiber Optic	Connectivity between buildings	10+ Mi.
Central Network Switch	Network Core Switches	4
Network Switches	In each building for switched connectivity	138
Major Software		
Microsoft Office Suite	User applications	
Microsoft Exchange	E-mail licenses	
IIS	Web Server	
Server 2003/2008	Operating System	
SQL Server 2000/2005	DBMS	
Jenzabar EX	Administrative applications	
Ektron CMS400.Net	Content Management System	
Blackboard Suite	Web Based Courseware	
NVivio		
SPSS		
Adobe Acrobat		
Bibleworks	Bible Research Software	
EndNote	Bibliographic Database Software	
Accordance	Bible Software for Macs	
Zotero	Open source reference mgmt software	

Equipment	Description	Installed	Portable	Total
Video Capture (Lecture)	Capture/stream rich media	3	0	3
Video Conference	Single & multipoint connections	2	1	3
Conf & Speaker Phones	Single & multipoint connections	0	4	4
Simple Speaker Phones	For assistance & audio conferences	18	0	18
LCD Projectors	Projects from media players, cameras, computers	24	4	28
Document Cameras	Captures image for projection	7	7	14
Overhead Projectors	Projects transparencies	0	4	4
Slide Projectors	Project's slides	2	1	3
PA Systems	Public address system	13	4	17
Desktop PC	Windows PC computer	12	0	12
MAC Computer	Apple computer	4	0	4
Laptop PC	Personal laptop computer	28	5	33
Laptop Mac	Apple laptop computer	0	2	2
TV /Flatscreen monitors	View video or broadcast signal	10	11	21
VCR	Play/record to videotape	6	0	6
TV/DVD/VCR Unit	TV that plays DVD or VHS tapes	0	5	5
DVD/VHS	Play DVDs, CDs or videotapes	11	14	25
DVD/HDD	Play/record DVDs; record to internal hard drive	7	3	10
DVD Recorder	Record to DVD	0	3	3
DVD/CD Duplication Unit	Duplicates DVDs/CDs	3	0	3
DVD Player	Play DVD's	1	2	3
DAT Recorder	Records to digital audio tape	2	0	2
Digital Audio Recorders	Portable lecture recorders	0	21	21
CD/Cassette	Play CDs; play/record audio cassettes	0	7	7
CD/HDD Recorder	Records to CDs & internal hard drive	7	0	7
CD Recorder	Record to CDs	5	3	8

JA0590

General Inventory and Capabilities
Media Lab

Below is a list of general inventory items and some capabilities the Media Lab currently has. This inventory list is not an exhaustive list; its purpose is to provide a glimpse into the kinds of equipment and services we currently offer the Seminary community.

Item	Quantity
Dell Optiplex 755 Intel Dual Core 1.6GHz workstations	4
Plustek Opticpro A320 12x17 large document scanner	1
Lending inventory – Cameras (3)Canon DSLR (8)Sony flash video	11
MAC laptops	4
iMac workstations	2
High-speed Kodak document/photo scanners	2
HP 4700 color printer	1
Plustek OpticBook dedicated book scanner	1
Nikon 35mm slide, film, negative scanner	1
Discmaker CD/DVD duplicator	1
Teac CD/Tape/USB deck record to MP3	2
Audio-Technica USB turntable – convert LPs to MP3	1
LG DVD player	1
GoVideo VHS deck	1
Canopus media converter – import video tapes and DVD clips	2
MP3 voice recorders	4
LCD portable projectors	2

Major Software	Description
MS Windows 7	PC operating system
Audacity	Narration recording/editing software
Roxio CD/DVD Creator	CD/DVD authoring for digital data and music files
MS Publisher 2010	Desktop publishing for posters, flyers, and handouts
Adobe Professional 9	Create and edit PDF's
Adobe Creative Suite CS5	a collection of graphic design, video editing, and web development applications
MS Office Suite 2010	PowerPoint presentation, MS Word
Mozilla Firefox	Internet browser
Internet Explorer	Internet browser
Safari	Internet browser
Apple QuickTime	Viewer for multimedia movie files
Real Networks Real Player	Viewer for multimedia movie files
Apple iTunes	CD authoring and file conversion tool
MAC OSX	iMovie; Final Cut Express/Pro; MS Office Suite

JA0591

APPENDICES

A – STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT) ANALYSIS

B – DEPARTMENT OF INFORMATION TECHNOLOGY 2012 TO 2013 GOALS

C – LIBRARY/IT TASK FORCE ON LIBRARY TECHNOLOGY PLANNING

D – FIBER PLANT PLANS AND FIBER PLANS AND NETWORK EQUIPMENT END OF LIFE ESTIMATES FOR PRINCETON THEOLOGICAL SEMINARY

E – TRAINING DEVELOPMENT PROGRAM

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APPENDIX A STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT) ANALYSIS

JA0594

Strengths, Weaknesses, Opportunities, Threats (SWOT) Report

Academic Services Center (ASC):

Strengths: the Academic Service Center's primary strength is in customer service response to students, faculty and staff by addressing their computer and software/research needs. Additionally IT tests academic software, inclusive adaptive learning products for members with disabilities.

Weaknesses: include improvement of IT's web presence for potential users. IT must provide more asynchronous training opportunities to meet the needs of over scheduled students and faculty. IT must continually support user electronic (BYOD) tools and software of choice and continually adopt and adapt to technological solutions pertinent to teaching and learning.

Opportunities: Given the increased growth of the digital humanities, ASC is positioning itself to locate emerging methods of helping students and faculty conduct and publish research data. Developing trends such as mobile and cloud based computing allow for increased possibilities for constituents to access common information and collaborate intuitively. Completion of the new library affords the potential to provide academic services and programs beyond the immediate PTS community to the church and scholars at large, i.e. training certification and increased professional cross departmental collaboration with the library professionals for research and study opportunities.

Threats: The lack of appropriate academic resources in support of the office's mission in the area of research and development reflects an image that ASC may be slow to adopt new academic resources in support of its constituents.

Web Services:

Strengths: include specialized web software and web tools training and support such as: Ektron content management software for external and internal website development and maintenance; Jenzabar JICS administrative intranet portal websites; Social Media (Facebook, twitter, blogs); Faculty websites (Open Scholar, and Ektron); multimedia (Silverlight, YouTube); emerging mobile responsive website design and development; website support, resource management, consultation, development and project management and the current Ektron 8.6 platform/architecture and technical support; web programming, and training support.

Weaknesses: The lack of cross departmental web project coordination and prioritization, lack of web personnel, deficient PTS user technical knowledge base and skills set, much user apathy relative to training and web content management, the need for an official web office within IT, lack of appropriate web budget funding.

Opportunities: include interdepartmental collaboration with potential shared religious and university/higher educational organizations; the use of new open source web applications that are available on the market; desire to support future teaching and learning online processes of the institution.

Threats: the lack of user knowledge on the importance of content management and online intellectual property security issues.

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Educational Media:

Strengths: Educational Media has a committed staff of workers and provides strong, reliable customer service, has extensive staff technical knowledge, including in areas of repairs and system design and maintenance; Media works with students, faculty and staff cross departmentally; seeks to source state of the art media equipment solutions, provides good technical support and maintenance, and project management.

Weaknesses: Media needs more technical staff; as media systems are deployed and usage increases, too much deferred maintenance due to budget cuts occurs, capital funds are often very insufficient to support the media academic program of the institution; staff is needed to provide service nearly 24/7 which strains both equipment usage and over works staff members. These are not exempt persons. Programs are not planned in advance in some instances.

Opportunities: Educational Media is positioning itself to support distance and online learning opportunities.

Threats: A lack of program planning and cooperation on behalf of other seminary departments; the lack of program funding and staffing; deferred maintenance of facilities and equipment and changing technologies and laws.

Telecommunications Network Services and Support (TNSS):

Strengths: Include Jenzabar Enterprise System integration of Business Office, Seminary Relations, Registrar and Admissions data; standard hardware reliability, maintenance support, custom development, and easy configuration for disaster recovery and back up purposes; user training is available. PTS' network systems virtual machine (VM) hardware and software infrastructure allows for flexibility, reliability and low cost maintenance. The brand new data center in Luce Library includes: redundant cooling, back up diesel generator, spacious equipment racks, environmentally cost efficient design, and state of the art wireless network; the high performance redundant CISCO and virtual server architecture, as well as storage area network (SAN) allows for reliably fast technical performance and high data storage capacities; the voice over the internet protocol (VOIP) telecommunications system, is the best voice, video and data converged technologies on the market. The CheckPoint Firewall and system back up to disk and tape processes allow for quick data recovery and great storage capacities. Experienced help desk support, network engineers, PC and Mac deployment support and maintenance and coordinated training programs are successful, work order tracking systems as well as response time reporting and mobile device support is strong, support for Office 2010 has been successful.

Weaknesses: include current IT staffing only allows for 8:30 to 4:30 coverage with limited after hour on call support for critical outages. Internet usage and expectation tremendously increased requiring necessary critical funding for increased use of third party internet bandwidth, costs must be allocated by financial affairs office; IT must move from its current location in the basement to be effective to users; user training and adherence to IT policies must be enforced by senior administration; must develop more self-serve interfaces for constituents.

Opportunities: must leverage current data contained and collected by the network system for institutional reorganization, planning and outcome monitoring to improve online self-service for students and faculty; to create Business Intelligence (BI) dashboards, key performance indicators (KPIs) and data warehousing resources. Work with library to audit and select appropriate cost effective library systems, the network and server infrastructure has the capacity to support many technological initiatives both of the seminary and its various partners, thus services can extend to outside institutions of higher learning, theological centers and churches, consolidation of technical support systems cross campus could increase technical support for distance education and the network infrastructure can support such endeavors.

Threats: Constant end user system attacks by malware, viruses, etc.; "untrainable" users and lack of user understanding of their data needs, collection for effective business planning and security of use; funding cuts which compromise system integrity; current data and system security needs, legal restraints on higher education and technology, increased contract review and development, project management, risk management; expectation for 24/7 tech support with lack of appropriate staffing. Digital knowledge base divide between tech and untech savvy users who adapt slowly to change management, budget cuts effect on service levels, ability to remain current on industry standards, current facilities management philosophy on priorities versus a utilities consumer based management philosophy to manage capital and operating expenditures; projects and current institutional assets lack funding or are deferred for scheduled maintenance or purchase. Lack of staff and adjustments for technical salaries in keeping with market standards.

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APPENDIX B DEPARTMENT OF INFORMATION TECHNOLOGY 2012 TO 2013 GOALS

JA0598

Fiscal Year 2012-2013 Goals for the Department of Information Technology

Princeton Theological Seminary March 04, 2013

Mission Statement: To develop and implement a comprehensive program of media and technological services in support of the Seminary's stated mission in theological teaching and learning, by thoughtful consideration and deployment of technology as an information, education and communication

Seminary Priorities (definitions):

	A	B	C	D	E	F
	Seminary Priority: What Seminary Goal/Objective Are You Supporting?	Department Goal: Why Do You Do What You Do? How Can You Help The Seminary/ Students?	Department Objective: How Will You Accomplish This Goal?	Current Data on Hand: What Info Already on Hand Might Help Tell You If You're Achieving This Goal?	Possible New/Improved Evaluation Tools/ Techniques/Indicators	Timeline for Implementation
1	1, 2, 3, 4, 5, 7, 8 (See above definitions)	Provide the highest quality infrastructure and technical support for information technology services as well as develop and maintain a database for institutional outputs, reporting, and planning.	Server upgrades (increased capacity)	Gantt Charts / Project Plans		Completed
			Move to Luce	Gantt Charts / Project Plans		Projected: May 2013
			Financial Aid / PowerFAIDS Upgrades	Gantt Charts / Project Plans / User Feedback		Ongoing
			Admin / Staff / faculty Computer Upgrades	Project Plans / Gantt Charts	User Surveys	Ongoing
			Jenzabar EX Upgrades	Project Plans / Gantt Charts / ADSG Meetings		Ongoing
			ABRA HR Upgrade	Project Plans / Gantt Charts	User Surveys	Completed
			Update Business Continuity Plans	Testing		Ongoing
			Improved Wireless Network	Project Plans / Gantt Charts / System Monitoring		Projected: May 2013
			Regular maintenance and updating of Blackboard Learning Management System	Project Plans / Gantt Charts / Usage Reports		Ongoing throughout the academic year ending June 30, 2013
			West Windsor redevelopment project	Project Plans / Gantt Charts		Completed
			Library Construction Project (integration of multiple user interfaces: i.e. e-tablets moblie computing, smart phone application, new data room, fiber upgrade)	Project Plans / Gantt Charts		Projected: December 2013
			Help Desk Reporting / KPI / Dashboard project			Ongoing
2	2, 7, 9 (See above definitions)	Teaching, Learning and Training: Increase student and faculty involvement in teaching/learning process, utilize audio and video resources, teleconferencing, digitization, and web technologies; provide campus-wide technology training.	Possible Bandwidth Upgrades in support of distance education	Bandwidth Reports		Ongoing Unknown
			Provide hands-on training of multimedia and specialized research software tools relevant to teaching and research (BibleWorks, Endnote, Accordance, Zotero, NVivo, Blackboard, MS Publisher, Adobe Acrobat Professional, iMovie and an extensive suite of newly acquired advanced tools) for faculty and students and asynchronous tools such as online tutorials and an online forum that provide technological solutions and tips for both academic and ecclesial environments as well as solicits feedback to ensure pertinent and relevant posts;	Training session participation statistics; blog views; Media Lab resource statistics; Blackboard active course site monitoring; annual student technology survey.	User Surveys/Attendance	Ongoing throughout the academic year ending June 30, 2013
			Provide technology training and support services for students, faculty and staff encompassing productivity/office software (MS Office and Adobe Acrobat, etc.)	Training session participation statistics; blog views; training survey.	User Surveys/Attendance	Ongoing throughout the academic year ending June 30, 2013
			Continue the annual "Technology and the Church" lecture series (in conjunction with the Library), providing for students a variety of "real world, in-church" perspectives on how technology impacts the work of the pastor;		User Surveys/Attendance	January 2013
			Ektron CMS400 Web Training	Add additional training oportunities for more advanced Ektron capabilites	Ektron 8.05	2012-13
			Assist in planning/preparation for Bicentennial Celebration, with world-wide participation and access to resources.	Creation of new Bicentenial web pages, mobile capabilites		Completed October 2012
			Continue to equip campus classrooms and public spaces with media equipment to accommodate increased demand, including upgraded sytems to be installed in Stuart third floor classrooms.	On-line request data indicates continuing increase in need for media-equipped spaces, and heavy usage of existing spaces.	User Surveys	June 2011 -July 2014
			Provide increasing support and systems for campus webinars, videoconferencing and lecture-capture, allowing for increased access to resources.	Request data indicates increased interest in/use of media technologies and resources.	User Surveys	June 2011 -July 2013
			Provide media support for Bicentennial Celebration, with world-wide participation and access to resources.	Plans have strong media component.	N/A	Completed October 2012
			Design and coordinate installation of media systems in the new Library, SCVM and in community spaces in new WW housing.	Work is in progress	N/A	2011-2013
			Upgrade Tennent 3 system to facilitate faculty training for online teaching	Project Plans		Completed: December 2012
			Provide equipment and service support for increased spaces in new Library and in West Windsor			Ongoing
3	2, 9 (See above definitions)	Web Technologies - Academic and Administrative: Develop web technologies to meet academic and administrative goals.	Responsive design (mobile, tablet, etc.)	Web Audit YAML Framework, blueprint framework, jQuery	User Survey, W3C Standards	7/1/2012 - 06/30/2013
			Creation of Web Committee	Project plans	Web Audit	7/1/2012 - 06/30/2013
			Further integration of "Drag and Drop Design"	Project plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
			Data port of JICS to Ektron	Project Plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
			Single Sign On for web presence	Project Plans	User Experience	7/1/2012 - 06/30/2013
			Data Reoganization	Project Plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
			Three tiered platform (Presentation, Business Logic, Data Access)	Project Plans	Ektron CMS 8.6, System Standards	7/1/2012 - 06/30/2013
4	2, 3, 9 (See above definitions)	Administrative: Provide effective staffing/personnel, technology policies/guidelines, committees and data security matters.	Personnel: PT Media Lab Support	Job Announcements / Ads		Deferred
			IT Policy Sub Committees Meetings(Academic Computing, Admin Data Systems, IT Policy & Use, Web)	Institutional reports	Ongoing committees and institutional reports	May 2012 - June 2013
			Reorganization: Move lab coordinators from TNS to ACS Director, hire LMS specialist, junior web developer	Reorganization		July 2012 - June 2013

Fiscal Year 2012-2013 S.M.A.R.T. Goals (Key Performance Indicators) for the Department of Information Technology

Princeton Theological Seminary March 04, 2013

Mission Statement: To develop and implement a comprehensive program of media and technological services in support of the Seminary's stated mission in theological teaching and learning, by thoughtful consideration and deployment of technology as an information, education and communication

	A	B	C	D	E
	Seminary Priority: What Seminary Goal/Objective Are You Supporting?	Department Objective: How Will You Accomplish This Goal?	Current Data on Hand: What Info Already on Hand Might Help Tell You If You're Achieving This Goal?	Possible New/Improved Evaluation Tools/ Techniques/Indicators	Timeline for Implementation
1	**IT Customer Support Services** • Help Desk - Reduce response time and	Move to Luce			
		Help Desk Reporting / KPI / Dashboard project	Gantt Charts / Project Plans	User Surveys	Projected: May 2013
					Ongoing
2	**Academic and Administrative System Assurance** • Seek targeted expertise to evaluate operations and performance of specific technologies. Reviews include: network design and configuration, security protections, firewall, VOIP, Web, Jenzabar/Blackboard modernization and data integration initiative.	Financial Aid / PowerFAIDS Upgrades			Ongoing
		Admin / Staff / faculty Computer Upgrades	Gantt Charts / Project Plans / User Feedback		Ongoing
		Jenzabar EX Upgrades	Project Plans / Gantt Charts	User Surveys	Ongoing
		Server upgrades (increased capacity)	Project Plans / Gantt Charts / ADSG Meetings		Ongoing
		ABRA HR Upgrade	Project Plans / Gantt Charts		Completed
		Regular maintenance and updating of Blackboard Learning Management System	Project Plans / Gantt Charts	User Surveys	Completed
		Responsive design (mobile, tablet, etc.)	Project Plans / Gantt Charts / Usage Reports		Ongoing throughout the academic year ending June 30, 2013
		Creation of Web Committee	Web Audit YAML Framework, blueprint framework, jQuery	User Survey, W3C Standards	7/1/2012 - 06/30/2013
		Further integration of "Drag and Drop Design"	Project plans	Web Audit	7/1/2012 - 06/30/2013
		Data port of JICS to Ektron	Project plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
		Single Sign On for web presence	Project Plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
		Data Reoganization	Project Plans	User Experience	7/1/2012 - 06/30/2013
		Three tiered platform (Presentation, Business Logic, Data Access)	Project Plans	Ektron CMS 8.6	7/1/2012 - 06/30/2013
				Ektron CMS 8.6, System Standards	7/1/2012 - 06/30/2013
3	**Computer System Security** • Protect data security through strategic disaster planning, such as backup and recovery plans (Business Continuity), provide system redundancy (RAID) and	Improved Wireless Network			
		Update Business Continuity Plans	Project Plans / Gantt Charts / System Monitoring		Projected: May 2013
			Testing		Ongoing
4	**Utilize Instructional Technology to Create Smart Classrooms** • Create advanced technology-enhanced classrooms with integrated audio, video, data, and voice, which possess the capacity to accommodate global distance/video conferencing. • Promote web-based applications and activities with a global orientation.	Bandwidth Upgrades in support of distance education	Bandwidth Reports		Unknown
		Assist in planning/preparation for Bicentennial Celebration, with world-wide participation and access to resources.	Creation of new Bicentenial web pages, mobile capabilites		Completed October 2012
		Continue to equip campus classrooms and public spaces with media equipment to accommodate increased demand, including upgraded sytems to be installed in Stuart third floor classrooms.	On-line request data indicates continuing increase in need for media-equipped spaces, and heavy usage of existing spaces.	User Surveys	June 2011 -July 2014
		Provide increasing support and systems for campus webinars, videoconferencing and lecture-capture, allowing for increased access to resources.	Request data indicates increased interest in/use of media technologies and resources.	User Surveys	June 2011 -July 2013
		Provide media support for Bicentennial Celebration, with world-wide participation and access to resources.	Plans have strong media component.	N/A	Completed October 2012
		Design and coordinate installation of media systems in the new Library, SCVM and in community spaces in new WW housing.	Work is in progress	N/A	2011-2013
		Upgrade Tennent 3 system to facilitate faculty training for online teaching	Project Plans		Completed: December 2012
		Provide equipment and service support for increased spaces in new Library and in West Windsor			Ongoing
5	**Training** • Increase computer literacy rate of Seminary administration and staff. • Increase student and faculty involvement in the teaching/learning process, utilizing computer, audio and video resources, teleconferencing, digitization, and web technologies.	Provide hands-on training of multimedia and specialized research software tools relevant to teaching and research (BibleWorks, Endnote, Accordance, Zotero, NVivo, Blackboard, MS Publisher, Adobe Acrobat Professional, iMovie and an extensive suite of newly acquired advanced tools) for faculty and students and asynchronous tools such as online tutorials and an online forum that provide technological solutions and tips for both academic and ecclesial environments as well as solicits feedback to ensure pertinent and relevant posts.	Training session participation statistics; blog views; Media Lab resource statistics; Blackboard active course site monitoring; annual student technology survey.	User Surveys/Attendance	Ongoing throughout the academic year ending June 30, 2013
		Provide technology training and support services for students, faculty and staff encompassing productivity/office software (MS Office and Adobe Acrobat, etc.)	Training session participation statistics; blog views; Media Lab resource statistics; training survey.	User Surveys/Attendance	Ongoing throughout the academic year ending June 30, 2013
		Continue the annual "Technology and the Church" lecture series (in conjunction with the Library), providing for students a variety of "real world, in-church" perspectives on how technology impacts the work of the pastor.		User Surveys/Attendance	Jan-13
		3) Ektron CMS400 Web Training	Training session participation statistics; blog views; training survey.	User Surveys/Attendance	Ongoing throughout the academic year ending December 30, 2012
6	**Technology operating and capital budget ratio:** • Utilize material, financial, and human institutional resource needs.	Personnel: PT Media Lab Support	Job Announcements / Ads		Deferred
		IT Policy Sub Committees Meetings (Academic Computing, Admin Data Systems, IT Policy & Use, Web)	Institutional reports	Ongoing committees and institutional reports	May 2012 - June 2013
		Reorganization: Move lab coordinators from TNS to ACS Director, hire LMS specialist, junior web developer	Reorganization		July 2012 - June 2013
		West Windsor redevelopment project	Project Plans / Gantt Charts		Completed
		Library Construction Project (integration of multiple user interfaces: i.e. e-tablets moblie computing, smart phone application, new data room, fiber upgrade)	Project Plans / Gantt Charts		Projected: December 2013

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APPENDIX C LIBRARY / IT TASK FORCE ON LIBRARY TECHNOLOGY PLANNING

JA0602

JOINT LIBRARY/IT TASK FORCE ON LIBRARY TECHNOLOGY PLANNING

On Thursday, June 21, 2012, President Iain Torrance distributed an Information Technology Integration Policy to the Seminary community. The policy calls for "information technologies across campus to be centralized, integrated and coordinated with the Department of Information Technology."

The implications of this policy extend immediately to the Library where underinvestment in strategic and technology planning and an absence of synchronization with the Department of Information Technology are key challenges being addressed in the Library's advancement. In order for an integration policy to work, the Library and the Department of Information Technology will need to work together closely to assure that the Library's evolving technology profile is commensurate with institutional directions.

We think that you, as members of the Joint Library/IT Task Force on Library Technology Planning, are in the best position to help shape a library technology plan that meets the requirements of the integration policy and that can then be drawn effectively into the Library's strategic plan.

The process of examining technology, technology uses, and technology requirements in the Library begins with an assessment of the Library's program for acquiring, describing, accessing, and preserving content collected in multiple formats. This work presently depends in large measure on the Voyager Integrated Library System (ILS) for the development and maintenance of the Library's inventory control database and the online public access catalog (OPAC).

Access to the Library's commercially supplied electronic databases is provided by a separate Serials Solutions interface while access to the Library's locally digitized collections is provided by means of MarkLogic as an additional separate interface. Improving seamless access to library-supplied content is one of the Library's critical technology requirements.

The Library will continue the revitalization of its web services program, focusing on increased mobile and social media development as well as providing remote users with additional online services such as online tutorials, webinars, podcasts, and screencasts. The Library will also pursue its programmatic efforts to focus increasingly on advanced computational applications for the mining of theological texts and data as well as including born digital materials and audio-visual works in its digital content presentation, highlighting the important usage of visualization technologies.

Library technology planning should recognize that the Library's future is one of continuing fiscal restraint. Its collections, services, and uses of technology, while occurring in a local institutional setting, must allow for the emergence of the inter-institutional interdependency that is assumed by the Seminary's strategic

JA0603

plan. This will itself qualify and enhance technology possibilities as well as demands. The technology directions that the Library elects to pursue in collaboration with the Department of Information Technology will impact the Library's relationships with the library community. Openness to macrosolutions, to shared service and shared resource development, to investment in technology-changing partnerships with other libraries, coalitions, and collaboratives, should guide library technology planning.

Role of the Task Force

The Task Force is intended to be advisory to the James Lenox Librarian and the Vice President for Information Technology.

Charge

The Joint Library/IT Task Force on Library Technology Planning is charged with formulating a library technology plan to match the technology requirements and services of the library program with projected budgets covering fiscal years 2013-2018.

The Task Force needs to consider the technology environment of higher education; review information technology trends; consider library technology requirements, products, options, and costs in light of library functions and programs; and develop a plan.

The agenda of the Task Force should include but not be restricted to the following issues:

- Maintenance of a 24x7 infrastructure enabling library access in support of faculty, students, alumni and friends, pastors and congregations, global community-building and international engagement.
- Ongoing redesign of the library website to provide ever greater usability.
- Next generation library management system, upgrading or replacing the current Voyager system, whether proprietary or open source, and including cloud options.
- Technology infrastructure and electronic reserves management.
- Integration of digital platforms including ebooks, ebook readers, and tablets into the Seminary's technology environment.
- Introduction of mobile device support into library services.
- Integration of library content, discovery, and delivery with interactive online learning course management.
- Infrastructure solutions for long-term presentation, management, and preservation of locally generated digital collections.
- Incorporation of visualization, simulation, 3D modeling, augmented reality, gesture or touch-based capabilities into technology offerings available to library patrons.
- Introduction of large-scale data analysis capabilities of high performance computing (in collaboration with Princeton University) increasingly necessary to digital humanities work.
- Increased participation in shared technology development among libraries, regionally and nationally.
- Library's technology role in helping with intellectual property, repository, and records management issues within the Seminary.

JA0604

- Library role in hub and portal development.
- Technology solutions that support seamless access to library resources.

TIMELINE

The first meeting of the Task Force will be scheduled for March 2013. The work of the Task Force is expected to conclude by mid April 2013 at which time its final report is due.

Administrative support for the Task Force will be provided by the Library's Administrative Assistant and by the Senior Administrative Assistant, Information Technology.

We appreciate your willingness to assist us with this important effort. If you have questions, please contact us.

Sincerely,

Donald M. Vorp
James Lenox Librarian

Adrian Backus
Vice President for Information Technology

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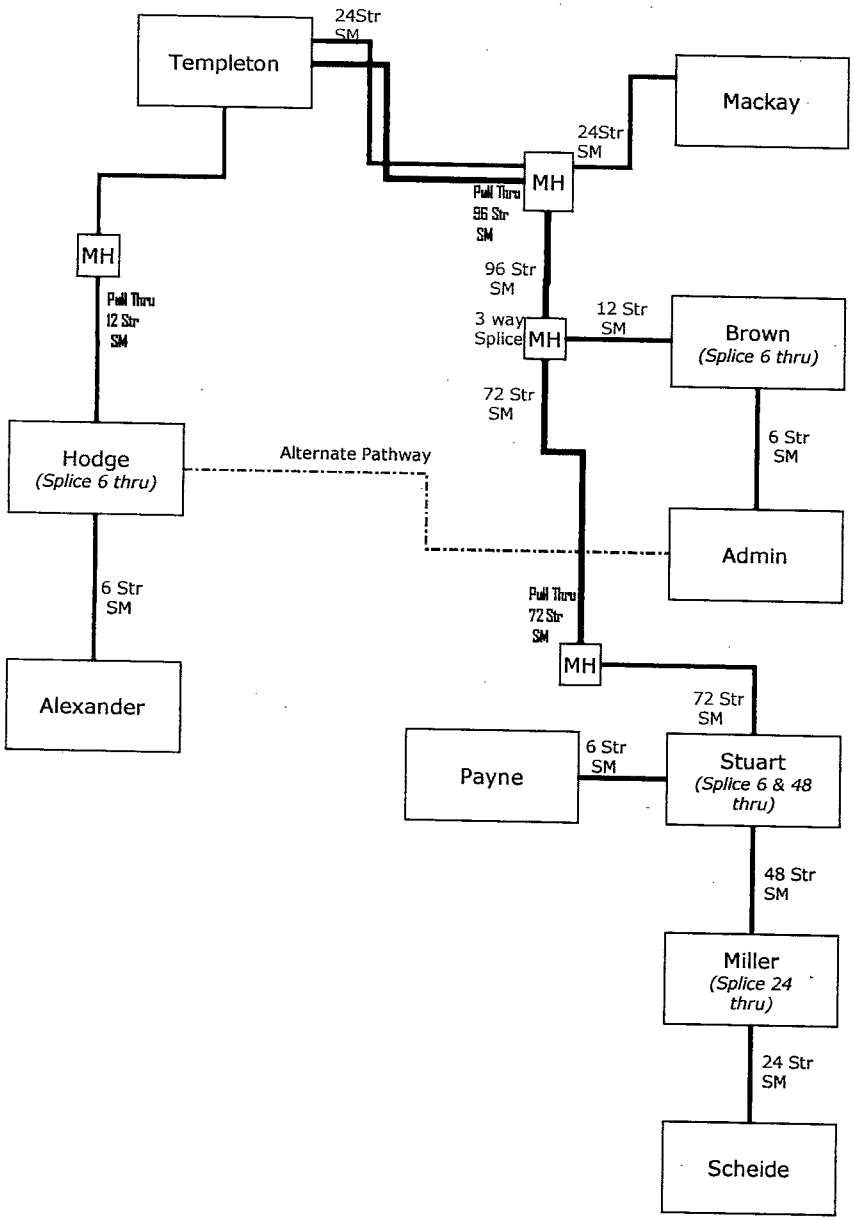
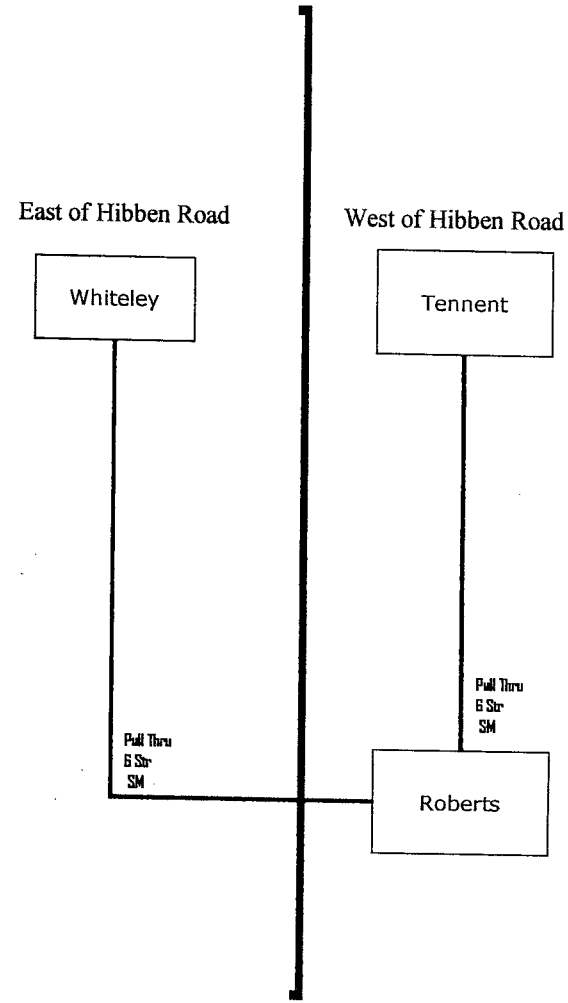
APPENDIX D FIBER PLANT PLANS FOR PRINCETON THEOLOGICAL SEMINARY

JA0606



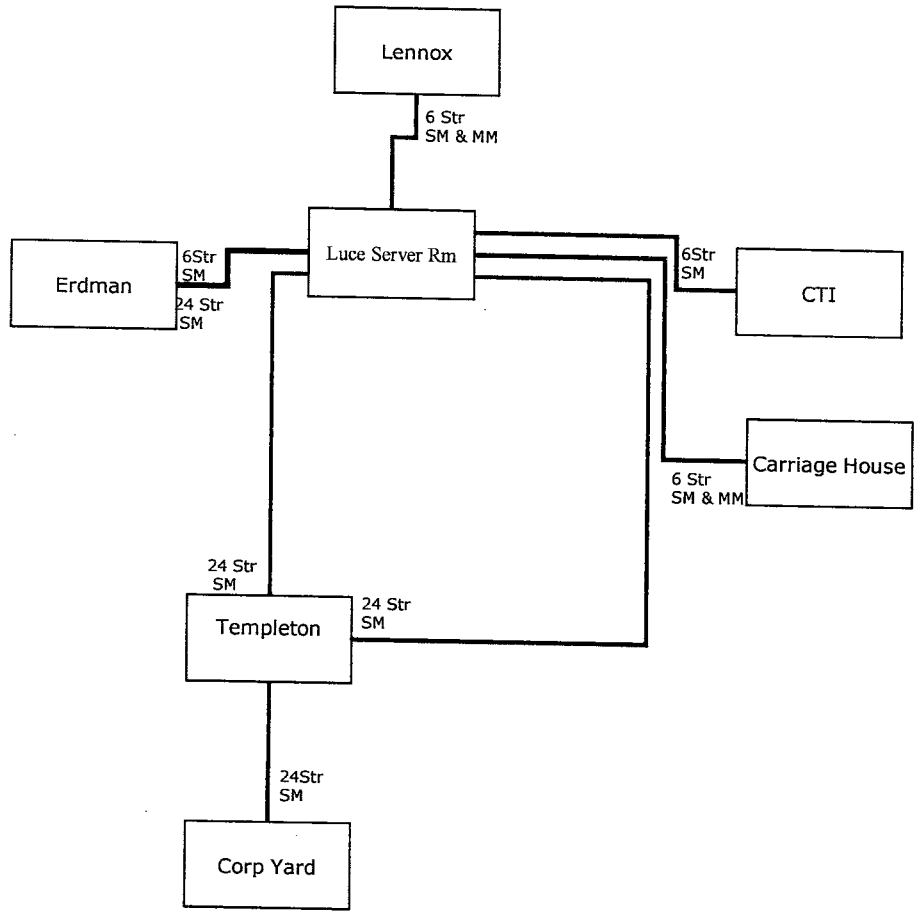


PTS Proposed Fiber optic cable layout, rev2

02-22-2013
By R. Tillman

NetQ Multimedia Company

JA0607

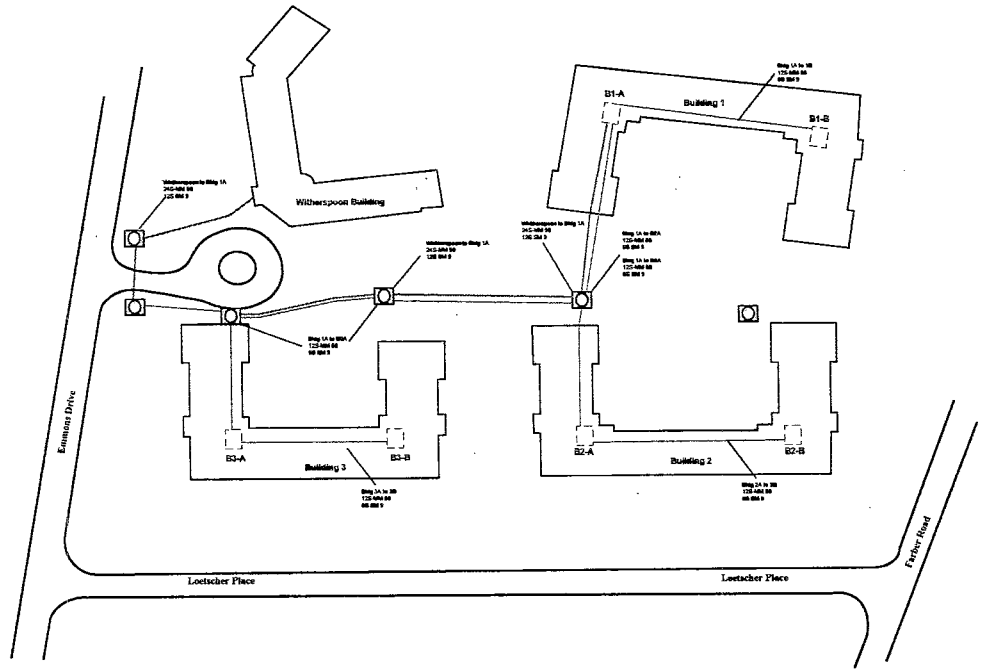


PTS Fiber Plant as installed on

10-15-2012
By R. Tillman

NetQ
Multimedia Company

Princeton Theological Seminary West Windsor Fiber Plant



JA0609

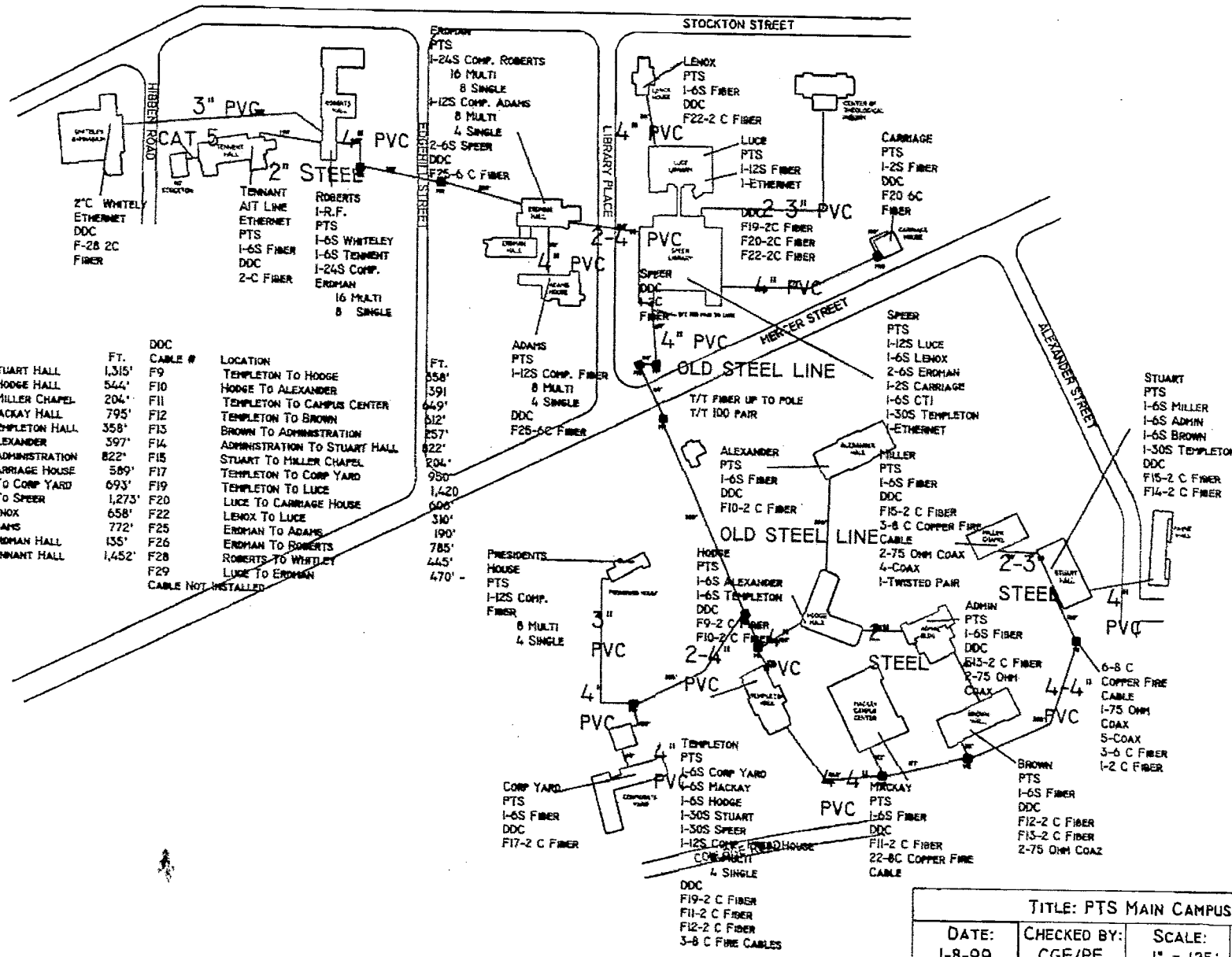
Princeton Theological Seminary
64 Mercer Street
Princeton, NJ 085-42-0803

Joseph R. Monaco
September 21, 2011
Version 1.0

Bill Pappas

TRANSTEC SERVICES
45 Columbia Road
Somerville, NJ 08876

NETWORK



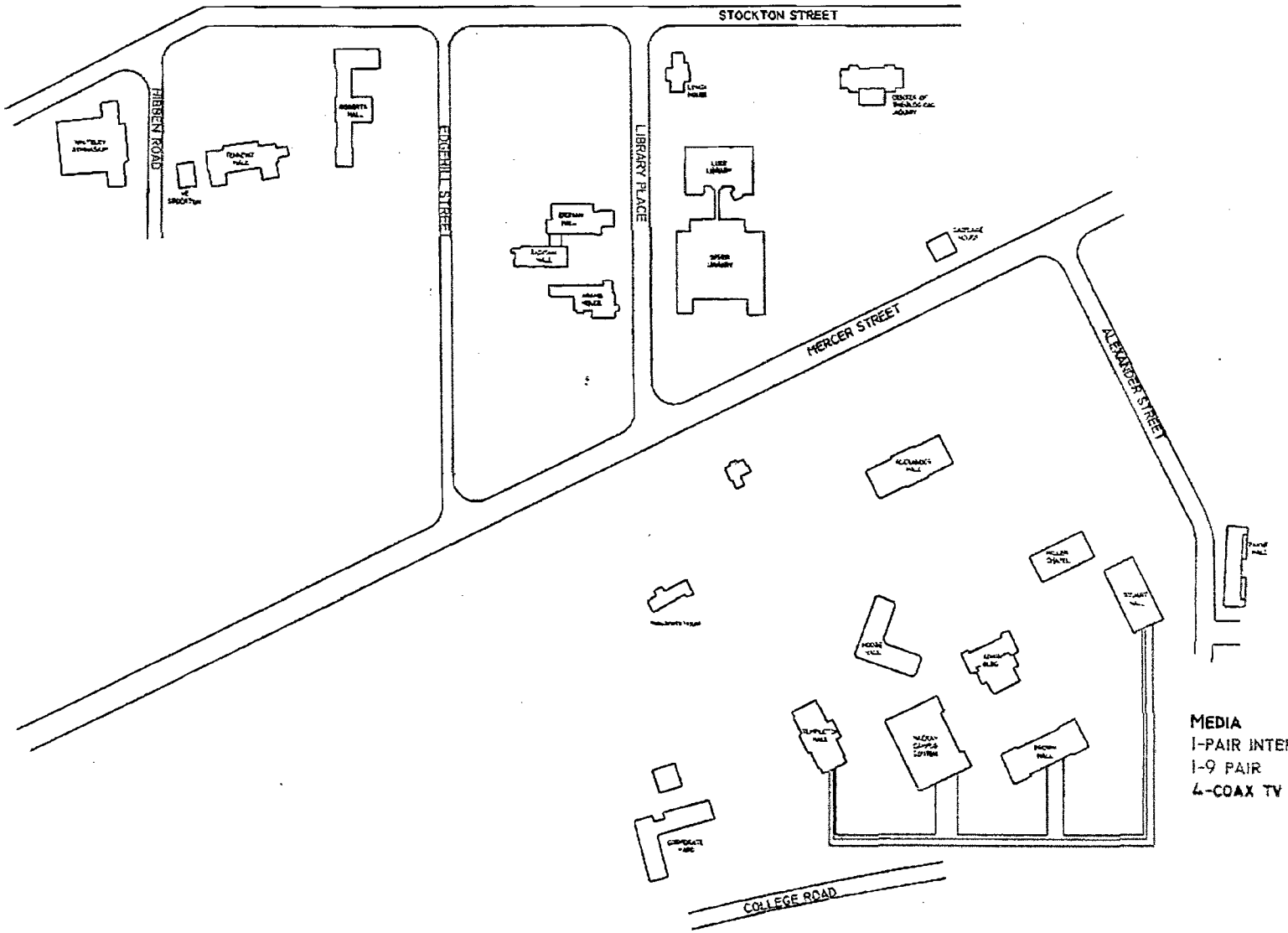
PTS NET LOCATION	FT.	DDC CABLE #	LOCATION
HODGE TO STUART HALL	1,315'	F9	TEMPLETON TO HODGE
STUART TO HODGE HALL	544'	F10	HODGE TO ALEXANDER
STUART TO MILLER CHAPEL	204'	F11	TEMPLETON TO CAMPUS CENTER
HODGE TO MACKAY HALL	795'	F12	TEMPLETON TO BROWN
HODGE TO TEMPLETON HALL	358'	F13	BROWN TO ADMINISTRATION
HODGE TO ALEXANDER	397'	F14	ADMINISTRATION TO STUART HALL
STUART TO ADMINISTRATION	822'	F15	STUART TO MILLER CHAPEL
SPEER TO CARRIAGE HOUSE	589'	F17	TEMPLETON TO CORP YARD
TEMPLETON TO CORP YARD	693'	F19	TEMPLETON TO LUCE
TEMPLETON TO SPEER	1,273'	F20	LUCE TO CARRIAGE HOUSE
SPEER TO LENOX	658'	F22	LENOX TO LUCE
SPEER TO ADAMS	772'	F25	ERDMAN TO ADAMS
ADAMS TO ERDMAN HALL	135'	F26	ERDMAN TO ROBERTS
SPEER TO TENNANT HALL	1,452'	F28	ROBERTS TO WHITLEY
		F29	LUCE TO ERDMAN
		CABLE NOT INSTALLED	

FT.
858'
391
649'
612'
257'
822'
204'
980
1,420
606'
310'
190'
785'
445'
470' -

TITLE: PTS MAIN CAMPUS			
DATE: 1-8-99	CHECKED BY: CGE/PE	SCALE: 1" = 125'	DRAWN BY: CTB/TSS
APPLIED AUTOMATED ENGINEERING CORPORATION			

JA0610

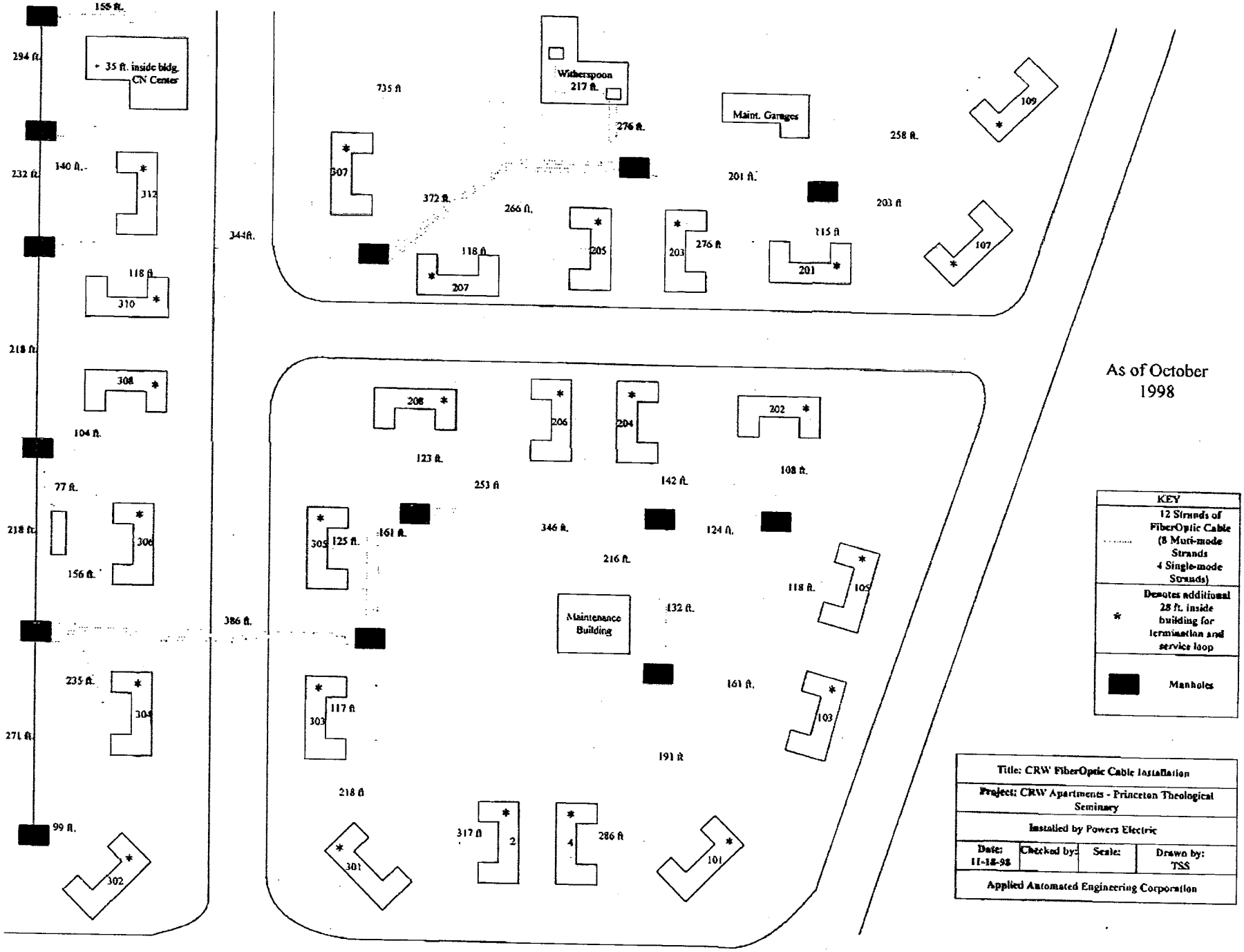
MEDIA



TITLE: PTS MAIN CAMPUS			
DATE: 1-8-99	CHECKED BY: CGE/PE	SCALE: 1" = 125'	DRAWN BY: CTB/TSS
APPLIED AUTOMATED ENGINEERING CORPORATION			

JA0611

Princeton Theological Seminary



As of October 1998

JA0612

KEY	
.....	12 Strands of FiberOptic Cable (8 Muti-mode Strands 4 Single-mode Strands)
*	Denotes additional 25 ft. inside building for termination and service loop
■	Manholes

Title: CRW FiberOptic Cable Installation			
Project: CRW Apartments - Princeton Theological Seminary			
Installed by Powers Electric			
Date: 11-18-98	Checked by:	Scale:	Drawn by: TSS
Applied Automated Engineering Corporation			

Princeton Theological Seminary

Hardware - Estimated End of Sales/Support 2010 to 2019

Model #	Description	Estimated End of Sale Date	Estimated End of Support Date	Estimate Replacement Cost
MCS-7835-H2-ECS1	Call Manager MCS-7835-H2; Rack; Unity; 2GB; SAS RAID	2010	2014	8,000.00
MCS-7835-H2-ECS1	Cal Manager MCS-7835-H2; Rack; Unity; 2GB; SAS RAID	2010	2014	8,000.00
MCS7835H2-K9-CMC1	Call Manager MCS 7835-H2 Unified CM 7.0 Appliance	2010	2014	8,000.00
MCS7835H2-K9-CMC1	Call Manager MCS 7835-H2 Unified CM 7.0 Appliance	2010	2014	8,000.00
MCS7835H2-K9-CMC1	Call Manager MCS 7835-H2 Unified CM 7.0 Appliance	2010	2014	8,000.00
MCS-7825-I4-IPC1	Call Manager MCS 7825-I4 Server	2013	2018	6,000.00
WS-C4506E-S6L-96V+	4506-E Chassis	2013	2018	26,000.00
WS-C4900M	Base system with 8 X2 ports and 2 half slots	2014	2018	35,000.00
WS-C3750G-12S-E	Catalyst 3750	2013	2017	8,000.00
WS-C3750V2-24TS-S	Catalyst 3750V2	2013	2017	3,500.00
C2911-VSEC/K9	Cisco 2911 UC Sec. Bundle	2015	2019	2,800.00
CISCO3925-V/K9	Cisco 3925 UC Bundle	2015	2019	17,000.00
AIR-CT5508-100-K9	5500 Wireless Controller	2015	2019	18,000.00
AIR-CAP350	Cisco3502 access point	2015	2019	650.00
WS-C2960S-48FPD-L	Cataylst 2960S switch 48 Port POE	2015	2019	4,300.00
WS-C2960S-48TD-L	Cataylst 2960S switch 48 Port	2015	2019	3,300.00
WS-C2960S-48LPD-L	Cataylst 2960S switch 48 Port POE	2015	2019	3,500.00
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP	2015	2019	4,500.00
AIR-LAP1522AG-A-K9	802.11a,b/g Outdoor Mesh AP, FCC Cfg	2015	2019	2,000.00
WS-C2960S-24PD-L	Catalyst 2960S 24Port Gig PoE 370W 2x 10G SFP LAN Base Switch	2015	2019	2,800.00
WS-C2960S-24PS-L	Catalyst 2960S 24 GigE PoE 370W, 4 x SFP LAN Base	2015	2019	2,000.00

APPENDIX E TRAINING DEVELOPMENT PROGRAM

JA0614

COPY

APPENDIX A

REVISED COVER PAGE

Name of Institution: Princeton Theological Seminary

Project Name: Learning Spaces: Training Room

Total Project Cost: $ 227,422.99

Address: 64 Mercer Street, P.O. Box 821

Princeton, New Jersey 08540-0803

Contact Person: Mr. Adrian Backus

Title: Vice President for Information Technology

Signature: Adrian Backus

Telephone: (609) 497-7837

Fax: (609) 524-6020

E-mail: adrian.backus@ptsem.edu

Included herein is an Application for a Project that seeks funding from the following grant programs in the amounts indicated below:

$ 113,711.50 Higher Education Technology Infrastructure Fund

$ 113,711.50 TOTAL AMOUNT OF GRANT REQUESTED FOR PROJECT

APPENDIX B

REVISED CHECKLIST

	Bond Act	CIF	HEFT	HETI	ELF
All Programs:					
Cover Page				✓	
Checklist (Appendix B)				✓	
4 Page Summary				✓	
Institution Resolution				✓	
Project Description				✓	
Programs to be served				✓	
Q&A Documentation Cert				✓	
Addenda Cert				✓	
Program Specific:					
Construction Ready				N/A	N/A
Cost Effective (Different for each Program)				✓	
Long Range Facilities Plan				N/A	N/A
Long Range Technology Plan	N/A	N/A	N/A	✓	N/A
State funded facilities & maintenance				N/A	N/A
Narrative re: Selection Criteria (different for each program)				✓	
Source of Matching Funds		N/A	N/A	✓	N/A
Source of Debt Service Match	N/A		N/A	N/A	
Reimbursement				N/A	N/A
How addressed needs of LRP, increases capacity & direct benefit to students		N/A	N/A	N/A	N/A
Description of renewal & renovation & how advances LRP	N/A		N/A	N/A	N/A
If support facilities, demonstrate no more than 20%	N/A		N/A	N/A	N/A
If not renewal & renovation, evidence of 7.4.2 (9) (a), (b) or (c)	N/A		N/A	N/A	N/A
Schedule for acquisition of equipment	N/A	N/A	N/A	✓	
How enhances interinstitutional interconnectivity (part of 7.6.2(3))	N/A	N/A	N/A	✓	N/A
How advances to next level of technology integration	N/A	N/A	N/A	✓	N/A
How Compatible with State Technology Plan	N/A	N/A	N/A	✓	N/A
How relates to mission & plan	N/A	N/A	N/A	N/A	
Process to generate application	N/A	N/A	N/A	N/A	
Description of Equipment Purchase	N/A	N/A	N/A	N/A	
Program Specific Certifications:					
Certificate C		N/A	N/A	N/A	N/A
Certificate D	N/A		N/A	N/A	N/A
Certificate E	N/A	N/A		N/A	N/A
Certificate F	N/A	N/A	N/A	✓	N/A
Certificate G	N/A	N/A	N/A	N/A	

Introduction

Princeton Theological Seminary is a denominational school offering ecumenical and interdenominational graduate theological education. Founded by the Presbyterian Church over 200 years ago in Princeton, New Jersey, the Seminary educates men and women of the State of New Jersey for traditional church leadership and, increasingly, for employment in many professional, humanitarian and corporate endeavors to which they bring the added dimension of faith. New Jersey students comprise approximately 15% of the institution's enrollment in any given year. The Seminary also attracts students to its campus from all parts of the United States and has a worldwide constituency, as well. In academic year 2012-13, 42 states are represented on campus, as well as 19 foreign countries, the Commonwealth of Puerto Rico and the U.S. Territory of Guam. There are currently more than 500 students enrolled in six degree programs.

5.1 Eligibility

5.1.A Eligibility

The Institution: Princeton Theological Seminary is a private nonprofit institution of higher education authorized to grant advanced academic degrees. The Seminary is accredited by the Association of Theological Schools (ATS) in the United States and Canada, as well as by the Middle States Commission on Higher Education (MSCHE), one of three accrediting Commissions of the Middle States Association of Colleges and Schools. The following six degree programs are approved: Master of Arts (MA), Master of Divinity(MDiv), Master of Divinity/Master of Arts (MDiv/MA) Dual Degree program, Master of Arts - Theological Studies (MA(TS)), Master of Theology (ThM), and Doctor of Philosophy (PhD).

5.1.B Technology infrastructure

Building on its past investments in infrastructure, PTS is moving to its third generation converged network. This is expected to support high definition video conferencing, telepresence capabilities, and on and off-site training possibilities to the new Training Room, increase its telecommunications offerings, as well as facilitate access to key video, audio, and data resources. This infrastructure is expected to remain compatible with other intra-institutional systems, and continue to be compatible with inter-institutional communication, with the resources available for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

5.1.C. Advancing the Institution:

In 2001, Princeton Theological Seminary was one of the first academic institutions of higher education in the country to adopt a converged technology solution to integrate video, voice and data. The Seminary has over a decade of experience in leveraging integrated technology. This project will expand the delivery of Seminary's training programs.

The Training Room, with plans to be unveiled in January 2014, will serve the key need of adding a space necessary to focus on training to the Seminary community and its partners. For a decade, training has been conducted in a renovated Media Studio, which at the time, failed to live up to its full potential. Since transitioning to a training focus, the Media Studio is one of the most widely booked rooms on campus, where students, faculty and staff regularly schedule and attend an array of training opportunities from curriculum specific software to citation management software to office productivity. Surprisingly, the need is increasing as the options available to consumers, students, and scholars is wide ranging, and tools best suited for academic

5.1.C. Advancing the Institution (continued)

study often require formal training even for those with a high level of computer skills. The new Training Room allows the Seminary to build on its success in providing training and increase its exposure by targeting off-site participants and allowing training sessions to be accessed asynchronously via the telecommunications infrastructure.

5.1.D. Inter-Institutional Connectivity:

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions. The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey**.

The Seminary has already identified national partners, a notable one being the Administrative Personnel Association of the Presbyterian Church, and is looking to further connect with other institutions. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission by allowing its training programs, both professional and academic, to be accessed and shared with other institutions. The ability for participants to access training remotely allows students from other institutions to sit-in on classes that may not be offered at their home institution.

5.1.E. Compatibility with Technological Infrastructure for New Jersey Higher Education:

This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

5.1.F. Training, Staffing, other Indirect Costs Related to the Project:

Training for staff is included in the cost of the system. No additional funding is needed for that purpose.

5.1.G. Matching Funds Commitment Equal to the Amount of the Grant:

Matching funds equal to the amount of the grant will be provided through Seminary resources.

5.1.H. Resolution of the Board of Trustees to Maintain the Funded Project:

The Board of Trustees of Princeton Theological Seminary has resolved to maintain the funded Project. Please see attached Resolution, executed on March 8, 2013.

7.2 GRANT APPLICATION REQUIREMENTS FOR ALL PROGRAMS

7.2.1.1

See Cover Page

7.2.1.2

See Appendix B for completed checklist

7.2.1.3 Summary

Princeton Theological Seminary seeks to build a Training Room to better serve its immediate constituency of faculty, students and staff and to better connect with existing and new partners in order to provide corporate style on-site and distance training. The Seminary has a strong history of training extending over a decade, which historically has focused on ensuring staff competency from a business operations perspective. With the creation of Academic Services, PTS added training for academic purposes to its suite of offerings to train faculty and students on emerging tools necessary for their academic work. The Training Room will be a twelve seat certified educational space having local and distance teaching/learning communications technology capabilities (presentation lecture capture, collaborative web casting, audio and videoconferencing).

For a decade, training has been conducted in a renovated Media Studio, which at the time, failed to live up to its full potential. Since transitioning to a training focus, the Media Studio is one of the most widely booked rooms on campus, where students, faculty and staff regularly schedule and attend an array of training opportunities from curriculum specific software to citation management software to office productivity. In today's advanced technology age, the need for training is not decreasing. Surprisingly, the need is increasing as the options available to consumers-is wide ranging, and tools best suited for academic study often require formal training even for those with a high level of computer skills.

The Training Room is initially designed for an instructor to teach students on the topic at hand. This is based on the understanding that those who seek training are those who perceive a lack of skills and are looking to enhance their professional or academic competencies. Despite the expertise of the Seminary's training staff, it is occasionally necessary to engage an

7.2.1.3 Summary (continued)

independent expert for a unique training need. Built on the telecommunications infrastructure, the Training Room is able to have remote instructors lead sessions as well as on-site instructors lead off-site classes. This creates a more dynamic, interactive learning environment and need not be restricted to computer and information literacy.

Furnished with the latest equipment (collaborative software, interactive white boards, high-resolution monitors and cameras), the Training Room supports open telecommunications/ network architecture to embrace the spectrum of multimedia functionality and support for an array of peripheral devices. It is adaptively designed to later integrate future technologies deemed vital to the room's success. The construction of the Training Room addresses the Seminary's need for additional space, focuses on small-group in-person training sessions, enables the Seminary's training program to meet the needs of its partners, and addresses the vital elements of the institution's strategic plan, including serving the student body and engaging the global church.

More critical than the equipment is the room's design, which grants flexibility and embraces mobile learning, placing pedagogy first. This gives instructors complete freedom to structure the learning environment to meet their educational aims. Flexibility also implies adaptability. Predicting future technological and pedagogical developments is not possible, but it is possible to design a room capable of adapting to future progress. With both wireless and wired networks based on the institution's information technology and telecommunications network, the room is able to support a range of purposes as well as be reconfigured to support future endeavors. The wireless network and instructor's lecture configuration allow for all participants to use and display materials and content from their own devices. This embraces the

7.2.1.3 Summary (continued)

concept of "the flipped classroom" where roles are flexible and students can become the teacher. With the assistance of the HETI fund, the Training Room is a major addition to the Seminary's programmatic offerings. A summary of project funding is below:

Summary of Project Funding by Project

Project Capital Costs	Internally Funded	HETI Funding Request
$227,422.99	$113,711.50	$113,711.50

7.2.1.4: Resolution of the Board of Trustees of Princeton Theological Seminary

See attached.

ADDENDUM TO PRINCETON THEOLOGICAL SEMINARY RESOLUTIONS
NJEFA CAPITAL FACILITIES PROGRAM

In connection with Princeton Theological Seminary's application for state funding through the Higher Education Technology Infrastructure Fund, its Board adopted resolutions on March 8, 2013 that include approval of "the undertaking, implementation and financing" of a "Project" consisting of (a) Enhanced IT Infrastructure for Renovated Luce Library; (b) Learning Spaces: Time Presence Place Room; and (c) Revamped Cooper Conference Room.

It has become apparent since approval of these resolutions that planning for a different "Learning Space" within the same Luce Library is further along in the planning process than the Time Presence Place Room, and hence the Seminary is now providing documentation for a revised "(b)" above: Learning Spaces: Training Room. The intention to include this Learning Space in the renovated Luce Library has existed since 2010 when the Board approved moving forward with construction of its new library and the Luce Library renovation. Minutes of the July 1, 2010 meeting of the Board provide:

"Dr. Anderson moved that the Board proceed as soon as possible with the construction of the library. As it was the recommendation of a committee, there was no second. On a vote being taken, all were in favor, and none were opposed."

In essence, we are asking at this time to substitute the Training Room for the Time Presence Place Room, both of which have been approved by Board resolutions/actions.

Respectfully Submitted,

John W. Gilmore
Senior Vice President and Chief Operating Officer
March 22, 2013

7.2.1.5.A Project Design Information (continued)

An eighty-seven inch diagonal interactive white board (IWB) will be centered on the front east wall. A wall recessed tilt open rack with Blu-ray DVD player and laptop I/O interface will be installed at the left of the IWB, and a dockable system control touch panel will be adjacent to both the previously mentioned devices. Also, situated on the east wall above the IWB will be a low lux high-res HD PTZ audience capture camera for lecture capture, videoconferencing and webcasting.

There will be an interactive pen display installed at the instructor's desk; the student desks will be equipped with basic PC monitors. The interactive pen display will allow the instructor to interact with students' computers and IWB in HD. Bridgit conferencing software will be installed so the instructor can collaborate remotely with up to 9 students (mark up documents and share files). Additionally, Notebook collaborative software will be included to allow the instructor to create, deliver and manage interactive course materials. Also, Meeting Pro interactive whiteboard application software will be provided and configured so the instructor can write notes in digital ink, annotate over documents and web applications and save everything to a single file.

At the west end of the room there will be a ceiling mounted HD auto tracking presenter camera and 42-inch LCD confidence monitor for lecture capture, videoconferencing and webcasting applications.

The Training Room's core presentation component shall be a high resolution interactive whiteboard capable of handling standard and high-resolution video, and computer generated images. A full array of audiovisual devices shall be made available to the training room instructor, including VCR (optional), DVD, computer and a document camera (with all scaled

7.2.1.5.A Project Design Information (continued)

for a symmetrical viewing experience). Individual instructors shall be able to control all room A/V functions from a dockable wall mounted Wi-Fi touch panel, or allowance shall be made for an experienced technician to take over from either one of two control rooms or by a remote enabled PC, using room view and e-control technology.

The instructor will have a high-res portable document camera that can be plugged into the system via a floor box connection under the desk.

The A/V system shall include an A/V bride so the room's user devices (e.g. instructor PC, document camera, DVD player and room cameras) can be integrated into soft codec's like Skype, Cisco Jaber, Microsoft Lync, Google hangout and others.

Webcasting, videoconferencing and lecture capture shall all utilize the east IWB and camera and the west camera and monitor to broadcast from the room and view remote sites.

The computers in the Training Room will be networked and configured, and from the instructor's PC, all student computers can be monitored, projected onto the room's display or controlled.

The room's audio systems will be comprised of ceiling installed 8-inch loudspeaker assemblies for program audio and speech reinforcement, a ceiling installed microphone array for 360 degree voice capture, an instructor's personal wireless body pack microphone system, audio conference equipment and a sound structure system to integrate all audio components.

PTS envisions that the Training Room will project instruction to remote campus locations via the existing campus-wide A/V hybrid coaxial and fiber network. Therefore, the Training Room shall be integrated into the campus-wide A/V network using fiber multiplex technology, such that several channels of teaching content can be distributed to other buildings/rooms on

7.2.1.5.A Project Design Information (continued)

campus for overflow, broadcast over the PTS private cable TV system or capture and/or archive and stream live/post from equipment in any one of the campuses A/V control rooms.

The Training Room technology will support open telecommunications/network architecture so that any computer platform and software, such as PC, Mac, Microsoft, Apple, etc. can plug-in and integrate with any data or videoconferencing System(s) or any multimedia peripheral including monitors and other 4G technologies. The design should provide a migration path for integrating current campus-wide equipment with any emerging or future technologies.

7.2.1.5.B. General Project Budget

Training Room

Component	**Cost**	**HETI Funding Request**
Equipment	$166,422.59	$83,211.30
Installation	$61,000.00	$30,500.00
Total Cost	**$227,422.59**	
Total Funded by PTS Budget		**$113,711.30**
Total Funding Request, HETI		**$113,711.30**

7.2.1.5.C Budget for Project Lifespan

Expenses have been calculated over the expected 5 year life of the project. Anticipated areas of expense include equipment acquisition, installation services, and ongoing maintenance and operating expenses. Some costs are one time up-front, and others are budgeted annually.

Capital Expenses

		HETI Funding Request		PTS Capital Funded
Initial Purchase	$	113,711.30	$	113,711.30
Subtotal:	**$**	**113,711.30**	**$**	**113,711.30**

7.2.1.5.C Budget for Project Lifespan (continued)

Ongoing Operating Expenses

	PTS Operating Budget	5 Year Total, PTS Operating Budget
Annual Maintenance Costs	$6,000.00	$30,000.00
Annual Operating Expenses	$4,500.00	$22,500.00
Subtotal:	$10,500.00	$52,500.00
	Subtotal, HETI Funded:	$113,711.50
	Subtotal, PTS Capital Funded	$113,711.50
	Subtotal, 5 Year PTS Operating Budget	$166,211.50
	Project Total, 5 Years:	**$279,922.99**

7.2.1.5.D Planned Project Lifespan

The overall lifespan of the project is expected to exceed five years, before new technologies are expected to make replacement more cost effective than continued maintenance. Select individual components have significantly longer expected useful lifespans, providing additional long-term value from this project

7.2.1.6 Academic and/or Research Programs served by the Project; Enhancement of the Academic Capacity of the Institution

The Training Room will have an immediate impact on training at the Seminary from an academic perspective. Ranging from improving students' information and digital literacy to displaying the possibilities of sophisticated qualitative analysis software to rising scholars, the training room provides the beginnings of success for many students, something unique to PTS among its peer institutions. For a decade, training has been conducted in a renovated Media

7.2.1.6 Academic and/or Research Programs (continued)

Studio, which at the time, failed to live up to its full potential. Since transitioning to a training focus, the Media Studio is one of the most widely booked rooms on campus, where students, faculty and staff regularly schedule and attend an array of training opportunities from curriculum specific software to citation management software to office productivity. Surprisingly, the need is increasing as the options available to consumers, students, and scholars is wide ranging, and tools best suited for academic study often require formal training even for those with a high level of computer skills.

The need goes beyond computer literacy and computing skills and into the academic realm, as well, as teaching information literacy is critical for today's students. At a graduate institution, academic success is directly tied to one's ability to navigate the library's resources. The Seminary's Academic Services department, under the umbrella of Information Technology, has successfully partnered with the library for the past four years to address distinct literacy skills. By jointly focusing on resources and strategies, PTS is able to demonstrate the interconnectedness of library and IT. Sessions have traditionally been held in a variety of locations since scheduling is so difficult. Having a dedicated space to conduct future sessions will allow the Seminary to reach more students and offer a wider range of courses.

The new Training Room affords PTS the option of carrying out long distance learning opportunities for students and partners. Certain elements of the Early Orientation Program can be offered prior to students arriving on campus, which equips them for success sooner and eases their period of adjustment to graduate school. The elements of the room allow for both synchronous and asynchronous learning as students can virtually attend live classes as well as access previously recorded sessions, which gives learners greater freedom.

7.2.1.6 Academic and/or Research Programs (continued)

This possibility for off-site learning, combined with IT's commitment to live into the aim of the new library building, which is being referred to as a library for the world, paves the way to establish new partnerships. IT has already identified and is building relationships with external organizations. One example is the Administrative Personnel Association of the Presbyterian Church (APA), which offers a range of professional development opportunities for support staff. As APA members often work in churches, many of which have PTS graduates serving as pastors, they are a natural partner but one with limited financial resources. APA members can benefit professionally by achieving appropriate certifications in order to not only improve their skillset, but expand their employment options. The Seminary is already taking first steps by offering training to APA members in June 2013, but the addition of the training room allows for a greater number of participants who will be able to connect from any location where an Internet connection is available.

Since its formation, Academic Services has offered training for software and technology tools to faculty and students to improve their academic experience and productivity. This training service, unique among the Seminary's peer institutions, allows greater flexibility and experimentation. Faculty are able to boldly attempt new pedagogical strategies, students can be more efficient when studying ancient texts, and scholars can more effectively collect and analyze research data pertinent to their work and advancing scholarship. Below is a sampling of academic specific technology training courses.

- Blackboard: The Seminary has been on Blackboard for a decade using it as its Learning Management System (LMS). Training in group settings, as well as individual support when necessary, is available to faculty and teaching assistants to better organize, structure

7.2.1.6 Academic and/or Research Programs (continued)

and shape online course components. By focusing on LMS tools as they relate to pedagogy, Academic Services is able to have a positive impact on students' success by assisting faculty to shape and deliver their courses.

- NVivo: NVivo is a sophisticated qualitative analysis software tool used by faculty and PhD students to organize research and advance scholarship. Academic Services has worked with faculty projects funded by external foundations to study young adults and their approach to spirituality. Faculty also seek training to equip PhD students to teach research skills and organize the resulting information. This is a competency that must be developed for the successful completion of the doctoral program and for professional success in the academy.
- Accordance/BibleWorks: Key to theological education is the scholarly study of ancient texts, notably biblical texts. By investigating the text from an historical and literary perspective (made easier with these software titles), students are able to better grasp the development and evolution of ancient texts. Such investigative study creates greater appreciation for a variety of textual interpretations and appreciation of different cultures.
- Multimedia Software: A rising element of the curriculum is producing audio and visual material in addition to traditional papers and exams. Film production, graphics, and audio recording are increasingly built into course syllabi. The Media Lab has offered multimedia training to introduce students to options and improve their ability to produce non-traditional scholastic content. Final Cut Pro, Photoshop, as well as open source solutions like Audacity enhance the faculty's pedagogical options.

7.2.1.6 Academic and/or Research Programs (continued)

- Productivity Software: Office productivity software has always been offered to Seminary support staff and with the formation of Academic Services, this training has been made available to students, which is crucial for student success. Key aspects of this suite of services include word processing, spreadsheets, presentation software and document management. While playing a significant role in students' success at the Seminary, it also leads to professional success as many graduates serve smaller non-profit agencies and congregations without budgets for administrative assistants.

Princeton Theological Seminary's training program has a direct connection to students' academic and professional success. The new Training Room ensures the continuation of success by offering a wider selection of classes and expanding offerings to include emerging technologies.

7.2.1.7

See attached Certifications: Appendix H Question and Answer Documentation Certification and Appendix I Addenda Certification

7.6 GRANT APPLICATION REQUIREMENTS FOR HIGHER EDUCATION TECHNOLOGY INFRASTRUCTURE FUND GRANTS

7.6.1 Application must provide:

7.6.2.1 Schedule of Acquisitions and Project Completion

Project Start Date	Completion Date
July 2013	January 2014

7.6.2.2 Cost Effectiveness

7.6.2.2.A Cost Data

Project itemization costs:

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	CREST TPMC-8X·GA	Isys 8Ain WiFi Touch Panel	2,235.00	2,235.00
1	CREST TPMC-8X-DSW	Wall Mt Docking Station for TPMC-8X	1,176.00	1,176.00
1	CREST PMK-8X-DSW	Pre-Const Wall Mt Kit for TPMC-8X-DSW Wall Mt Dkng Sta	59.00	59.00
1	CREST CNPWS-75	External Cresnet PS 75 watt	265.00	265.00
1	CREST CNXRMAK	Rack Mt Kit for up to 3 C2N-HBLOCK and CNPWS-75	88.00	88.00
1	SMART SBX8851X	Board X885 w/UX60 Projector	4,988.00	4,988.00
1	SMART CAT5-XT-ll00	CAT 5 to USB Extender, CAT5 Cable not included	83.00	83.00
1	SMART SP518-NB	Podium 518 interactive pen Dsp w/Notebook Sftw	1,961.00	1,961.00
1	SMART SMP-UPK	Notebook to Meeting Pro Upgrade Kit	842.00	842.00
1	SMART BSS-MAX	Bridgit Server Software Includes SOO Concurrent User Lie	6,965.00	6,96S.00
1	SMART SMP-UPK	Notebook to Meeting Pro Upgrade Kit	842.00	842.00
1	SMART Technologies	Meeting Pro Software	6,965.00	6,965.00
1	Netop Vision Pro	Classroom Management Software License For 1 Teacher & 15 Students	649.00	649.00
1	Discovery Education	Web 2.0 Tools		

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	VADDI 999-6956-000	WaliVIEW HD-20 DVIIHDMI	4,842.00	4,842.00
1	NEC V321-2	V321-2 32in LCD Public Dsp Mon 1368x768 (WXGA) Black	569.00	569.00
1	CHIEF MCSU	Mid Size Ceiling Mount	168.00	168.00
1	VADDI 999-7260-000	AutoTrak 2.0 with HD-20 PTZ Camera	12,833.00	12,833.00
1	VISIX AXIS-TV-1500l	Meeting Minder Room Signage	2,923.00	2,923.00
1	VISIX PGM	Programmin	181.00	181.00
6	SOUND THD72WC	Spk Pkg C10T7215W T62-8	38.00	228.00
3	DMI CONVMBHS2	Mini Converter, HDMI to SDI 2 (PS Incl.)	276.00	980.00
1	CONRE 232-ATSC+	HDTV Tuner, Includes HD2-RC Remote	819.00	819.00
1	CONRE RK1-HD+	Single rack kit for 232-ATSC+ Tuners, 2RU	47.00	47.00
1	VADDI 999-7230-000	Optional EasyTalk Wireless Audio Interface for AutoTrak 2.0	880.00	880.00
1	EXTRN 60-850-01	Xpa 2001-70V, 70 V Mono Power Amp, 200 Watts 404.00		
1	EXTRN 60-190-01	Rsu 129, 1U 9 Sin Deep Univ Rack Shelf Kit	76.00	76.00
1	lISTN LS-16-072-01	ADA Std Stationary FM Sys (72 MHz) (NA)	1,261.00	1,261.00
1	lISTN LA-122	Univ Antna Kit 72 and 216 MHz	68.00	68.00
2	lISTN LR-400-072	Port Display FM Receiver 72 MHz	119.00	238.00
2	lISTN LA-164	Ear Speaker	11.00	22.00
2	lISTN LA-166	Neck Loop	42.00	84.00
1	lISTN LA-321	8-Unit FM Products Charging/Canrying Case	443.00	443.00
2	lISTN LA-362	Rechargeable AA NiMH Batteries Pkg. of 2	8.00	16.00
1	POLYC 2200-33120-001	SoundStructure C12 - Twelve-ch AEC/Noise encl	5,375.00	5,375.00
1	POLYC 2200-33080-001	SoundStructure C8 - Eight-chan AEC/Noise encl	4,132.00	4,132.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	POLYC 2200-3500S-001	SoundStructure VolP Interface SIP interface with HDVoice	613.00	613.00
4	REVOL 01-HDEXEMIC-11	HD Microphone, RF-Anmor	286.00	1,144.00
1	REVOL 01-HDEXEC4-NM	Executive HD Sys 4-Channel	3,356.00	3,356.00
4	REVOL 01-HDXLRMIC-11	HD Microphone, XLR PIU9 On	286.00	1,144.00
1	SHURE SM58S	Card Dynam, On-Off Switc	98.00	98.00
2	SHURE SM58-X2U	Card Dynam Mic w/X2U XLR-to-USB Signal Adpt	139.00	278.00
1	CREST AV2	Eco Dual Bus Ctrl Sys1 loBus slot	1,412.00	1,412.00
1	CREST CAGE2	3-Crd V-Bus Exp Cage for A2	294.00	294.00
1	CREST C2ENET-1	Sgl Port 10/100BaseT Ethernet Crd	545.00	545.00
1	CREST C2COM-2	2 Port RS-23214221485 Crd for Y-Bus Exp Slot	294.00	294.00
1	CREST CEN-WAP-ABG-C	Ceiling Mt 802.11 alblg Wireless Access Point M	235.00	235.00
1	CREST CEN-SW-POE-5	5-Porl PoE Switch	235.00	235.00
1	CREST DM-MD16X16	16x16 Dig Med Switcher	5,059.00	5,059.00
1	CREST DMC-C-DSP	DigMed 8G STP In Cd wlDown-mixing for DM swtchrs	765.00	765.00
2	CREST DMC-HD-DSP	HOMI In Crd wlDSP for OM Switchers	588.00	1,176.00
4	CREST DMC-DVI	DI/RGB In Crd for DM Switchers	471.00	1,884.99
1	CREST DMCO-5300	Outpt Cdw120M 8G, 2 Stereo Anal	1,212.00	1,212.00
2	CREST DMC-SDI	SDl In Crd for OM Switchers	706.00	1,412.00
1	EXTRN 60-806-01	Hdmi 201 TxlRx, Hdmi Twisted Pair Extender	474.00	474.00
1	VADDI 999-8210-000	AV Bridge - HO Video Encoder	1,580.00	1,580.00
1	TVONE IT-C2-750	Dual PIP DVI-I Scaler wlKey, Max DVI 1920x1200, 1080p	698.00	698.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	VCA PORTABLE CART I0 PANEL	Custom I0 Panel	197.00	197.00
1	VISIX AXIS-TV-15001	Meeting Minder Room Signage	2,922.00	2,922.00
1	VISIX PGM	Programming	181.00	181.00
1	TRIPP HTR15-2U	Pure Sine Wave 1500VN1200Won-line, double conversation	1,170.00	1,170.00
1	MIDDL MRK-4431	44 Sp 77ln, 311nd Gan9 Rk w/Rr Door, Blk 7	21.00	21.00
1	MIDDL PDT-2015C-NS	20 Outlet, S9115 Amp circuit Thin PStrip w/cord	113.00	113.00
1	MIDDL AXS-FAN	4 1/2in Low-Profile Fan for Axs Ser 57 elm Vac cord 115	41.00	41.00
1	TASCM DV-D01U	DVD Player w/RS-232 Control Port 1 RU	477.00	477.00
1	CREST DM-TX-201-C	Di9 Med 8G STP TX 201	789.00	789.00
1	EXTRN 60-1022-01	PS 124, 12 VDC Rk Mt, Multiple Out PS	345.00	345.00
1	TVONE IT-C2-750	Dual PIP DVI-I Scaler wlKey, Max DVI 1920x1200, 1080p	698.00	698.00
1	TVONE RM-230	Sin91eIDuai RkMt Frame for IT-C2-1001200 Ser Product	68.00	68.00
1	VADDI 998-0000-003	l-RU Rack Panel for PresenterPOD Interface	49.00	49.00
1	NETGE FS108NA	Switch 8-Port 10/100MBPS	49.00	49.00
2	CREST DM-RMC-l00-C	Di9 Med 8G STP RX, Room Ctrller 100	529.00	1,058.00
1	MIDDL MV-RR44	44 Sp 77ln MrkNrk Addtl Rail Kit	69.00	69.00
1	MIDDL SPN-44-312	Pr Of Side Pnls, Fits Mrk-4431 & Wrk-44-32, Blk	414.00	414.00
1	MIDDL CBS-MRK-31		115.00	115.00
12	SPECTRUM INDUSTRIES	72" Evolution Double e-FPM Desk	8,652.00	51,912.00
1	SPECTRUM	40" Evolution Double e-FPM Desk	4,326.00	4,326.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
	INDUSTRIES			
12	PLANAR PLL2010MW	20 INCH WIDE LED MONITOR	180.00	2,340.00
1	SMART SP518-NB	Podium 518 interactive pen Dsp wlNotebook Sftw	1,961.00	1,961.00
1	ADESS WKB-4200UB	Wireless keyboard (for instructor)	73.00	73.00
13	HP Optiplex 780	Ultra Small Form Factor PC 9.4" x 2.6" x 9.3" (HxWxD) - Weight: 13.5 lbs. and 12-keyboards (Owner Supplied)	0.00	0.00
1	MIDDL MRK-4431	44 Sp 771n, 311nd Gang Rk w/Rr Door, Blk	722.00	722.00
1	MIDDL MV-RR44	44 Sp 77ln Mrl<Nrk Addtl Rail Kit	69.00	69.00
1	MIDDL PDT-2020C-NS	20 Outlet, Sgl 20 Amp circuit Thin PStrip w/cord	140.00	140.00
1	MIDDL MW-10FT-550CFM	integrated 10in Fan Top, w/1 Fan, 550 cfm, Blk	259.00	259.00
1	MIDDL SPN-44-312	Pr of side Pnls, fits Mrk-4431 & Wrk-44-32, Blk	414.00	414.00
2	MIDDL PD-1215	12 Outlet, Sgl 15 Amp circuit PStrip, Hardwire Terminat	89.00	178.00
1	POLYC 7200-23150-001	HDX 8000-720: HDX 8000 HD camera, HDX mic array, P+C,	9,877.00	9,877.00
1	POLYC 4870-00380-156	TOTAL COVERAGE, 1YR,HDX8000 SERIES	1,199.00	1,199.00
1	POLYC 2215-28283-001	SHELF FOR MOUNTING THE HDX 7000 AND 8000 SERIES CODECS	205.00	205.00
1	APPLE TV Air Play	MULTIMEDIA RECEIVER	100.00	100.00
1	Black Magic HyperDeck Studio Pro	Analog and Digital Recorder	1,800	1,800

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	Aurora Multimedia VPH-100	V-Tune Pro HD	950	950
1	Aurora Multimedia 1RU Rack Mount Ears	Rack Mounting Hardware for the V-Tune Pro HD	30	30
1	Aurora Multimedia IRC-15	Infrared Remote Control for the V-Tune Pro HD	45	45
4	FSR FL-500-6	Floor box	$200	800.00
	TOTAL EQUIPMENT COST:		121,113.00	166,422.99
	ENGINEERING. INSTALLATION & CONSULTING COST:		51,000	51,000
	1YR. WARRANTY COST:	SYSTEM MAINTENANCE SERVICE & TECHNICAL SUPPORT	10,000.00	10,000.00
	TOTAL PROJECT COST:			**227,422.99**

7.6.2.2.B Alternative Approaches

This design comes out of many years of research and system design, giving PTS the opportunity to learn what works and what doesn't. Specifically, the design of this room is the culmination of:

- Experience with a similar room and system

7.6.2.2.B Alternative Approaches (continued)

- Review of best practices discovered through extensive research and review of similar spaces used by other institutions
- Input from end users
- Discernment of what is functionally required for our programs
- Consistency between campus systems
- Efforts to improve efficiency and ease of use
- Regular assessment of a similar system

7.6.2.3 Plan for Technology

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to **enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions and the wider public.** The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey.**

The scope of technological advances proposed in this application will result in the development of online, easily accessible resources for digital and information literacy for the PTS community and beyond. By opening the Seminary's strong training program to others, the

7.6.2.3 Plan for Technology (continued)

Department of Information Technology is fulfilling its internal strategy and contributing to the strategic plan of the institution.

The Seminary's mission is the preparation of men and women for theological leadership; however, the Seminary is also in service to educators, students and lay people throughout the State, the nation, and globally. Its resources are accessed in support of congregations of all denominations and faiths and as resources for the study of history and the demographic movements of populations throughout history. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission.

For Princeton Theological Seminary Technology Plan see PTS Appendix A

7.6.2.4 Advancing the Institution

Princeton Theological Seminary in 2001 was one of the first institutions of higher education in the U.S. to adopt a converged technology solution to integrate video, voice and data. Its early prediction of cost effectiveness has led to reduced phone line costs and full virtualization of all servers. With more than a decade of experience in leveraging integrated technology costs effectively, the Seminary can expand its digital "reach" with the support of the Higher Education Technology Infrastructure grant by making key audio/visual resources accessible to a wider audience.

The funding sought by the Seminary for this project to advance the use of its integrated voice/video/data network operates on three levels:

- Capture and distribute high quality video and data;
- Ensure high reliability and high availability of converged network resources; and

7.6.2.4 Advancing the Institution (continued)

- Extend the reach of its literary, academic and scholarly resources.

These components not only support each other, but provide a synergy that allows the Seminary to move to the next level to utilize its third generation converged IT infrastructure. By building consistency across campus with its other key classroom with built-in conference technologies, the Seminary will be able to provide its outstanding collection of academic materials, targeting a vastly broader community, without constraint of time or place, and across the widest range of technical devices.

7.6.2.5 Compatibility

Compatible with the New Jersey Office of Information Technology 2012 Annual Report (http://www.state.nj.us/it/pdf/2012_Annual_Report.pdf), PTS has implemented a robust IT infrastructure. Starting in 2000, PTS planned and implemented a converged data network, designed to carry voice, video, and data. In 2001, PTS was one of the first institutions of higher education to purchase and implement a VoIP phone system and to replace legacy Centrex phone lines, providing greater services, better integration, and long term cost savings.

This IT infrastructure:

1. Continues to support all departmental and enterprise wide applications and IT systems, hosted both on site, off site, and in the cloud.
2. Is shared and secure within reasonable industry standards
3. Supports emergency communications, via email, web, and telephone based broadcast communication methods

7.6.2.5 Compatibility (continued)

PTS is committed to utilizing this resource to reach local and distant participants in a variety of methods. Whether in Trenton or the UK, participants are able to connect with the Seminary with confidence knowing the content, delivery and security meet appropriate standards and benchmarks.

In June 2012, PTS adopted its Overall Integration Policy to ensure the efficient and effective use, implementation, communication and management of various information technologies across the Seminary campus for faculty, staff, students, alumni/ae and Seminary visitors. The four committees that resulted allow for mission critical issues to be coordinated centrally including but not limited to: Use, maintenance and implementation; Resource management – fiscal, human, technological; Legal, including federal compliance and intellectual property; Information management; Privacy; Security; Risk management; Web use, development and deployment; Training; and Hiring. The integration policy certifies proper governance and planning of IT resources while aligning resources with institutional priorities. The issue of institutional IT governance is covered in the Seminary's Technology Strategic Plan.

PTS is now poised to leverage its past investments in infrastructure, and capitalize on delivering its excellent training resources to the wider public. This is expected to support off-site access and asynchronous learning – for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

7.6.2.6 Matching Funds

Princeton Theological Seminary is committed to matching funds from current institutional accounts as these projects are already budgeted and committed for funding as per the attached Princeton Theological Seminary Board resolution.

7.6.2.7 Selection Criteria

Introduction: In the interests of serving the State that has been home to Princeton Theological Seminary since its founding in 1812, the Seminary seeks to fully satisfy the Selection Criteria as outlined by the State of New Jersey Office of Higher Education. The Seminary is among New Jersey's unique offerings to our nation and to the world. Nothing comparable concerning Protestant Christianity exists for research, reflection and the education of people of faith, whether they serve in ministry or in a great range of professions, including those of educators, corporate leaders, government servants, health care workers, military officers, lawyers, welfare advocates, humanitarians – the Seminary's graduates bring the added dimension of faith to their leadership in numerous careers. **The Seminary is committed to:**

1. **Advancing student education in the State of New Jersey.** As research in the humanities transitions into more digital formats, information and digital literacy remain crucial to the curriculum. The Training Room will allow Princeton Seminary to continue as a leader in theological education by offering its internal training programs to other institutions and the wider public. Training materials for advanced academic software, business productivity software, library resources, and others will achieve wider dissemination through the creation of the Training Room. Infrastructure enhancements will allow for improved and increased storage capacity and create the foundation necessary for longer term projects such as an academic repository containing traditional print material in a digital format, course materials, and videos of on-campus lectures.

2. **Improving and expanding educational opportunities for students:** Currently, the Seminary hosts adult scholars and representatives of congregations from all parts of the State and nation for seminars, workshops and short courses and, for those more distant or unable to travel,

7.6.2.7 Selection Criteria (continued)

webinars are offered on topics of faith. The existing Educational Media encompasses a wide variety of media equipment, support services, and facilities, including audiovisual assistance; audio and video recording services; videoconferencing; webcasting; web streaming; and personal consultation on the selection and use of technologies for curricular needs. The Seminary's Media Center features a combination listening/conference room, a production studio which is also equipped as a "smart classroom," soundproof audio narration booth, recording/editing/ encoding stations, resource duplication stations, and campus cable TV system with local access channels. By upgrading these services, PTS can offer a change in the way religious and theological scholars, students and communities of interest work with texts.

3. Promoting academic research excellence, workforce readiness and the enhancement of the State's academic and economic competitiveness and prosperity by assisting in the production of a highly skilled workforce. As described briefly in the introductory paragraph of Section 5.2, graduates of Princeton Seminary join the State's workforce in an impressive variety of highly skilled professions. Graduates of the Seminary hold positions of leadership in careers that are not usually associated with a theological education. Currently, Seminary alumni/ae in New Jersey are engaged as faculty members in institutions of higher education, in corporate leadership, government, law, as physicians and health care workers, in social work and advocacy. **All that is to say, "A Seminary Education! It isn't just for pastors anymore!"**

One can point out, as well, that the Seminary not only prepares people for the New Jersey workforce but has shown a strong preference to employ New Jersey workers, as demonstrated in the construction of the new library. With very few exceptions, local companies, craftsmen and

7.6.2.7 Selection Criteria (continued)

trades people within a radius of fifty miles of the Seminary have been employed to do the work. An average of 60 – 80 New Jersey workers per day have labored at the construction site throughout the past year, with the maximum number on a single day occasionally reaching 90 individuals. Numbers change according to the skills needed – glaziers, carpet layers, wood craftsmen, stone masons, etc. The Seminary's director of facilities estimates that more than 500 workers from different trades have been involved in the construction of the Library.

4. Promoting innovation and improving the delivery of higher education. Library science has evolved at a pace that leaves many smaller and/or free-standing libraries behind. From the outset, it has been the plan for the Princeton Seminary library to provide training for librarians in the new technologies incorporated in its structure that can be accessed from anywhere in the State. Exposure to the Seminary's training programs can support course work from high school through college and can be provided in on-site conferences, webinars and video-conferences.

5. Advancing study at all levels in science, technology, engineering and mathematics education. Admittedly, these subjects are not featured in a seminary curriculum but practitioners of these disciplines convene at the Training Room to elevate their research and productivity competencies. PTS offers access to the Training Room and, with the upgrades proposed, outside organizations and people serving the interests of the community can benefit form the Seminary's training program, as well. With the additional opportunity to broadcast presentations, the involved audience grows exponentially. To have that ability to communicate widely from a local facility can serve as a tremendous advantage for professionals in the STEM fields.

7.6.2.7 Selection Criteria (continued)

6. Maintaining consistency with the Seminary's educational mission. The proposed project is essential to the Seminary's educational mission. That mission is the preparation of men and women for ministry to congregations and for Christian leadership in communities and professional environments. Especially since Princeton Seminary supports scholarship for advanced degrees, it is imperative that its library offers the tools expected in a major research library. This project will help to meet the growing demand among scholars for electronic and interactive access to the library's academic and research resources.

7. Maintaining consistency with the Seminary's long-range facilities plan for technology. The current deployment of technological enhancements to the Seminary's telecommunications system and services is consistent with the Seminary's original intent since 2001 to leverage the converged use of VoIP (video, voice and data technology) to enhance teaching, learning, and research opportunities in service to our faculty, students and guests.

This effort will be achieved, given the newly implemented technical capacities, i.e., increased bandwidth, networked wireless capacity, etc. Effective online distance learning will be enhanced. More access will be provided to an abundance of newly available digitally stored academic and literary materials developed in an electronically stored format. The upgrade of the current telecommunications infrastructure additionally allows the Seminary to construct and design flexible learning spaces to meet the growing need of its users to connect and access information through mobile, wireless and other devices. Thus, current and future classroom design will be consistent with the newly emerging learning styles of future generations who seek networked learning opportunities. This includes the lifelong learner.

7.6.2.7 Selection Criteria (continued)

To ascertain necessary information from these learners and instructors on an on-going basis, the newly established integration policy reinforces the importance of good governance, and allows the voice of the teachers, learners, researchers, and administration to collaborate and work judiciously towards sustaining this precious gift, the telecommunications network, in a more cost effective way.

This project also mirrors the guiding principles established in the technology plan as the infrastructure permits greater access, is designed to adapt later innovations and promotes collaboration. Thus, the members of the technology department are committed to supporting the mission, vision and values statement of the technology plan which articulates the need to prepare men and women, in accordance with the Seminary's stated mission, for all of the many forms and vocations in ministry, in service to the church and world.

8. Insuring the cost-effectiveness of the proposed infrastructure Project. Financial management at Princeton Seminary is professional and responsible. The Seminary's business office is fully staffed with a controller and assistant controller, accountants, payroll coordinators, a purchasing agent – all supervised by the Seminary's senior vice president, chief operating officer and treasurer and accountable to the Seminary President and the Board of Trustees. Annual financial audits are performed by an outside agency and the Seminary is found to be in full compliance.

9. Proposing an infrastructure Project that is consistent with the State's goals and priorities. This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

7.6.2.7 Selection Criteria (continued)

10. Serving the best interests of higher education in the State as a whole. The stated mission of New Jersey public education is to provide leadership to achieve excellence in education, to advance the State's vision to prepare New Jersey students to contribute to local, national, and international communities. On that basis, Princeton Theological Seminary's service to the State of New Jersey and its students is exemplary. In any given year, the Seminary's student body that ranges from 500 to 550 men and women includes 70 to 80 New Jersey students – always the largest representation of any state. Among the students enrolled for academic year 2012-13, four are studying for the PhD degree, leading to probable careers in the academy. Five seek dual degrees (Master of Divinity/Master of Arts), leading to specialization in Christian Education or youth ministry. The end result for the State of New Jersey is this: 365 churches throughout New Jersey are currently led by a pastor or pastors who are Princeton Seminary graduates. The churches they serve are African Methodist Episcopal (AME), Baptist, Community, Congregational, Episcopal, Greek Orthodox, Lutheran, Methodist, Reformed, Roman Catholic, United Church of Christ, Korean Methodist, Korean Presbyterian, Taiwanese Presbyterian, and Presbyterian Church (U.S.A.). 333 additional Seminary graduates work in New Jersey in humanitarian causes and professions other than church ministry, bringing the additional dimension of faith to their work. Princeton Seminary graduates currently serve as faculty members at New Jersey seminaries (New Brunswick Theological Seminary, the Theological School of Drew University, Princeton Theological Seminary). A total of 1,290 Princeton Seminary graduates live, work or are retired in New Jersey, likely still engaged in community service through volunteer activities.

COPY

APPENDIX A

REVISED COVER PAGE

Name of Institution: Princeton Theological Seminary

Project Name: Revamped Cooper Conference Room

Total Project Cost: $579,778.00

Address: 64 Mercer Street, P.O. Box 821

Princeton, New Jersey 08540-0803

Contact Person: Mr. Adrian Backus

Title: Vice President for Information Technology

Signature: Adrian Backus

Telephone: (609) 497-7837

Fax: (609) 524-6020

E-mail: adrian.backus@ptsem.edu

Included herein is an Application for a Project that seeks funding from the following grant programs in the amounts indicated below:

$ 289,889.00 Higher Education Technology Infrastructure Fund

$ 289,889.00 TOTAL AMOUNT OF GRANT REQUESTED FOR PROJECT

Dr. Iain R. Torrance, President
PRINCETON THEOLOGICAL SEMINARY
Application # 038-03

APPENDIX B

REVISED CHECKLIST

	Bond Act	CIF	HEFT	HETI	ELF
All Programs:					
Cover Page				✓	
Checklist (Appendix B)				✓	
4 Page Summary				✓	
Institution Resolution				✓	
Project Description				✓	
Programs to be served				✓	
Q&A Documentation Cert				✓	
Addenda Cert				✓	
Program Specific:					
Construction Ready				N/A	N/A
Cost Effective (Different for each Program)				✓	
Long Range Facilities Plan				N/A	N/A
Long Range Technology Plan	N/A	N/A	N/A	✓	N/A
State funded facilities & maintenance				N/A	N/A
Narrative re: Selection Criteria (different for each program)				✓	
Source of Matching Funds		N/A	N/A	✓	N/A
Source of Debt Service Match	N/A		N/A	N/A	
Reimbursement				N/A	N/A
How addressed needs of LRP, increases capacity & direct benefit to students		N/A	N/A	N/A	N/A
Description of renewal & renovation & how advances LRP	N/A		N/A	N/A	N/A
If support facilities, demonstrate no more than 20%	N/A		N/A	N/A	N/A
If not renewal & renovation, evidence of 7.4.2 (9) (a), (b) or (c)	N/A		N/A	N/A	N/A
Schedule for acquisition of equipment	N/A	N/A	N/A	✓	
How enhances interinstitutional interconnectivity (part of 7.6.2(3))	N/A	N/A	N/A	✓	N/A
How advances to next level of technology integration	N/A	N/A	N/A	✓	N/A
How Compatible with State Technology Plan	N/A	N/A	N/A	✓	N/A
How relates to mission & plan	N/A	N/A	N/A	N/A	
Process to generate application	N/A	N/A	N/A	N/A	
Description of Equipment Purchase	N/A	N/A	N/A	N/A	
Program Specific Certifications:					
Certificate C		N/A	N/A	N/A	N/A
Certificate D	N/A		N/A	N/A	N/A
Certificate E	N/A	N/A		N/A	N/A
Certificate F	N/A	N/A	N/A	✓	N/A
Certificate G	N/A	N/A	N/A	N/A	

Introduction

Princeton Theological Seminary (PTS) is a denominational school offering ecumenical and interdenominational graduate theological education. Founded by the Presbyterian Church over 200 years ago in Princeton, New Jersey, the Seminary educates men and women of the State of New Jersey for traditional church leadership and, increasingly, for employment in many professional, humanitarian and corporate endeavors to which they bring the added dimension of faith. New Jersey students comprise approximately 15% of the institution's enrollment in any given year. The Seminary attracts students to its campus from all parts of the United States and has a worldwide constituency, as well.

The School of Christian Vocation and Mission (SCVM) is the continuing education department of Princeton Theological Seminary. SCVM's educational programs are known for combining academic rigor with practical application to leadership within civic organizations and churches. SCVM strives to cultivate more informed people of faith, who are also equipped with the mindset, mentors, and practical skills needed to lead congregations, non-profit organizations and community groups in the 21st century.

5.1 Eligibility

5.1.A Eligibility

The Institution: Princeton Theological Seminary is a private nonprofit institution of higher education authorized to grant advanced academic degrees. The Seminary is accredited by the Association of Theological Schools (ATS) in the United States and Canada, as well as by the Middle States Commission on Higher Education (MSCHE), one of three accrediting Commissions of the Middle States Association of Colleges and Schools. The following six

5.1.A Eligibility (continued)

degree programs are approved: Master of Arts (MA), Master of Divinity(MDiv), Master of Divinity/Master of Arts (MDiv/MA) Dual Degree program, Master of Arts - Theological Studies (MA(TS)), Master of Theology (ThM), and Doctor of Philosophy (PhD).

5.1.B Technology infrastructure

Building on its past investments in infrastructure, PTS is moving to its third generation converged network. This is expected to support high definition video conferencing and telepresence capabilities of the Cooper Conference Room, increase its telecommunications offerings, as well as facilitate access to key video, audio, and data resources. This infrastructure is expected to remain compatible with other intra-institutional systems, and continue to be compatible with inter-institutional communication, with the resources available for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

5.1.C. Advancing the Institution

In 2001, Princeton Theological Seminary was one of the first academic institutions of higher education in the country to adopt a converged technology solution to integrate video, voice and data. The Seminary has over a decade of experience in leveraging integrated technology. This project will expand the delivery of educational programs by the Seminary's School of Christian Vocation and Mission.

Cooper Conference Room, where most SCVM events take place, is at the heart of the educational programs offered. The system has now exceeded its life expectancy, however, and is

5.1.C. Advancing the Institution (continued)

due for programmed replacement. This replacement will further enhance Cooper's use and capabilities and make it consistent with other significant campus multimedia upgrades. Once Cooper's technical infrastructure has been updated, however, it will be possible to increase online offerings, create new partnerships with other universities and community groups, and transition the Seminary's Spanish and Portuguese certificate programs into an online format. SCVM will be able to beam lectures and full, year-long certificate programs in several languages to multiple satellite sites around New Jersey.

The SCVM staff has been able to solve many of the content-related issues that still perplex other organizations, such as how to repurpose material for blended and online classes, how to train faculty in different pedagogical strategies and technologies, and how to work with multiple satellite sites at once. The **Lilly Endowment, Inc.**, a foundation that provides support for programs nationwide in theological education, has recognized SCVM's competency in these areas and underwritten the most innovative of SCVM's online activities. To be as effective as possible, however, a smart classroom is needed that is as up-to-date as the School's cutting edge pedagogy. Updating Cooper, as proposed in this project, will have the additional benefit of diversifying and improving the pedagogical tools available to course instructors. Many of the proposed pieces of equipment will increase the quality, variety, and interactivity of the multimedia elements in online classes and broadcasts. The results will be more student engagement, better attainment of learning goals, and improved outcomes.

This project will also allow SCVM to be more fully integrated into the Information Technology infrastructure at PTS. Remote technical support will insure fewer glitches for a better student experience. Finally, the proposed improvements will bring Cooper up to the level

5.1.C. Advancing the Institution (continued)

of another PTS smart classroom located across the street in the Seminary's new library complex. Having two such classrooms in close proximity will provide significant advantages for the Seminary's educational programs and for those of other institutions that use SCVM facilities. Currently, registration for events must be capped at 100 to fit within the physical constraints of the Cooper Conference Room, but, with two rooms equipped with multi-point video conferencing and a full range of multimedia features, it will be possible to host media-rich educational events for groups as large as 200 people.

5.1.D. Inter-Institutional Connectivity

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions. The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey**.

The School of Christian Vocation and Mission has already compiled a wealth of resources accessible to the wider public and has effectively managed the reappropriation and reuse of those resources, thereby expanding their reach. The Seminary's mission is the preparation of men and women for theological leadership; however, the Seminary is also in

5.1.D. Inter-Institutional Connectivity (continued)

service to educators, students and lay people throughout the State, the nation, and globally. Its resources are accessed in support of congregations of all denominations and faiths and as resources for the study of history and the demographic movements of populations throughout history. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission.

5.1.E. Compatibility with Technological Infrastructure for New Jersey Higher Education

This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

5.1.F. Training, Staffing, other Indirect Costs Related to the Project

Training for staff is included in the cost of the system. No additional funding is needed for that purpose.

5.1.G. Matching Funds Commitment Equal to the Amount of the Grant

Matching funds equal to the amount of the grant will be provided through Seminary resources.

5.1.H. Resolution of the Board of Trustees to Maintain the Funded Project

The Board of Trustees of Princeton Theological Seminary has resolved to maintain the funded Project. Please see attached Resolution, executed on March 8, 2013.

7.2 GRANT APPLICATION REQUIREMENTS FOR ALL PROGRAMS

7.2.1.1

See Cover Page

7.2.1.2

See Appendix B for completed checklist

7.2.1.3 Summary

The proposed grant will allow the School of Christian Vocation and Mission (SCVM) at Princeton Theological Seminary (PTS) to expand its successes in online education, strengthen its unique position as a point of contact among universities and communities of learning in New Jersey and beyond, and integrate more deeply into the Information Technology infrastructure at the Seminary.

Princeton Theological Seminary seeks to upgrade SCVM's Cooper Conference Room (CCR), located in the Erdman Center and directly across the street from the Seminary's new library, with 21st century state-of-the-art multimedia functionality. The result will be enhanced SCVM programming and consistency in equipment and functionality across the PTS campus. The new CCR A/V systems will be designed to handle various forms of instructional media in a seamless, integrated fashion and accommodate instructors with varying degrees of "media literacy." This project will provide greater access to PTS resources for residents of New Jersey and beyond. The technological features of Cooper, which is SCVM's main lecture hall, have been critical to the numerous pedagogical innovations that have been achieved, resulting in wide dissemination of educational events of broad interest, such as public lectures on interfaith dialogue, a wide variety of events examining the intersection of science and religion, and an annual conference on faith-based leadership in the public square. Training programs for specific vocations have been offered – some leading to certification for hospital chaplains, volunteers who hold leadership roles in various faith-based settings, pastors, and youth ministers. The IT infrastructure in Cooper, however, is now outdated and unable to support several important functions. The proposed grant will address these problems, empowering SCVM to continue its record of innovation and expand upon its successes.

7.2.1.3 Summary (continued)

Most of the Seminary's continuing education and public information events originate from the Cooper Conference Room where essential technology is installed. Unfortunately, the room's infrastructure is old, no longer reliable, and unable to support some of the key programs that were once offered. With updated technical infrastructure, it will be possible to restore those key programs and increase online offerings. Building on its existing reputation, SCVM will advance its plans to create new partnerships with other universities and community groups. In support of New Jersey's rapidly diversifying population, SCVM will transition the Seminary's Spanish and Portuguese certificate programs into an online format, beaming lectures and full, year-long certificate programs in several languages to multiple satellite sites around New Jersey.

These steps, as outlined, reflect the Seminary's commitment to provide life-long formation and professional development, as set forth in the Strategic Plan adopted by PTS in 2012. Through the capacities of SCVM, the Seminary will work in close partnership with professional schools and other seminaries. PTS will increase its ability to offer technologically enabled courses of study in areas that are recognized as enhancements to the careers of participants, as well as critical to the church and church leaders.

The SCVM staff has been able to repurpose material for blended and online classes, some of which are useful in training faculty in different pedagogical strategies and technologies, and in the techniques necessary to work with multiple satellite sites at once. To continue to do so effectively requires an up-to-date smart classroom with diverse pedagogical tools available to assist course instructors. Many of the proposed pieces of equipment will increase the quality, variety, and interactivity of the multimedia elements in SCVM's online classes and broadcasts, certain to be reflected in better attainment of learning goals, and improved outcomes.

7.2.1.3 Summary (continued)

SCVM will become more fully integrated into the Information Technology infrastructure at PTS through implementation of this project. A better student experience will be enabled with the existence of remote technical support. PTS will have the strong advantage of two smart classrooms on its campus, located in close proximity. This will yield significant advantages for the Seminary's own educational programs and for those of other institutions that use SCVM facilities.

Building on the Seminary's past success of effectively leveraging VoIP for over a decade, PTS is primed to expand and advance the telecommunication possibilities in Cooper Conference Room in order to enhance an already robust continuing education program. Below is a summary of project funding:

Summary of Project Funding by Program

Project Capital Costs	Internally Funded	HETI Funding Request
$ 579,778.00	$ 289,889.00	$ 289,889.00

7.2.1.4: Resolution of the Board of Trustees of Princeton Theological Seminary

See attached.

7.2.1.5 Detailed Description of the Project

Project Overview

Princeton Theological Seminary seeks to upgrade its Cooper Conference Room (CCR) with 21st century state-of-the-art multimedia functionality to enhance the School of Christian Vocation and Mission (SCVM) programming and ensure equipment and functionality consistency across campus. The new CCR A/V systems will be designed to handle various forms of instructional media in a seamless, integrated fashion and accommodate instructors with varying degrees of "media literacy." This project will allow for greater access to PTS resources to residents of New Jersey and beyond.

7.2.1.5.A Project Design Information

This project seeks to enhance and update the functionality of Cooper Conference Room to strengthen the offerings of SCVM by transforming it from its existing legacy presentation and recording capabilities to a true 21st century state-of-the-art room. Please reference PTS Appendix A for elevation plans for Cooper Conference Room.

Various forms of instructional media will be handled seamlessly, as designed in the new CCR A/V systems. Interactive white boards, audio conferencing, videoconferencing, and webcasting must accommodate instructors with varying levels of skill as they offer presentations ranging from simple computer power point presentations to advanced collaborative learning through use of the CCR A/V systems.

The CCR dimensions are 31.5'W x 38'L, with a 9' – 1" ceiling height around perimeter and a significantly higher atrium area at the center, extending roughly the length of the room.

7.2.1.5.A Project Design Information (continued)

The CCR core presentation components shall include a high resolution rear projection system on the west wall and two interactive whiteboards on the north wall capable of handling standard and high-resolution video and computer generated images.

There shall be a lectern at the north/west corner of the room. All room A/V functions can be controlled from the rear system control screen (stage left). (Owner and A/V Vender shall discuss replacement or reuse of existing lectern).

A full array of audiovisual devices will be available to CCR users, including multi-regional VCR (optional), DVD player, computer, dockable touch panel and document camera. All source signals shall be seamlessly scaled for a symmetrical viewing experience. These devices will be installed in the existing wall recessed A/V rack, hence lectern rack, and located directly behind the multimedia lectern for convenient user access (the document camera will be a portable plug-in as needed).

Instructors will be able to control all system functions from a lectern touch panel or lectern wall rack dockable Wi-Fi touch panel. In addition, an experienced technician shall be able to take control remotely from a web browser using soft control via Room View and E-control.

The CCR A/V systems will be designed and installed to accommodate teaching/leaning configurations in both the west-to-east and north-to-south orientations. From the central multimedia lectern, an instructor will be able to address an audience seated in either direction, utilizing two systems with common components (e.g. all lectern devices including the touch panels, speech reinforcement loudspeakers, ceiling microphones, wireless microphones, etc. - available to both systems).

7.2.1.5.A Project Design Information (continued)

There will be an interactive pen display installed at the lectern, configured to allow the instructor to interact with the lectern rack mounted computer in HD and launch, manage and display PC or web applications onto the projection screen or either interactive whiteboard (IWB).

Conferencing software will be installed on the lectern rack PC to enable the instructor to collaborate remotely with up to 9 remote PC sites – distance learning (mark up documents and share files). Additionally, collaborative software will be included to allow the instructor to create, deliver and manage interactive course materials. Interactive whiteboard application software shall also be provided and configured so the instructor can write notes in digital ink, annotate over documents and web applications and save everything to a single file.

The system shall be designed such that an experienced support technician can remotely monitor and/or operate all system A/V functions from either of two existing campus control rooms (new library or Templeton Hall Media Services) or via any control enabled PC).

The instructor will have a high-res portable document camera that can be plugged into the system via a cable cubby located on the lectern as needed.

The A/V system shall include the configuration of an A/V bridge so the room's user devices (e.g. instructor PC, document camera, DVD player and room cameras) can be integrated into soft codec's like Skype, Cisco Jaber, Microsoft Lync, Google hangout and others.

When webcasting, videoconferencing and utilizing lecture capture, the rear projection screen, IWB(s), LCD displays, and cameras will be used in varying combination depending upon the room's configuration.

Lutron lighting and window shades will be controlled from any of the two touch panels located in the CCR.

7.2.1.5.A Project Design Information (continued)

Installation, wiring and technical configuration of the CCR shall include approximately 13-inch ceiling recessed loudspeaker assemblies for speech reinforcement, a microphone array for 360 degree lecture capture, webcasting and videoconferencing, and an instructor's personal wireless body pack microphone system for speech reinforcement.

PTS envisions that the CCR will project instruction to remote campus locations via the existing campus-wide A/V hybrid coaxial and fiber network. The CCR shall integrate the upgraded A/V system with the campus-wide A/V network using fiber multiplex technology, allowing several channels of teaching content to be distributed to other buildings/rooms on campus for overflow, broadcast over the PTS private cable TV system, archiving, lecture capture and/or streaming of live/post from equipment in any one of the campus' A/V control rooms.

The CCR A/V technology must support open telecommunications /network architecture so that any computer platform and software, such as PC, Mac, Microsoft, Apple, etc. can plug-in and integrate with any data or videoconferencing System(s) or any multimedia peripherals, including monitors and other 4G smart technologies. The A/V system design should provide a migration path for integrating current campus-wide equipment with any emerging or future technologies.

The Cooper Conference Room will be furnished with moveable tables and chairs, allowing the configuration of the room to be changed to accommodate various teaching/learning methods/styles.

System Requirements:

The A/V system installation will include a single system capable of two modes of operation. System (mode) 1 shall provide presentation from west to east, and System (mode) 2

7.2.1.5.A Project Design Information (continued)

shall provide presentation from north to south, both of which are controlled from a centralized touch control. The requested System(s) shall include the following audio-visual equipment and functionality:

- Presentation
- Video projection
- Multi-view source capability
- Interactive whiteboard
- Document camera
- DVD/Multi-region VCR
- Computer
- Auxiliary multimedia system inputs
- Amplification
- Teleconferencing and lecture capture
- VTC (P-P and M-P(MCU bridging)
- Voice (P-P and M-P(MCU bridging)
- Lecture capture
- Broadcasting room program to remote rooms on campus (overflow)
- Webcasting
- Streaming
- Centralized System CTL via User Touch Interface
- Electronic Room Signage Indicating Occupancy/Use

7.2.1.5.A Project Design Information (continued)

An umbilical wire harness(s) from the lectern A/V devices back to the equipment racks located in the Projection Room shall be installed.

Note: The umbilical harness(s) and interface connector solution will be fabricated of quality materials and constructed and terminated to be reliable.

Lectern

The lectern will serve as the main point of control for users. Control functions shall be divided between fixed and roving controls. Use of the fixed control functions shall be from a touch panel permanently mounted on the lectern and the roving controls will be from a wireless touch panel docked on the wall.

In addition to manual controls, the lectern shall contain an 18-inch Interactive Pen Display to allow the user to view projected images at the lectern and interact with the Interactive White Boards that shall be installed in the room, as well. Power, data, connections for a laptop computer and auxiliary audiovisual inputs for portable audio and/or video sources shall be located within the lectern work surface inside a cubby.

Other equipment shall include a dedicated gooseneck microphone, multimedia PC, DVD, VCR (optional), document camera, and cable television tuner. Lectern equipment shall include the following:

- (1) Lectern gooseneck microphone (24")
- (1) Dedicated Dell Small Form Factor PC (OFE) – DVI and RGB outputs
- (1)Dedicated professional grade DVD player
- (1)Dedicated professional grade Multi-region VCR (if available)

7.2.1.5.A Project Design Information (continued)

- (1) Dedicated Document Camera
- Cubby with auxiliary audiovisual input connections for:
- A 15-pin HD female and 3.5 mm Stereo Mini Jack for a laptop computer
- BNC female and (2) RCA for composite with unbalanced L/R channels audio
- HDMI with audio channel
- 4-Pin s-video and (2) RCA for s-video with unbalanced L/R channels audio
- RJ-45 data connector
- Duplex power outlets
- (1) Control system touch panel with video window
- (1) Interactive pen display for local PC display and interactive whiteboard interactivity
- PTS logo on front of lectern

Lectern Auxiliary Equipment will include the following:

Speech Reinforcement:

(1) 24-inch flexible cardioid gooseneck microphone (See A/V equipment schedule for details)

(1) Computer (PC):

A multimedia computer (OFE) with CD, USB, connected to the Internet, shall be installed on a shelf in the lectern. The PC shall be configured so room cameras and graphics can be routed to the USB port(s), such that the room's audiovisual resources can be bridged into webcast services e.g., Skype, Microsoft Lync, Google Hangout, ooVoo, etc.

(1) Presentation Remote Control:

7.2.1.5.A Project Design Information (continued)

A remote presentation device shall be available to allow the presenter to move about the lectern while controlling the presentation (OFE).

(1) DVD/CD Player:

A user should be able to walk into the room and electronically project their DVD without any special preparation. Queuing should be available via the touch panel to check the DVD content before projecting it. Transport control shall also be available via the touch panel. This equipment shall be rack mounted in the lectern.

(1) Multi-Region VCR:

Optionally, there shall be a region free VCR shelf mount in the lectern.

(1) Document Camera:

A document camera capable of displaying printed pages, standard transparencies and written notes shall be located in the lectern in a pull-out drawer.

Interactive Pen Display:

A HDCP compliant interactive pen display will be installed at the lectern on an articulating mount. The interactive pen display shall replace the traditional computer monitor and be connected to the PC via USB. The interactive pen display shall also be integrated into the room's audiovisual system via DVI IN/OUT connectivity. Any PC content shown on the interactive pen display shall be routable to the interactive whiteboards or video projector via the rooms touch panels, as the user desires. The interactive Pen Display shall be mounted on an articulating arm at the lectern.

User Interface Touch Panels:

The integration of user interface touch panels will allow for: control of the audiovisual

7.2.1.5.A Project Design Information (continued)

System(s), which shall be a wired lectern top color touch panel and wireless color, touch panel. Such touch panels will be wall mounted in a charging /docking station on the west wall north/west corner of the room. The Control System(s) shall be installed with presets so that a single button push will have the system set-up for different operating modes (system one - north and system two - west operating modes). Features shall include a 9-inch widescreen 24-bit color display, full digital duplex telephone or intercom interface and built-in 802.11a/b/g Wi-Fi card with antenna diversity. The intercom feature shall be enabled and configured to dial the media's A/V help desk support number only. (The IT network administrator will provide a VoIP number and assistance with integration, as needed). Each touch panel shall mirror the other.

Control System User Interface Functions shall include the following:

- Select system one or two operation (only a single system operational at time)
- Video projector on/off/mute (screen shall raise and lower accordingly) – system one only
- Video projector source select (system one only)
- Route signals to Interactive whiteboards
- Room lighting levels up/down/presets
- Room shades open/closed
- Lectern computer routes
- Document camera routes
- Transport control for video cassette player
- Other auxiliary video sources routes
- Transport control for DVD player

7.2.1.5.A Project Design Information (continued)

- Room program volume up/down/mute
- Room cameras (pan/tilt/zoom and routes)
- Video teleconferencing control
- Audio conferencing control
- Route signals to LCD displays
- Interactive pen display
- Multi-view video processor (display more than one image simultaneously on the projection screen and interactive whiteboards via touch panel control)
- Webcast with room A/V resources bridged (via touch panel user can integrate room A/V resources into webcast e.g. room cameras, document camera, etc.)
- Overflow control via matrix routing to other facilities

Lectern Interconnect

Floor boxes

The multimedia lectern shall be located over a floor box at the north/west corner of the CCR. The floor box will contain receptacles for power, Ethernet, along with conduit feeds to the Projection Room for wired connectivity of the lectern devices to the rest of the system (e.g. touch panel and various source audiovisual devices).

West Wall Audio-Visual Technologies (System Mode 1)

Rear Projection Screen:

The existing rear projection frosted glass is located on the west wall. Its dimensions are 8-feet wide by 6-feet high and 10-feet diagonal. Consequent to permanent markings and

7.2.1.5.A Project Design Information (continued)

scratches this surface shall be replaced. The replacement glass shall provide superior performance and be opaque to viewers when not in use.

Projector:

A projector and lens, with a native resolution of full HD WUXGA 16:10 (1900 x 1200) and suitable brightness for the space and environmental conditions specified herein (with a minimum requirement of 4500 lumens color/white light output) will be installed. Additional features should include remote RS-232C and IP control and management, and dual display and optional lenses interchangeability (the dual display functionality shall be integrated into the control system to support multiple visual displays at one time). The projector shall also have HDMI and/or DVI connectivity. All video sources to the projector shall be scaled to a common resolution to achieve seamless switching between video sources. The projector shall be installed in the south to north direction. The selected projector must be capable of handling the following signals:

- HDMI
- DVI
- SD (Comp. and S-Video)
- High-Res Video (RGB+H/V)
- S-Video
- Composite

All incoming video sources shall be scaled to HDMI.

7.2.1.5.A Project Design Information (continued)

**Note: The video projector shall be provided with mounting hardware to facilitate proper mounting and safety conditions.

Dual Image Multi-View Processor

The A/V system shall include a dual-view window processor configured to allow two different sources to be viewed on the projection screen side by side, if desired (e.g. remote presenter and power point presentation). Control will be via A/V touch panels.

Cameras:

Two (2) HD pan/tilt/zoom camera systems will be installed in the existing cubbies on each side of the projection screen for lecture capture, webcasting and videoconferencing (local audience cameras). Equipment/components shall include:

- Video cameras, supplied with required mounting accessories.
- Adapters as required for camera receptacles to mate with signal and control cable.
- PTZ cameras of low voltage, powered from the AV rack. (See Architect electrical and elevation drawings for placement and pre-installed services.)

**Note: Power for the camera already exists at this location.

7.2.1.5.A Project Design Information (continued)

Program Audio Speakers:

The A/V system shall include a pair of program speakers in existing cubbies on each side of the projection screen.

East Wall Visual Technologies (System 1):

Display:

The A/V system shall include one (1) large ceiling mounted 42-inch – 46-inch LCD display at the east end of the room to support webcasting, lecture capture and videoconferencing (local presenter display). Power for the LCD display already exists at this location.

Camera:

One (1) HD automatic-tracking pan/tilt/zoom camera system on the south wall for lecture capture, webcasting and videoconferencing (local Presenters cameras) will be installed. Equipment/components shall include:

- HD automatic-tracking cameras with 2.4GHZ full frequency spectrum audio.
- Video cameras, supplied with required mounting accessories.
- Adapters provided as required for camera receptacles to mate with signal and control cable.
- PTZ cameras of low voltage powered from AV rack. (See Architect electrical and elevation drawings for placement and pre-installed services.)

**Note: Power for the camera already exists at this location.

7.2.1.5.A Project Design Information (continued)

North Wall Visual Technologies (System 2):

Interactive Whiteboards (IWB):

The A/V system shall include two (2) HDCP compliant interactive white boards for local and distance teaching and collaboration, an interactive pen display at the lectern for remote interaction with the IWB.

Two (2) recessed power management and cable storage accessory boxes will be installed, one behind each of the Interactive Whiteboard displays.

The A/V system will include two (2) interactive whiteboards and ultra-short-throw projectors, one on each side of the projection screen over the recessed power management and cable storage accessory boxes.

Displays:

The A/V system will include two (2) large LCD displays mounted on the south wall to support webcasting and videoconferencing (local presenter's confidence displays) and two (2) recessed power management and cable storage accessory boxes, one behind each of the LCD displays.

Cameras:

The A/V system shall include two (2) HD pan/tilt/zoom cameras on the north wall, one located above each LCD display for lecture capture, webcasting and videoconferencing (local audience cameras). Included are:

- HD PTZ cameras.

7.2.1.5.A Project Design Information (continued)

- Video cameras, supplied with required mounting accessories.
- Adapters provided as required for camera receptacles to mate with signal and control cable.
- PTZ cameras of low voltage powered from AV rack..

Program Audio Speakers:

The A/V system shall include a pair on wall-mounted program speaker.

South Wall Visual Technologies (System Mode 2):

Display:

There shall be one (1) large 42-inch – 46-inch wall mounted LCD display mounted on the south wall to support webcasting and videoconferencing (local presenter's confidence monitor). Back-box, power and conduit connectivity to the A/V Control room will be installed.

Camera:

There shall be one (1) HD automatic-tracking pan/tilt/zoom camera systems mounted on the south wall near the LCD display or lecture capture, webcasting and videoconferencing facing north to south (local presenters cameras west/east system configuration). This camera shall be back-to-back with the camera in the Cooper Conference Room. Equipment /components shall include:

- HD automatic-tracking cameras with 2.4GHZ full frequency spectrum audio.
- Video cameras, supplied with required mounting accessories.

7.2.1.5.A Project Design Information (continued)

- Adapters provided, as required for camera receptacles to mate with signal and control cable.
- PTZ cameras of low voltage powered from AV rack.

Audio System:

High quality audio is essential to the operation of the Cooper Conference Room. Proposals shall include the following elements:

- Ceiling mounted speakers (speech reinforcement)
- Wall mounted speakers (program playback)
- Ceiling mounted microphones for the audience pickup during audio/videoconferencing and recording
- Lectern microphone
- Presenter wireless microphone
- Multiple user wireless microphone(s)
- Wall jacks under projection screen for additional microphones (for a panel discussion) – custom I/O panel required by A/V Vendor.
- Wall jacks for stereo line level equipment – on same I/O panel previously mentioned.

Room Audio Technologies:

Ceiling Loudspeakers (common to both systems):

Thirteen (13) ceiling mounted loudspeakers, which shall be proportionally spaced and installed over the audience seating area for speech reinforcement. Additionally, one (1) ceiling

7.2.1.5.A Project Design Information (continued)

mounted loudspeaker shall be installed over the lectern area for audio and videoconferencing.

Wall Mounted Speakers (System One):

Two (2) loudspeakers shall be wall mounted at either side of the projection screen to provide program audio playback from all audio-video sources.

Ceiling Microphones (common to both systems):

Three (3) ceiling-mounted microphones shall be installed over the audience seating area for recording and audio/videoconferencing. Ceiling microphones and back-boxes shall be mounted in acoustical ceiling tiles.

Each microphone shall be supplied with mount/holders and accessories as furnished by the microphone manufacturer. Additional accessories will be supplied to facilitate mounting conditions.

Lectern microphone (common to both systems) equipment and components:

- Gooseneck style, flexible at top and bottom, with a rigid center,
- Matte-black finish with an overall length of 24-inch,
- Removable wind screens,
- Shock-mount with good quality shock isolating base.

Presenter Wireless Microphone System:

Digital wireless microphones full 50Hz-20 kHz frequency response and 1.92 to 1.93 GHz

7.2.1.5.A Project Design Information (continued)

RF band for multiple users and an integrated wireless solution for the presenter using the automated camera tracking system will be installed.

A Multiple User Wireless Microphone System (common to both systems):

Eight channel digital wireless microphone system with (8) lavalier microphones and (4) handheld adapters will be installed.

Wired Microphones (common to both systems):

An auxiliary microphone input panel under the north wall projection screen will be installed.

**Note: 4-Gang back box pre-installed by Builder.

Requirements:

- Wall-Plate: Custom white wall-plate with black engraved or Bakelite labeling of connectors (thin plastic laminate labels not acceptable)
- (4) Microphone jacks XLR-F
- (2) Line ¼-inch TRS jacks
- (4) Speech reinforced microphone shall be provided by Vendor

Assistive Listening System (ALS):

A 72 MHz Frequency modulated Assistive Listening System shall be installed. Note: Antennas shall be installed above dropped ceilings in all teaching /learning spaces (no visible installations).

7.2.1.5.A Project Design Information (continued)

Rack Mounted Equipment:

Audiovisual equipment racks featuring System(s) control, lecture capture, diagnostics shall be located and installed in an adjacent A/V control room. There, a technician can remotely monitor, configure, diagnose and provide other advanced technical services, as needed, or System(s) operation and/or diagnostics. These equipment racks shall house all System(s) equipment and user interfaces.

Audio conferencing (same equipment common to both systems):

A telephone hybrid with distributed echo cancellation and VoIP interface capability that interoperates with leading SIP-based IP PBX and Soft-switch platforms will be integrated and installed. The System(s) shall be integrated into the videoconferencing CODEC and ceiling microphone array functionality or operate independently as an audio only conference system.

Videoconferencing (same equipment common to both systems):

An HD videoconferencing system shall be integrated into the A/V room's presentation system and shall be controllable from the lectern or A/V control room(s). The local room monitors shall display the offsite participants and the local cameras shall transmit the local participants to the offsite videoconferencing facility. Additionally, local and offsite participants shall be able to send and receive multimedia content from one another.

A/V Bridging:

An A/V Bridge that incorporates open standards H.264 /MPEG4/AVC network streaming

7.2.1.5.A Project Design Information (continued)

protocols compatible with QT, Windows Media and VLC players will be installed. The device shall facilitate using the room's A/V system for PC-based unified communications such as Skype, Microsoft Lync and Google+. Since the USB streaming functions utilize MJPEG and standard UVC and UAC drivers eliminating the need for custom software drivers to be installed on the PC, the A/V Bridge shall simply plug into the room's computer USB port.

Environmental Control:

Light Control:

The Lutron lighting system with the A/V control System(s) will be integrated and provide five scene presets via the touch panel interfaces.

Window Treatment:

A RS-232C interface will be pre-installed for remote control and local wall switch control. Electric window shades will be integrated with the A/V control System(s) and provide touch panel control interface.

Room Scheduling:

The CCR shall include a wall-mounted user interface touch panel outside of the room showing the status of potential room use, which allows for room scheduling as needed.

Miscellaneous:

lWeb 2.0 Tools will be installed, which should be used as a comprehensive part of the teaching and learning experience for both teachers and students (i.e., Teacher Portals, Wikis,

7.2.1.5.A Project Design Information (continued)

Blogs, Texting, Online Community, Video Conferencing, Web Conferencing, and Virtual Courses).

Interactive whiteboard (IWB software): Collaborative learning software for creating, delivering and managing interactive educational materials (Smart Notebook, Bridgit and Meeting Pro) will be installed and configured. Features should include the ability to capture text and images as a screen shot that a user can edit, or save notes directly into several software applications, including Microsoft PowerPoint, Word and Excel, Adobe Acrobat and AutoCAD software.

7.2.1.5.B. General Project Budget

Cooper Conference Room

Component	**Cost**	**HETI Funding Request**
Equipment	$399,778.00	$199,889.00
Installation	$180,000.00	$80,000.00
Total Cost	**$579,778.00**	
Total Funded by PTS budget:		**$289,889.00**
Total Funding Request, HETI:		**$289,889.00**

7.2.1.5.C Budget for Project Lifespan

Expenses have been calculated over the expected 5 year life of the project. Anticipated areas of expense include equipment acquisition, installation services, and ongoing maintenance and operating expenses. Some costs are one time up-front, and others are budgeted annually.

7.2.1.5.C Budget for Project Lifespan (continued)

5 Year Project Budget Summary

Capital Expenses

		HETI Funding Request		PTS Capital Funded
Initial Purchase	$	289,889.00	$	289,889.00
Subtotal:	**$**	**289,889.00**	**$**	**289,889.00**

Ongoing Operating Expenses

		PTS Operating Budget		5 Year Total, PTS Operating Budget
Annual Maintenance Costs	$	10,500.00	$	52,500.00
Annual Operating Expenses	$	4,500.00	$	22,500.00
Subtotal:	**$**	**14,500.00**	**$**	**74,500.00**

Subtotal, HETI Funded:	**$**	**289,889.00**
Subtotal, PTS Capital Funded:	$	289,889.00
Subtotal, 5 Year PTS Operating Budget:	$	364,389.00
Project Total, 5 Years:	**$**	**654,278.00**

7.2.1.5.D Planned Project Lifespan

The overall lifespan of the project is expected to exceed five years, before new technologies are expected to make replacement more cost effective than continued maintenance. Select individual components have significantly longer expected useful lifespans, providing additional long-term value from this project

7.2.1.6 Academic and/or Research Programs served by the Project; Enhancement of the Academic Capacity of the Institution

The School of Christian Vocation and Mission (SCVM) is the continuing education department of Princeton Theological Seminary (PTS). SCVM's educational programs are known

7.2.1.6 Academic and/or Research Programs (continued)

for combining academic rigor with practical application to leadership within churches and civic organizations. SCVM strives to cultivate more informed people of faith, who are also equipped with the mindset, mentors, and practical skills needed to lead congregations, community groups, and other non-profit organizations in the 21st century.

The proposed grant will allow SCVM to expand its recent successes in online education, strengthen its unique position as a point of contact among many universities and communities of learning in New Jersey and beyond, and integrate more fully into the Information Technology infrastructure at PTS.

Who Studies at SCVM

More than 2,300 people come to Princeton every year to attend one of SCVM's public lectures, seminars, retreats, or conferences, and more than 4,000 individuals attend one of its online offerings. In addition to stand-alone educational events, SCVM also offers 3 certificate programs, ranging in length from one year to three years of part-time study. Currently, almost 280 students are enrolled in one of the three certificate programs. Looking across all events and programs, about 50 percent of SCVM's students come from New Jersey, while the other 50 percent come from nearly every state as well as some 20 countries. Students represent well over 100 different faith traditions and come from all walks of life: pastors, high school students, teachers, lawyers, doctors, military chaplains, college students, professors, community organizers, and business people. About 50 percent are involved in some form of full-time or part-time ministry, either as a pastor, minister, or chaplain of some sort, but the other 50 percent come from a wide variety of backgrounds. In the last year alone, students and faculty from 64 other

7.2.1.6 Academic and/or Research Programs (continued)

institutions of higher education, including nine of the universities in New Jersey, have attended one of SCVM's educational offerings.

Who Teaches at SCVM

SCVM instructors come from Princeton Theological Seminary as well as some of the most prestigious educational institutions in the state and the world, including Princeton University, Rutgers, The College of New Jersey (TCNJ), Westminster Choir College, Harvard University, Yale University, Duke University, and Cambridge University. instructors are engaged who embody the best practices of ministry or faith-based civic leadership, including pastors of successful churches, leaders in various governmental and non-governmental organizations, and social entrepreneurs. For example, one of the week-long conferences scheduled for this summer includes professors from multiple universities, as well as Sheena Wright (president and CEO of United Way NYC) and James Forbes (senior minister emeritus of Riverside Church and president of the Healing of the Nations Foundation).

What They Teach at SCVM

SCVM sponsors educational events of broad interest, as well as specialized training programs for specific vocations. Examples of the former include public lectures on interfaith dialogue, a wide variety of events examining the intersection of science and religion, and an annual conference on faith-based leadership in the public square. Examples of the latter include training programs—some leading to a certificate—for pastors, hospital chaplains, youth ministers, and volunteers who are starting to assume leadership roles in various faith-based settings.

7.2.1.6 Academic and/or Research Programs (continued)

How Technology Is Used to Teach at SCVM

A few years ago, SCVM's educational events were seminars or conferences, lasting several days and taking place in Princeton or at some other site. In recent years, however, SCVM has experimented with many different pedagogical modalities. While still offering "traditional" seminars and conferences, new technologies have been integrated into all of our events, and various programs have been created that are largely or even entirely online. A few broad categories include:

- **Satellite sites**: SCVM partners with other institutions of higher education and large congregations, so that groups can gather in various parts of the state and the world to participate in our programs. Various platforms are used to allow for multi-point video and audio. Satellite sites have included TCNJ, Notre Dame, Shiloh Baptist Church in Trenton, and many others.
- **Remote instructors**: Noted scholars in other states or countries are able to address and dialogue with students in Princeton.
- **Blended classrooms**: Students are allowed to register as in-person or online attendees. Instructors are able to teach to both groups at once.
- **Webinars**: More than 90 webinars/online classes are offered per year, either as stand-alone events or as part of a certificate program, of which there are three.
- **Blended certificate program**: One of the certificates offered combines intensive in-person classes with online instruction.
- **Online certificate program**: One certificate is offered entirely online.

7.2.1.6 Academic and/or Research Programs (continued)

The technological features of Cooper Conference Room, SCVM's main lecture hall, have been critical to these pedagogical innovations, but the IT infrastructure in Cooper is now outdated and unable to support several important functions. The proposed grant will address these problems, empowering SCVM to continue its record of innovation and also expand upon its successes.

SCVM's Unique Contributions to New Jersey

SCVM has a long track record of excellence in offering the kind of educational programs described above. Unlike any other institution in New Jersey, it has decades of experience teaching two populations that have few, if any, educational options of similar scope and quality: (1) Hispanic leaders in faith-based organizations throughout New Jersey and (2) ministers and volunteers who work with young people. SCVM offers a full array of educational events in both Spanish and Portuguese, including a certificate program in both languages, and an equally full set of programs for those involved in youth ministry, including a certificate.

SCVM as a Conference Center for the Mercer County Region and Beyond

SCVM is based in the Erdman Center, a boutique lodging and meeting facility on the campus of PTS. Erdman offers 55 guest rooms, a reception space, several smaller classrooms, and a main lecture hall, Cooper Conference Room, which holds up to 100 students. The proposed grant will update the technical infrastructure in Cooper Conference Room, which will advance SCVM's own educational initiatives but also have a significant multiplier effect for other universities and non-profit groups in New Jersey.

7.2.1.6 Academic and/or Research Programs (continued)

When not being used for a PTS event, the Erdman Center's facilities are made available to a wide variety of organizations from other universities, colleges, schools, scholarly associations, non-profit organizations, governmental organizations, and church groups. More than 8,000 lodging nights are booked every year, with thousands of people attending academic events sponsored by departments or organizations from universities including Princeton, Rider, TCNJ, and Rutgers. The topics covered range from neuroscience to politics. For example, The Witherspoon Institute, a research center in Princeton, holds a multi-week summer school in Erdman every year, during which professors from many eminent institutions teach college students American history, politics, and culture. All of these organizations use Cooper for their events.

Erdman is also a gathering point for non-academic forums. For many years, the Mercer County Superintendent of Schools has hosted a countywide annual conference for teachers in Erdman. On several occasions, Princeton-area teachers have convened in Erdman for continuing education. Erdman is a meeting site for various civic and business organizations, including chambers of commerce. A broad range of professionals, including medical doctors, lawyers, clergy, and others use our facilities, especially the Cooper Conference Room, to discuss matters of common interest, conduct educational retreats, and host public events.

How this Project will Expand SCVM's Educational Programs

Cooper Conference Room is at the heart of SCVM's educational programs. Now, however, the Room's infrastructure is outdated and unreliable. Once Cooper's technical infrastructure has been updated, online offerings will be increased, creating new partnerships

7.2.1.6 Academic and/or Research Programs (continued)

with other universities and community groups, and transitioning our Spanish and Portuguese certificate programs into an online format. Lectures will be beamed and full, year-long certificate programs in several languages will be available to multiple satellite sites around New Jersey.

SCVM's staff has been able to solve many of the content-related issues that still perplex other organizations – how to repurpose material for blended and online classes, how to train faculty in different pedagogical strategies and technologies, how to work with multiple satellite sites at once. Needed, however, is a smart classroom that is as up to date as SCVM's cutting edge pedagogy. Updating Cooper as proposed in this project will diversify and improve the pedagogical tools available to instructors, as well. Many of the proposed pieces of equipment will increase the quality, variety, and interactivity of the multimedia elements in online classes and broadcasts. The anticipated results are more student engagement, better attainment of learning goals, and improved outcomes.

The proposed improvements will bring Cooper up to the level of another PTS smart classroom, located in the seminary's nearby library complex. Having two such classrooms will provide significant advantages for the Seminary's own educational programs and for those of the other institutions that use PTS facilities. With two rooms equipped with multi-point video conferencing and a full range of multimedia features, SCVM can host media-rich educational events for groups as large as 200 people.

7.2.1.7

See attached Certifications: Appendix H Question and Answer Documentation Certification and Appendix I Addenda Certification

7.6 GRANT APPLICATION REQUIREMENTS FOR HIGHER EDUCATION TECHNOLOGY INFRASTRUCTURE FUND GRANTS

7.6.1 Application must provide:

7.6.2.1 Schedule of Acquisitions and Project Completion

Project Start Date	Completion Date
July 2013	January 2014

7.6.2.2 Cost Effectiveness

7.6.2.2.A Cost Data

Project itemization costs:

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	SPTRM 55245CHBlW	Doctorate Interactive Lectern w/Cut Out twin WhI Cherry & BI	4,326.00	4,326.00
1	SPTRM 95512	FPM Monitor Arm Light Monitor 411.5 ILBS Black	291.00	291.00
1	SPTRM 55248MOD	Logo Panel Doctorate Modified w/use chg Logo	198.00	198.00
1	SPTRM 55247B	Doctorate I Masters Drawer Black	159.00	159.00
1	SPTRM 95517B	Rack Mount Wire Lace Kit wfTies Black	41.00	41.00
1	SPTRM 99032	Enlightened Ser SurfaceMt Lectern& tbltop 18in Gooseneck LED	104.00	104.00
1	SPTRM 98502	Caster4inHeavyDutyBoxed (050241)	215.00	215.00
1	SPTRM 38202BL	Drafting Stool Blue	171.00	171.00
1	EXTRN 60-524-01	Cable Cubby 800, Furn-Mountable Enc - Blk Anodized	526.00	526.00
1	EXTRN 70-101-73	One 15-Pin Hd F To F Gender Changer, Blk	47.00	47.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	EXTRN 70-616-02	One Hdmi F To F Barrel, Single Space Aap, Blk	47.00	47.00
1	EXTRN 70-093-72	3 Rca F To F Barrels, Single Space, Blk	47.00	47.00
1	EXTRN 70-107-73	Aap Sng, 1 S-Video F-F, 2 Rca F-F, Blk	64.00	64.00
1	EXTRN 70-090-11	Blank Plate, Single, Blk Blank Plate	12.00	12.00
1	EXTRN 70-090-12	Blank Plate, Double, Blk Blank Plate	12.00	12.00
1	EXTRN 70-414-11	One Rj-45 F To Punch Down For Cat 6, Leviton, Blk	29.00	29.00
1	MIDDL UD1 1	Sp 1 3/4in utility drawer	79.00	79.00
1	MIDDL D2	2 Sp 3 1/2in Rk Drawer, Blk Br	106.00	106.00
1	ELMO 1309	P10 DOCUMENT CAMERA	1,609.00	1,609.00
1	CMAN ISOMAX-4RF	Desk Mount	26.00	26.00
1	CMAN M4HP5RF24EB	24" Gooseneck Hypercardiod Microphone	339.00	339.00
1	TASCM DV-D01U	DVD Player w/RS-232 Control Port 1 RU	477.00	477.00
1	ADESS WKB-4200UB	Wireless keyboard	73.00	73.00
1	TVONE C2-2200A	7 Inputs, Up/Cross Conv, Stereo Aud Switching	1,400.00	1,400.00
1	TVONE RM-220	Sgl/Dual RkMt Frame for C2-1000, C2-2000 & S2 Ser Produ	46.00	46.00
2	NETGE GS105NA	Switch 5-Port 10/100/1 OOOMBPS	52.00	104.00
2	CREST DM-TX-201-C	Dig Med 8G STP TX 201	765.00	1,530.00
1	CREST DM-RMC-SCALER-	Dig Med 8G+ RX, Room Controller w/Scaler C	824.00	824.00
1	CREST SW-ROOMVW-SE	RoomView Server Edition, Enterprise Mgmnt RVER Sched.,	2,941.00	2,941.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	EXTRN 60-953-02	SW4 USB	462.00	462.00
1	EXTRN 60-190-20	Rsf 123, 1U 3 51n Deep Rack Shelf Kit	76.00	76.00
1	SURGX SX-1115	1RU,90utlet,15 A	446.00	446.00
1	MIDDL PD-815R-PL	8 Outlet, Sgl 15 Amp circuit, Surge/Spike	70.00	70.00
1	SMART SP518-NB	Podium 518 interactive pen Dsp w/Notebook Sftw	1,961.00	1,961.00
1	SMART BSS-MAX	Bridgit Server Software Includes SOO Concurrent User Lie	6,965.00	6,96S.00
1	SMART SMP-UPK	Notebook to Meeting Pro Upgrade Kit	842.00	842.00
1	SMART Technologies	Meeting Pro Software	6,965.00	6,965.00
1	Netop Vision Pro	Classroom Management Software License For 1 Teacher & 15 Students	649.00	649.00
1	Discovery Education	Web 2.0 Tools		
1	EPSON V11	H34S920 GS7S0WUNL, WUXGA, 4S00. no lens	3,220.00	3,220.00
1	EPSON V12H004S0S	Standard Lens for all Pro G models	1,239.00	1,239.00
1	CHIEF RPA298	Rpa, Incl Slb298, Blk	140.00	140.00
3	SBX88SIX	Board X88S w/UX60 Projector	4,988.00	14,964.00
2	SMART CATS-XT-1100	CAT 5 to USB Extender, CAT5 Cable not included	83.00	166.00
1	CONRE 232-ATSC+	HDTV Tuner, Includes HD2-RC Remote	819.00	819.00
1	CONRE RK1-HD+	Single rack kit for 232-ATSC+ Tuners, 2RU	47.00	47.00
5	NEC P462 P462	46in LCD Public Dsp Mon 1920x1080 (FHD)	1,699.00	8,495.00
3	VADDI 999-69S5-	WaliVIEW HD-20	4,478.00	13,434.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
	OO0			
2	VADDI 999-7260-000	AutoTrak 2.0 with HD-20 PTZ Camera	12,833.00	25,666.00
5	CHIEF MCSU	Mid Size Ceiling Mount	168.00	840.00
1	VISIX AXIS-TV-1S001	Meeting Minder Room Signage	2,923.00	2,923.00
1	VISIX PGM	Programmin	181.00	181.00
2	JBL CBT-SOLA-1	SO em Straight Line Array Col w/8x2in Drivers 80 Hz-20 kHz	344.00	688.00
13	SOUND THD72WC	Spk Pkg C10T721SW T62-8	38.00	494.00
1	VCA INPUT PANEL	Custom Input panel RCI	102.00	102.00
1	CREST TPMC-8X-GA	Isys 8.4in WiFi Touch Panel	2,235.00	2,235.00
1	CREST CNPWS-75	Extemal Cresnet PS 75 watt	265.00	265.00
1	CREST CNXRMAK	Rack Mt Kit for up to 3 C2N-HBLOCK and CNPWS-75	88.00	88.00
1	CREST CEN-NVS200	Network Vid Streamer Req PWE-4803RU, CEN-SW-POE-5	587.00	587.00
1	GEFEN GTV-HDMI-2-COM	TV HDMI to Composite Scaler, Pre-Order PSVIDS	213.00	213.00
1	CREST TPMC-8X-DSW	Wall Mt Docking Station for TPMC-8X	1,176.00	1,176.00
1	CREST WMKM-8X-DSW	Drywall Mting Kit wlmud ring for TPMC-8X-DSW	91.00	91.00
1	CREST TPMC-8T-GA	Isys 8.4in TableTop WiFi Touch Scm	2,529.00	2,529.00
1	POLYC 7200-23150-001	HDX 8000-720: HDX 8000 HD camera, HDX mic array, P+C	9,877.00	9,877.00
1	POLYC 4870-00380-156	TOTAL COVERAGE,1YR,HDX8000 SERIES	1,199.00	1,199.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	POLYC 2215-28283-001	SHELF FOR MOUNTING THE HDX 7000 AND 8000 SERIES CODECS	205.00	205.00
3	DMI CONVMBHS2	Mini Converter, HDMI to SOl 2 (PS Incl.)	276.00	828.00
1	VADDI 999-8550-000	EasyTalk Wireless USB Mic System	1,099.00	1,099.00
1	CROWN CTS600	Amps, CTs Ser, 100V direct outputs, PIP2 compatible	741.00	741.00
1	CROWN CTS1200	Amps, CTs Ser, 100V direct outputs, PIP2 compatible	1,140.00	1,140.00
1	EXTRN 60-845-01	Mpa 401-70V, 70 V Mono Power Amp, 40 Watts	263.00	263.00
1	EXTRN 60-190-20	Rsf 123, 1U 3 51n Deep Rack Shelf Kit	76.00	76.00
2	L1STN LR-400-072	Port Display FM Receiver 72 MHz	119.00	238.00
2	L1STN LA-164	Ear Speaker	11.00	22.00
2	L1STN LA-166	Neck Loop	42.00	84.00
1	L1STN LA-321	8-Unit FM Products Charging/Carrying Case	443.00	443.00
2	L1STN LA-362	Rechargeable AA NiMH Batteries Pkg. of 2	8.00	16.00
2	POlYC 2200-33160-001	SoundStructure C16 -Sixteen ch AEC/Noise cnd	6,611.00	13,222.00
1	POlYC 2200-35005-001	SoundStructure VolP Interface SIP interface with HDVoice	613.00	613.00
8	REVOl 01-HDEXEMIC-11	HD Microphone, RF-Armor	286.00	2,288.00
1	REVOl 01-HDEXEC-NM	Executive HD Sys 8-Channel	4,260.00	4,260.00
4	REVOl 01-HDXlRMIC-11	HD Microphone, XLR Plug On	286.00	1,144.00
4	SHURE SM58S	Card Dynam, On-0ff Switc	98.00	392.00
2	SHURE SM58-X2U	Card Dynam Mic w/X2U XlR-to-USB Signal Adpt	139.00	278.00
1	CREST PR02	Pro Dual Bus Ctrl Sys1 Z-Bus slot and 3 V-Bus slots	1,941.00	1,941.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	CREST AV2	Eco Dual Bus Ctrl Sys1 Z-Bus slot	1,412.00	1,412.00
1	CREST C2ENET-2	Dual Port 10/100BaseT Ethernet Crd	765.00	765.00
3	CREST C2COM-3	3 Port RS-23214221485 Crd for Y-Bus Exp Slot	412.00	1,236.00
1	CREST C2ENET-1	Sgl Port 10/100BaseT Ethernet Crd	529.00	529.00
1	NETGE GS724TP-100NAS	Switch 24-Prt 101100/1000 PoE	483.00	483.00
1	CREST DM-MD32X32	32x32 Dig Med Switcher	10,118.00	10,118.00
6	CREST DMC-DVI	DI/RGB In Crd for OM Switchers	471.00	2,826.00
2	CREST DMC-C-DSP	DigMed 8G STP In Cd w/Down-mixing for OM swtchrs	765.00	1,530.00
1	CREST DMC-HD-DSP	HDMI In Crd w/DSP for OM Switchers	588.00	588.00
2	CREST DMCO-55	Outpt Cd for DM-MD8X8, DM-MD32X32 w/4DM, 8G, 2 HDMI	1,529.00	3,058.00
1	CREST DMCO-33	Outpt Cd for DM-MD8X8, w/4 HDMI w/4 Stereo Ani	824.00	824.00
9	CREST DM-RMC-100-C	Dig Med 8G STP RX, Room Ctrtler 100	529.00	4,761.00
1	VADDI 999-821 0-000	AV Bridge - HD Video Encoder	1,580.00	1,580.00
3	TRIPP HTR15-2U	Pure Sine Wave 1500VAl1200W on-line, double conversation	1,170.00	3,510.00
1	LANTR EDS4100P2-01	Network to RS232 Converter	408.00	408.00
1	TVONE 1T-C2-750	Dual PIP DVI-I Scaler w/Key, Max DVI 1920x1200, 1080p	698.00	698.00
1	TVONE RM-230 Single/Dual	RkMt Frame for 1T-C2-100/200 Ser Product	68.00	68.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	CREST DMCO-53	Outpt Cd for DM-MD8X8, DM-MD32X32, w/2 Stereo Anal	1,212.00	1,212.00
4	VADDI 998-6000-003 1-RU	Rack Panel for PresenterPOD Interface	49.00	196.00
1	APPLE TV Air Play	MULTIMEDIA RECEIVER	100.00	100.00
1	Black Magic HyperDeck Studio Pro	Analog and Digital Recorder	1,800	1,800
1	Aurora Multimedia VPH-100	V-Tune Pro HD	950	950
1	Aurora Multimedia 1RU Rack Mount Ears	Rack Mounting Hardware for the V-Tune Pro HD	30	30
1	Aurora Multimedia IRC-15	Infrared Remote Control for the V-Tune Pro HD	45	45
1	MARSHALL ELECTRONICS OR-434	2RU QUAD 4.3" BROADCAST LCD RACK MOUNT MONITOR	4,999.00	4,999.00
1	DMI HYPERD/ST	HyperDeck Studio	931.00	931.00
1	DMI HYPERD/PT2	HyperDeck Shuttle 2	323.00	323.00
1	DMI HYPERD/PTMOUN	HyperDeck Shuttle Mounting Plate TPL	93.00	93.00
1	DMPRO PMD580	Solid-State Compact Flash recorder w/lnternal Web	1,088.00	1,088.00
1	CHIEF PAC521P	In-Wall Box + Outlet Pwr Cond	147.00	147.00
2	NEC P462 P462	46in LCD Public Dsp Mon 192Ox1080 (FHD)	1,699.00	3,398.00
2	CHIEF MTMU	Mtm Universal	126.00	252.00
1	NEC SP-4046PV	Ex1emal Speaker Attachment	170.00	170.00
1	CREST PW-2420RU	Pwr pk Desktop 24DC 2A 50 Watts Regl USllntl	147.00	147.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	MIDDL MRK-4431	44 Sp 771n, 311nd Gang Rk w/Rr Door, Blk	722.00	722.00
1	MIDDL MV-RR44	44 Sp 77ln Mrl<Nrk Addtl Rail Kit	69.00	69.00
1	MIDDL PDT-2020C-NS	20 Outlet, Sgl 20 Amp circuit Thin PStrip w/cord	140.00	140.00
1	MIDDL MW-10FT-550CFM	integrated 10in Fan Top, w/1 Fan, 550 cfm, Blk	259.00	259.00
1	MIDDL SPN-44-312	Pr of side Pnls, fits Mrk-4431 & Wrk-44-32, Blk	414.00	414.00
10	MIDDL PD-1215	12 Outlet, Sgl 15 Amp circuit PStrip, Hardwire Terminat	89.00	890.00
3	MIDDL MRK-2431	24 Sp 421n, 311nd Gang Rk w/Rr Door, Blk	722.00	2,166.00
3	MIDDL MV-RR44	24 Sp 42ln Mrl<Nrk Addtl Rail Kit	69.00	207.00
3	MIDDL PDT-2020C-NS	20 Outlet, Sgl 20 Amp circuit Thin PStrip w/cord	140.00	420.00
3	MIDDL MW-10FT-550CFM	integrated 10in Fan Top, w/1 Fan, 550 cfm, Blk	259.00	777.00
3	MIDDL SPN-44-312	Pr of side Pnls, fits Mrk-2431 & Wrk-24-32, Blk	414.00	1,242.00
12	AJA HDP2 HD/SD	SOl to DVI, high-quality scaler, 2-ch. unbal audio out	605.00	7,260.00
17	OMI HDLEXT-DVI	DVI Extender	370.00	6,290.00
7	OMI CONVOPENGBH S	OpenGear Converter, HDMI to SOl	463.00	3,241.00
4	OMI DFR-8321-CNS-P	OpenGear 21 Slot Frame w/Colling Fans, Full Networking, SNMP	1,946.00	7,784.00
1	LINK HDE-3000	HD SD SDI Closed Caption Encoder, Character Generator	6,579.00	6,579.00
1	CONRE 232-ATSC+	HDTV Tuner, Includes HD2-RC Remote	819.00	819.00
1	CONRE RK1-HD+	Single rack kit for 232-ATSC+ Tuners, 2RU	47.00	47.00
1	CROWN D75A	40 watt/channel amplifier	594.00	594.00
1	TEKTM SPG600	Tv signal gen	4,343.00	4,343.00
1	TRIPP B022-U16	16Port KVM Switch, USB/PS2	673.00	673.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
1	DMI CONVMCAUDS	Mini Converter Audio to SOl	463.00	463.00
1	OMI CONVMCSAUO	Mini Converter SOl to Audio	463.00	463.00
1	LEITC HD-SOI +	Audio Router and Multiviewer	85,945.00	85,945.00
1	LEITC FR6822+F	Frame 2RU no back all blanks wlfan wlone 6800 +AC PS	774.00	774.00
1	LEITC VOA6800+D	ani vid dist amp w/1 0 1/0 rear cnctr	135.00	135.00
1	LEITC OA-OHR6802+D	Dual 3G-Sd-Asi Eq, Reclocking Oa 1X8 Or 2X4	1,123.00	1,123.00
4	CSPEC 6408-CS 8Ch	CWDM (1470-1610nm), Card, Uses Qty 2	2,615.00	10,460.00
2	CSPEC 6000A	20 position card cage	514.00	1,028.00
12	CSPEC 3350-CCWDMS	3G/HD/SO-SDI, CWDM wavelength to be specified, SM	1,399.00	16,788.00
12	CSPEC 3351-C7S	3glhdlsd-sdi 1310nm,sm and mm,1 fiber,st,rx,card 1 slot	931.00	11,172.00
2	CSPEC 6010A-NA	Universal Power Supply 85W for 3 slots	327.00	654.00
4	CSPEC 6031	Filler Panel, 1 Slot	47.00	188.00
24	CSPEC 6121-0001-S/S	Single Mode Cable, 1 Meter, ST-ST	51.00	1,224.00
1	CSPEC 5101-B7L	1490nm & 1310nm, box	837.00	837.00
1	CSPEC PDPS-3-NA	Univ Power Supply (110-240 VAC, 50/60 HZ to 12 VDC/1.5A)	42.00	42.00
2	TRIPP HTR15-2U	Pure Sine Wave 1500VN1200Won-line, double conversation	1,170.00	2,340.00
1	POLYC 7200-23150-001	HDX 8000-720: HDX 8000 HD camera, HDX mic array, P+C,	9,877.00	9,877.00
1	POLYC 4870-00380-156	TOTAL COVERAGE, 1YR,HDX8000 SERIES	1,199.00	1,199.00
1	POLYC 2215-28283-001	SHELF FOR MOUNTING THE HDX 7000 AND 8000 SERIES CODECS	205.00	205.00

7.6.2.2.A Cost Data (continued)

Qty	MFR P/N	DESCRIPTION	PRICE	TOTAL
2	VIEWC 95-00475	Osp 820e wlDigital Simulstream	1,489.00	2,978.00
2	HP HP-Z820-Q#2-2008	Custom Intel Xeon 8 Core Min 16GB Ram 3532-05 Computer	3,294.00	6,588.00
12	AJA DW?	PSuply, 110V, Wall Plug-in Type, for D- & HD-Series Convs	36.00	432.00
2	VCA IP CAMSRN560N	mpeg dome camera	218.00	436.00
1	BELKI F1 DJ1004P-B	4 port kvm switch	304.00	304.00
1	BELKI F1D084	KVM Ex1ender	282.00	282.00
1	DMI BMD-CONVMH/DU SDLHDMI	Ex1ender	345.00	345.00
	TOTAL EQUIPMENT COST:		273,760.00	399,778.00
1	Electrical requirements	By licensed electrical contractor	30,000.00	30,000.00
1	Custom glass replacement	Replace rear projection glass	20,000.00	20,000.00
1	ENGINEERING. INSTALLATION & CONSULTING COST:			120,000
1	1YR. WARRANTY COST:	SYSTEM MAINTENANCE SERVICE & TECHNICAL SUPPORT	10,000.00	10,000.00
	TOTAL PROJECT COST:			579,778.00

7.6.2.2.B Alternatives Approaches

The design comes out of many years of research and system design, giving SCVM the opportunity to learn what works and what doesn't. Specifically, the design of the Cooper Conference Room is the culmination of:

- Experience with other similar rooms and systems
- Review of best practices discovered through extensive research and review of systems used by other institutions
- Input from end users
- Discernment of what is functionally required for our programs
- Consistency between campus systems
- Efforts to improve efficiency and ease of use
- Regular assessment of similar systems

7.6.2.3 Plan for Technology

Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to **enhance the connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions and the wider public.** The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. Students may enroll in courses without paying additional tuition at participating schools. Students from other New Jersey institutions of higher education enroll for Seminary courses upon payment of tuition. Among them are students, typically earning the Master of Social Work degree, from **Rutgers, the State University of New Jersey**.

7.6.2.3 Plan for Technology (continued)

The School of Christian Vocation and Mission has already compiled a wealth of resources accessible to the wider public and has effectively managed the reappropriation and reuse of those resources, thereby expanding their reach. The scope of technological advances proposed in this application will result in the enhancement of Open Educational Resources (OER) for interested parties.

The Cooper Conference Room, which holds up to 100 students, provides key services to a wide variety of organizations from other universities, colleges, schools, scholarly associations, non-profit organizations, governmental organizations, and church groups. Thousands of people attend academic events sponsored by departments or organizations from universities including Princeton, Rider, TCNJ, and Rutgers. The topics covered range from neuroscience to politics. For example, The Witherspoon Institute, a research center in Princeton, holds a multi-week summer school in Erdman every year, during which professors from many eminent institutions teach college students American history, politics, and culture. All of these organizations use Cooper for their events. Cooper Conference Room is also a gathering point for non-academic forums. For many years, the Mercer County Superintendent of Schools has hosted a countywide annual conference for teachers here. On several occasions, Princeton-area teachers have convened in CCR for continuing education, and it is also used as a meeting site for various civic and business organizations, including chambers of commerce. A broad range of professionals, including medical doctors, lawyers, clergy, and others use our facilities, especially the Cooper Conference Room, to discuss matters of common interest, conduct educational retreats, and host public events.

7.6.2.3 Plan for Technology (continued)

The Seminary's mission is the preparation of men and women for theological leadership; however, the Seminary is also in service to educators, students and lay people throughout the State, the nation, and globally. Its resources are accessed in support of congregations of all denominations and faiths and as resources for the study of history and the demographic movements of populations throughout history. The enhanced inter-institutional connectivity offered by this project will multiply the impact of the Seminary's mission.

For Princeton Theological Seminary Technology Plan see PTS Appendix B

7.6.2.4 Advancing the Institution

Princeton Theological Seminary in 2001 was one of the first higher education institutions in the U.S. to adopt a converged technology solution to integrate video, voice and data. Its early prediction of cost effectiveness has led to reduced phone line costs and full virtualization of all servers. By having over a decade of experience in leveraging integrated technology costs effectively, the Seminary will expand its digital "reach" with the support of the Higher Education Technology Infrastructure grant by making key audio/visual resources accessible to a wider audience. This "reach" strengthens the Seminary's online presence through its continuing education resources and events that originate in Cooper Conference Room. As SCVM leads the Seminary in online education, there is a vital wealth of learning occurring amongst the faculty, and as a result, is reshaping pedagogical approaches to on-campus, for-credit courses. Hence the digital reach extends beyond PTS's historical constituency, but also has a real, tangible impact on its traditional students.

7.6.2.4 Advancing the Institution (continued)

The funding sought by the Seminary for this project to advance the use of its integrated voice/video/data network operates on three levels:

- Capture and distribute high quality video and data;
- Ensure high reliability and high availability of converged network resources; and
- Extend the on and off-site reach of its literary, academic and scholarly resources.

These components not only support each other, but provide a synergy that allows the Seminary to advance its telecommunication possibilities. By building consistency across campus with its other key classroom with built-in conference technologies, the Seminary will be able to provide its outstanding collection of academic materials targeting a vastly broader community, without constraint of time or place, and across the widest range of technical devices.

7.6.2.5 Compatibility

Compatible with the New Jersey Office of Information Technology 2012 Annual Report (http://www.state.nj.us/it/pdf/2012_Annual_Report.pdf), PTS has implemented a robust IT infrastructure. Starting in 2000, PTS planned and implemented a converged data network, designed to carry voice, video, and data. In 2001, PTS was one of the first higher-education institutions to purchase and implement a VoIP phone system, to replace legacy Centrex phone lines, providing greater services, better integration, and long term cost savings.

7.6.2.5 Compatibility (continued)

This IT infrastructure:

1. Continues to support all departmental and enterprise wide applications and IT systems, hosted both on site, off site, and in the cloud.
2. Is shared and secure within reasonable industry standards
3. Supports emergency communications, via email, web, and telephone based broadcast communication methods

Building on this resource, PTS is committed to utilizing it to reach local and far reaching participants in a variety of methods. Whether in Trenton or the UK, participants are able to connect with the seminary with confidence knowing the content, delivery and security meet appropriate standards and benchmarks.

In June 2012, PTS adopted its Overall Integration Policy to ensure the efficient and effective use, implementation, communication and management of various information technologies across the Seminary campus for faculty, staff, students, alums and Seminary visitors. The four committees that resulted allow for mission critical issues to be coordinated centrally including but not limited to: Use, maintenance and implementation; Resource management – fiscal, human, technological; Legal, including federal compliance and intellectual property; Information management; Privacy; Security; Risk management; Web use, development and deployment; Training; and Hiring. The integration policy certifies proper governance and planning of IT resources while aligning resources with institutional priorities. The issue of institutional IT governance is covered in the Seminary's Technology Strategic Plan.

7.6.2.5 Compatibility (continued)

By upgrading the technological infrastructure of Cooper Conference Room, PTS is better able to fulfill the mission of SCVM as a vital resource for continuing education as well as provide a resource for other institutions and organizations. By strengthening these partnerships, the Seminary is also able to disseminate resources to a wider group of people. PTS is now poised to leverage its past investments in infrastructure, and capitalize on delivering its academic resources to the wider public. This is expected to support high definition video conferencing and telepresence, as well as facilitate access to volumes of digitized resources including books, video, and audio – for use both on campus, by New Jersey residents and institutions, and around the world, using standard Internet protocols.

7.6.2.6 Matching Funds

Princeton Theological Seminary is committed to matching funds from current institutional accounts as these projects are already budgeted and committed for funding as per the attached Princeton Theological Seminary Board resolution.

7.6.2.7 Selection Criteria

Introduction: In the interests of serving the State that has been home to Princeton Theological Seminary (PTS) since its founding in 1812, the Seminary seeks to **fully satisfy the Selection Criteria as outlined by the State of New Jersey Office of Higher Education.** The Seminary is among New Jersey's unique offerings to our nation and to the world. Nothing comparable concerning Protestant Christianity exists for research, reflection and the education of people of faith, whether they serve in ministry or in a great range of professions, including those of educators, corporate leaders, government servants, health care workers, military officers,

7.6.2.7 Selection Criteria (continued)

lawyers, welfare advocates, humanitarians – the Seminary's graduates bring the added dimension of faith to their leadership in numerous careers. **The Seminary is committed to:**

1. Advancing student education in the State of New Jersey. As research in the humanities transitions into more digital formats, key components of the increased infrastructure, especially increased bandwidth and a new data center, will allow Princeton Seminary to continue as a leader in theological education and research with the inter-institutional connections necessary for today's multidisciplinary approach.

This proposal, in particular, concerns the Seminary's School of Christian Vocation and Mission (SCVM), the continuing education department of PTS. Located in SCVM in the Seminary's Erdman Center is the Cooper Conference Room (CCR), a venue for lectures, small conferences, presentations by webcast and podcast, and service as a smart classroom. CCR sees service to professional organizations in the Princeton area and community groups – especially non-profit organizations seeking to educate and train their personnel. SCVM's educational programs are known for combining academic rigor with practical application to leadership within civic organizations and churches. SCVM strives to cultivate more informed people of faith, who are also equipped with the mindset, mentoring ability, and practical skills needed to lead non-profit organizations and community groups, as well as congregations, in the 21st century.

Academic presentations and materials, including but not limited to on-campus lectures, programs leading to certification, scholarly publications, course materials and syllabi are highly sought after by those outside the institution and improving the infrastructure creates the foundation necessary to make the Seminary's materials more accessible to others. With updated infrastructure, for which this application applies, CCR will increase online offerings, create new

7.6.2.7 Selection Criteria (continued)

partnerships with other universities and community groups, and transition the Seminary's Spanish and Portuguese certificate programs into an online format. SCVM will be able to beam lectures and full, year-long certificate programs in several languages to multiple satellite sites around New Jersey.

2. Improving and expanding educational opportunities for students: Currently, the Seminary hosts adult scholars and representatives of congregations from all parts of the State and nation for seminars, workshops and short courses and, for those more distant or unable to travel, webinars are offered on topics of faith. The existing Educational Media encompasses a wide variety of media equipment, support services, and facilities, including audiovisual assistance; audio and video recording services; videoconferencing; webcasting; web streaming; and personal consultation on the selection and use of technologies for curricular needs.

3. Promoting academic research excellence, workforce readiness and the enhancement of the State's academic and economic competitiveness and prosperity by assisting in the production of a highly skilled workforce. Graduates of Princeton Seminary join the State's workforce in an impressive variety of highly skilled professions. Graduates of the Seminary hold positions of leadership in careers that are not usually associated with a theological education. Currently, Seminary alumni/ae in New Jersey are engaged as faculty members in institutions of higher education, in corporate leadership, government, law, as physicians and health care workers, in social work and advocacy. **All that is to say, "A Seminary Education! It isn't just for pastors anymore!"**

4. Promoting innovation and improving the delivery of higher education. Through existing reciprocal inter-institutional academic relations, Princeton Seminary is poised to enhance the

7.6.2.7 Selection Criteria (continued)

connectivity and information technology relative to instruction and research that advances the missions of New Jersey institutions. The institutions involved include **Princeton University, Westminster Choir College of Rider University, New Brunswick Theological Seminary,** and, at the PhD level, **Jewish Theological Seminary**. The scope of technological advances proposed in this application will result in the enhancement of Open Educational Resources (OER) for scholarly collaboration and support services for educators and researchers. These advances will connect infrastructure for intra- and inter-institutional repositories, not only among the reciprocal institutions but for free access by all educators and students in New Jersey who may "visit" the Seminary library electronically.

5. Advancing study at all levels in science, technology, engineering and mathematics education. Admittedly, these subjects are not featured in a seminary curriculum but practitioners of these disciplines convene at the CCR to collaborate among themselves on areas of research and to share competencies. PTS offers access to the CCR and, with the upgrades proposed, to the second smart classroom located in the Seminary library so that professional organizations and people serving the interests of the community can assemble groups as large as 200 people to disseminate information. With the additional opportunity to broadcast such presentations, the involved audience grows exponentially. To have that ability to communicate widely from a local facility can serve as a tremendous advantage for professionals in the STEM fields.

6. Maintaining consistency with the Seminary's educational mission. The proposed project is essential to the Seminary's educational mission. That mission is the preparation of men and women for ministry to congregations and for Christian leadership in communities and

7.6.2.7 Selection Criteria (continued)

professional environments. Especially since Princeton Seminary supports the academic pursuit of advanced degrees, it is imperative that it offers the tools for electronic scholarship. This project will help to meet the growing demand among scholars for electronic and interactive access to academic and research resources.

7. Maintaining consistency with the Seminary's long-range facilities plan for technology. The current deployment of technological enhancements to the Seminary's telecommunications system and services, is consistent with the Seminary's original intent, since 2001, to leverage the converged use of VOIP (video, voice and data technology) to enhance teaching, learning, and research opportunities in service to our faculty, students and guests.

This effort will be achieved, given the newly implemented technical capacities, i.e., increased bandwidth, networked wireless capacity, etc., to do effective online distance learning, provide more access to an abundance of newly available digitally stored academic and literary materials developed in an electronically stored format. The upgrade of the current telecommunications infrastructure additionally allows the seminary to now construct and design flexible learning spaces to meet the growing need of its users to connect and access information through mobile, wireless and other devices. Thus, current and future classroom design will be consistent with the newly emerging learning styles of future generations who seek networked learning opportunities. This includes the lifelong learner.

To ascertain necessary information from these learners and instructors on an on-going basis, the newly established integration policy reinforces the importance of good governance, and allows the voice of the teachers, learners, researchers, and administration, to collaborate and

7.6.2.7 Selection Criteria (continued)

work judiciously towards sustaining this precious gift, the telecommunications network, in a more cost effective way.

This project also mirrors the guiding principles established in the technology plan as the infrastructure permits greater access, is designed to adapt later innovations and promotes collaboration. Thus, the members of the technology department are committed to supporting the mission, vision and values statement of the technology plan which articulates the need to prepare men and women, in accordance with the Seminary's stated mission, for all of the many forms and vocations in ministry, in service to the church and world.

8. Insuring the cost-effectiveness of the proposed infrastructure Project. Financial management at Princeton Seminary is professional and responsible. The Seminary's business office is fully staffed with a controller and assistant controller, accountants, payroll coordinators, a purchasing agent – all supervised by the Seminary's senior vice president, chief operating officer and treasurer and accountable to the Seminary President and the Board of Trustees. Annual financial audits are performed by an outside agency and the Seminary is found to be in full compliance.

9. Proposing an infrastructure Project that is consistent with the State's goals and priorities. This project is compatible with the recommended technology infrastructure for New Jersey higher education. For a complete discussion, please see section 7.6.2.5.

10. Serving the best interests of higher education in the State as a whole. The stated mission of New Jersey public education is to provide leadership to achieve excellence in education, to advance the State's vision to prepare New Jersey students to contribute to local, national, and international communities. On that basis, Princeton Theological Seminary's service to the State

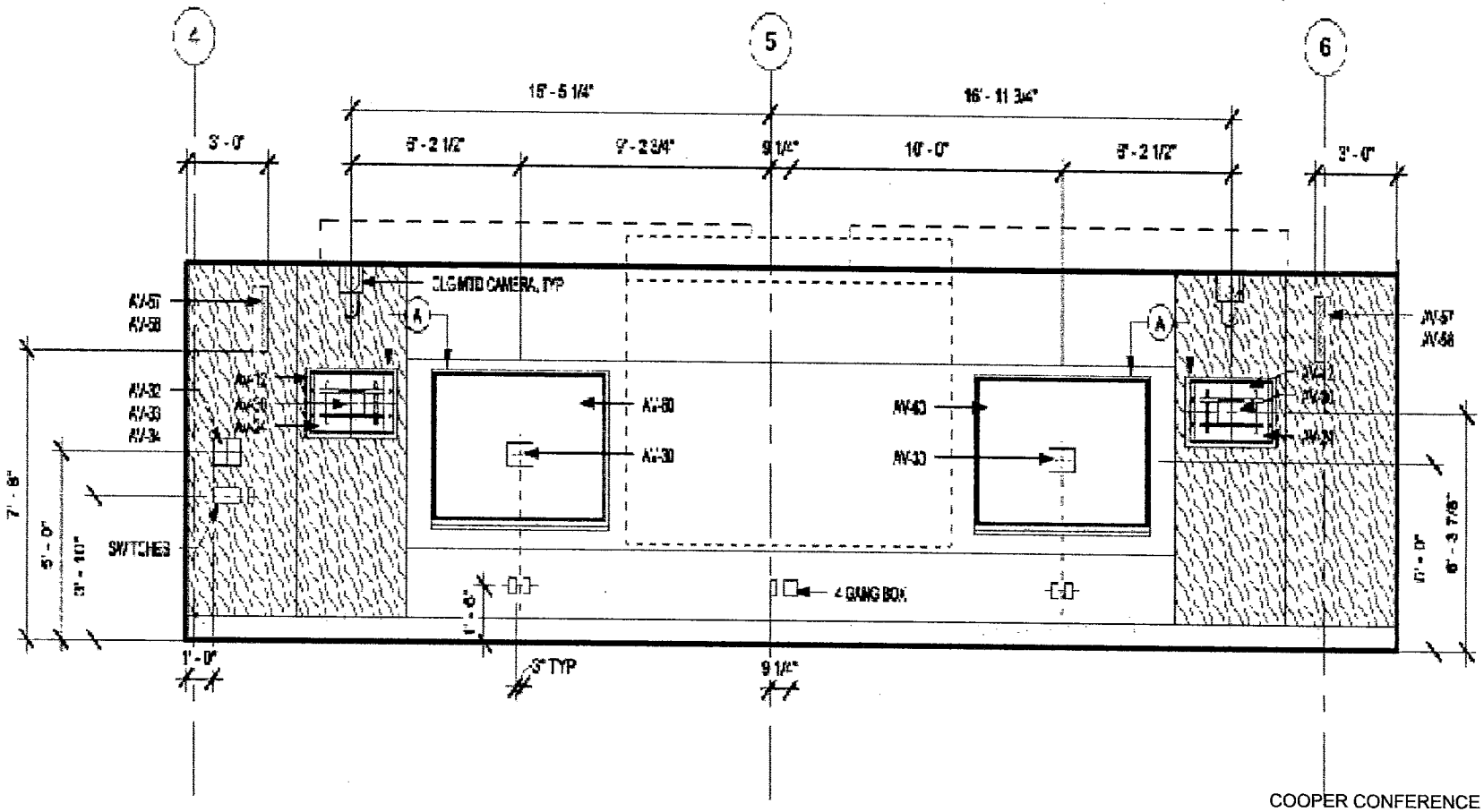
7.6.2.7 Selection Criteria (continued)

of New Jersey and its students is exemplary. In any given year, the Seminary's student body that ranges from 500 to 550 men and women includes 70 to 80 New Jersey students – always the largest representation of any state. Among the students enrolled for academic year 2012-13, four are studying for the PhD degree, leading to probably careers in the academy. Five seek dual degrees (Master of Divinity/Master of Arts), leading to specialization in Christian Education or youth ministry. The end result for the State of New Jersey is this: 365 churches throughout New Jersey are currently led by a pastor or pastors who are Princeton Seminary graduates. The churches they serve are African Methodist Episcopal (AME), Baptist, Community, Congregational, Episcopal, Greek Orthodox, Lutheran, Methodist, Reformed, Roman Catholic, United Church of Christ, Korean Methodist, Korean Presbyterian, Taiwanese Presbyterian, and Presbyterian Church (U.S.A.). 333 additional Seminary graduates work in New Jersey in humanitarian causes and professions other than church ministry, bringing the additional dimension of faith to their work. Princeton Seminary graduates currently serve as faculty members at New Jersey seminaries (New Brunswick Theological Seminary, the Theological School of Drew University, Princeton Theological Seminary). A total of 1,290 Princeton Seminary graduates live, work or are retired in New Jersey, likely still engaged in community service through volunteer activities.

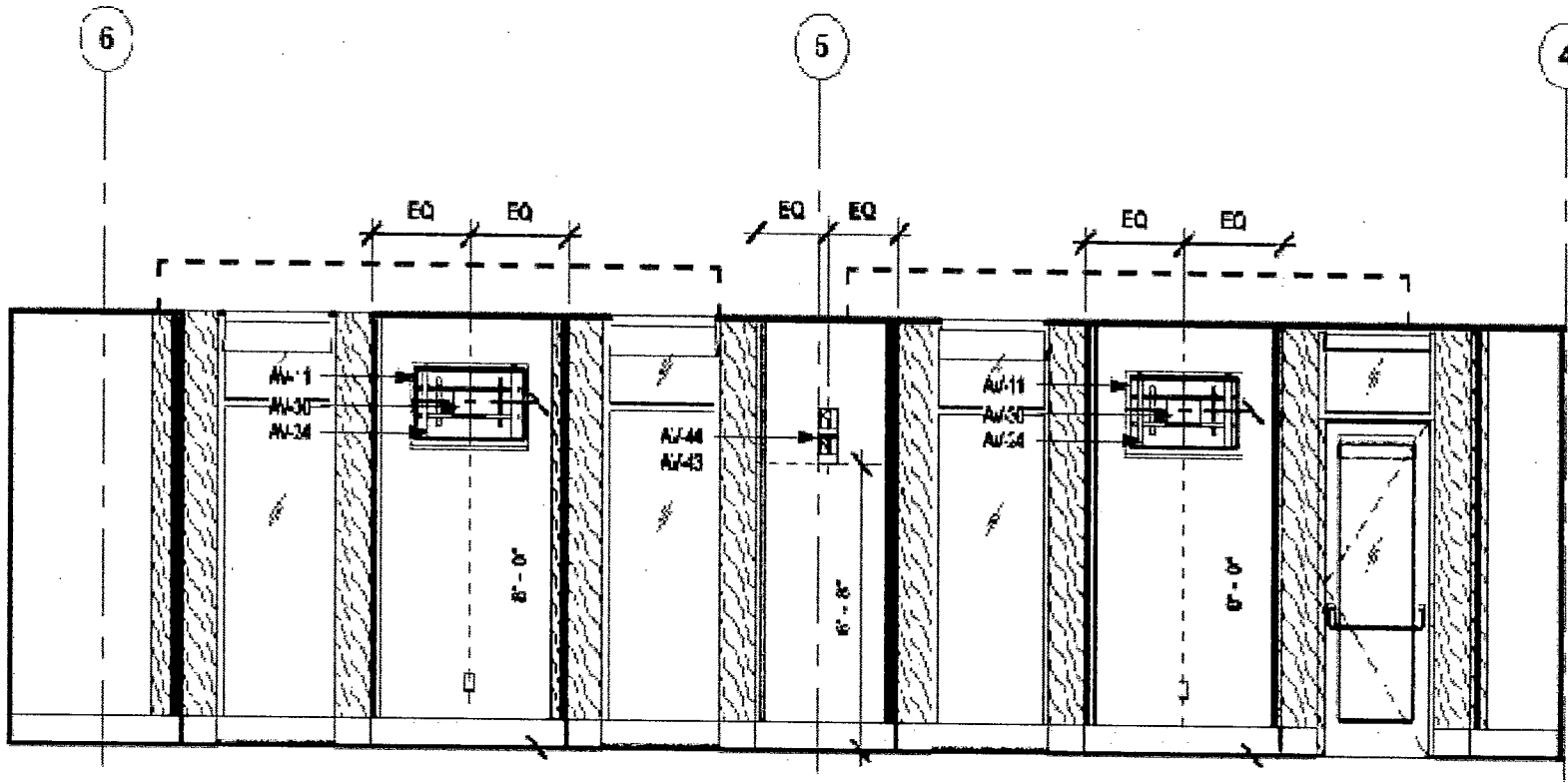
PTS Appendix A

Princeton Theological Seminary

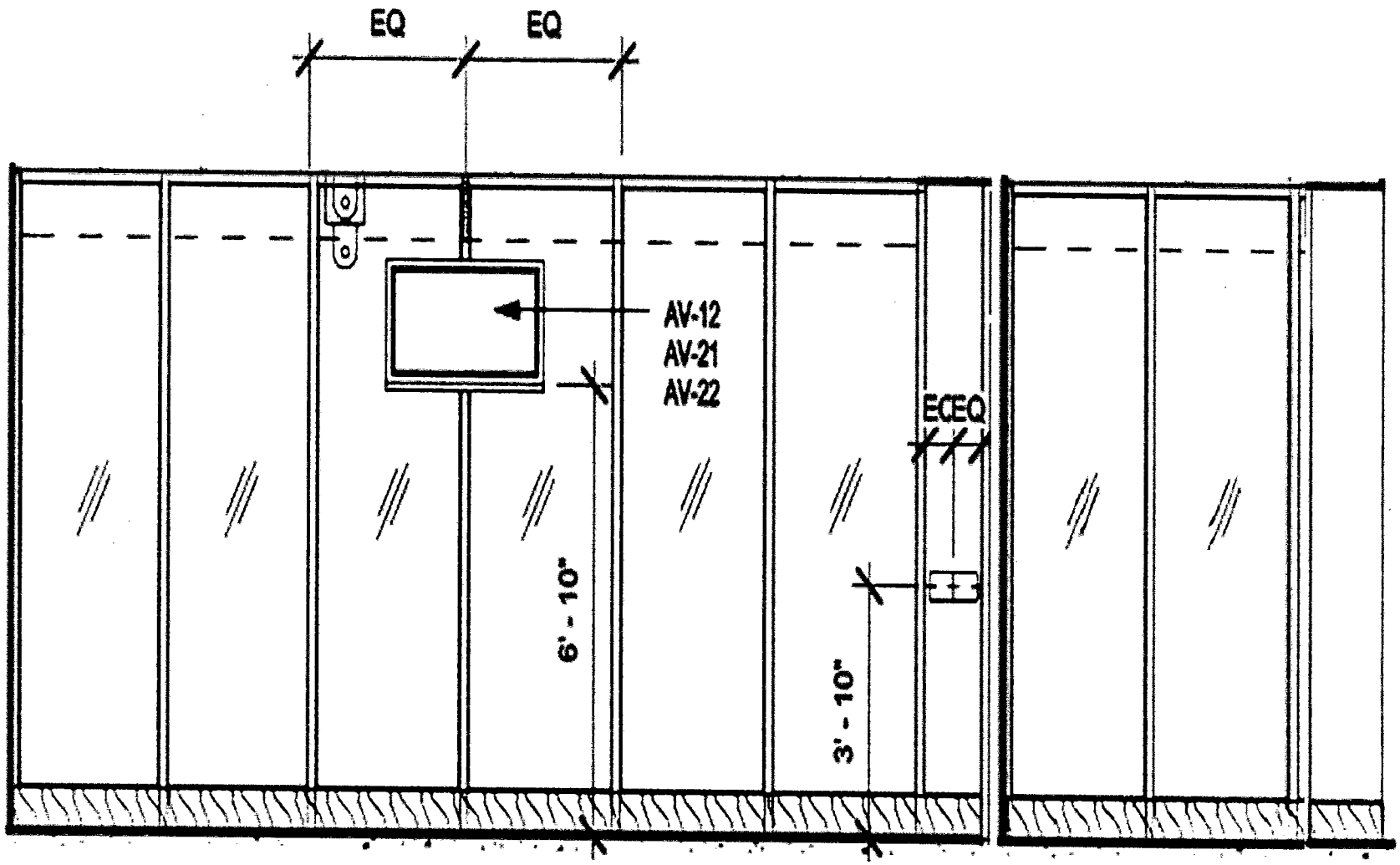
Cooper Conference Room Elevation Plans



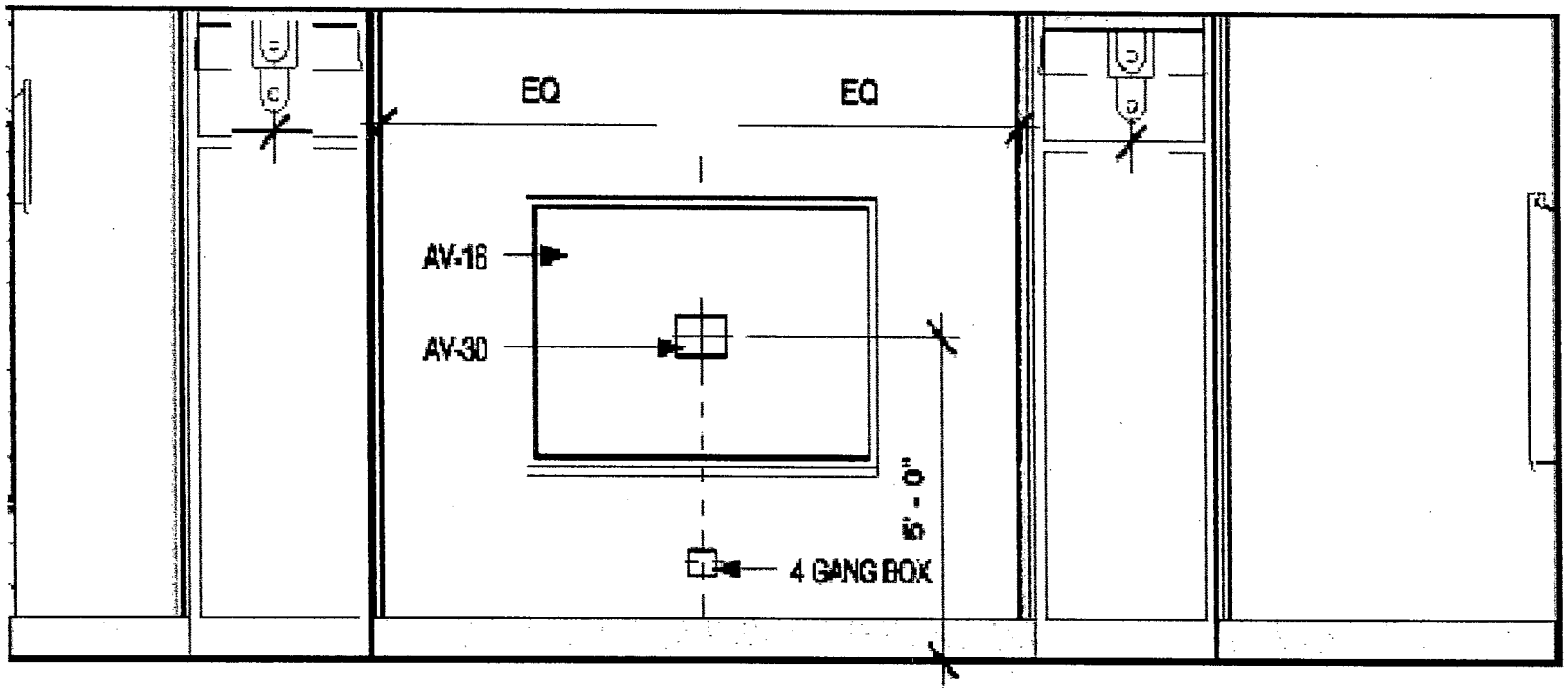
COOPER CONFERENCE ROOM
NORTH ELEVATION
3/6/1213



COOPER CONFERENCE ROOM
SOUTH WALL ELEVATON
3/6/2013



COOPER CONFERENCE ROOM
EAST WALL ELEVATION
3/6/2013



COOPER CONFERENCE ROOM
WEST ELEVATION
3/6/2013