Graduate Council Curriculum Report

The Graduate Council Curriculum Report (GCCR), which includes all graduate program curricular proposals approved through the Graduate Council curricular review process, is published 12 times each calendar year.

Questions/comments regarding the GCCR or its contents may be directed to the Executive Director of Graduate Education Administration, Elizabeth Price.

March 12, 2014

1. **Program Change:** Nursing—creation and addition of the Doctor of Nursing Practice (D.N.P.) degree (College of Nursing), page 2

2. **New Program:** Accounting, creating and offering the Master of Professional Accounting (M.P.Acc.) degree (Penn State Erie), page 42

3. **New Program:** Engineering Design, offering the Master of Science (M.S.) and the Master of Engineering (M.Eng.) degrees (College of Engineering), page 64

Note: Graduate course proposals approved through the Graduate Council curricular review process, as well as information about postbaccalaureate/graduate credit certificates approved by college/school administrators for graduate education, are published in the Senate Curriculum Report.
GRADUATE COUNCIL
PROGRAM, OPTION, OR MINOR PROPOSAL FORM

Submit 1 original, signed Graduate Council proposal form and 7 hard copies of the graduate program proposal document, with a copy of the signed proposal form attached to each proposal copy, to the Curriculum Coordinator, University Faculty Senate, 101 Kem Graduate Building. The proposals will be transmitted to the Dean of the Graduate School for entry into the Graduate Council curricular review process; for more information about the process, see the Overview of the Graduate Council Curricular Review Process.

See the Program Proposal Procedures for guidance in preparing a graduate program proposal. If you have questions regarding the preparation of a graduate program proposal or how to complete this form, contact the Office of the Dean of the Graduate School.

College/School: College of Nursing
Department or Instructional Area: Nursing

NEW GRADUATE PROGRAM, OPTION, OR MINOR: Add ___
Designation of new graduate program:
Classification of Instructional Programs (CIP) Code: 51.3818
Designation of new graduate option:
Designation of new graduate minor:

Indicate effective semester (cannot be earlier than the first semester following approval):

EXISTING GRADUATE PROGRAM, OPTION, OR MINOR: Change X Drop ___
Current designation of graduate program: Nursing
Current designation of graduate option:
Current designation of graduate minor:

New designation of existing graduate program (if changing):
New designation of existing graduate option (if changing):
New designation of existing graduate minor (if changing):

Indicate effective semester (cannot be earlier than the first semester following approval): Fall 2014

SUBMITTED BY GRADUATE PROGRAM HEAD:
Judith E. Huecsey
Printed name
Signature
Date: 09/27/13

NOTED BY COLLEGE/SCHOOL REPRESENTATIVE TO GRADUATE COUNCIL SUBCOMMITTEE ON NEW AND REVISED PROGRAMS AND COURSES:
Susan J. Loeb
Printed name
Signature
Date: 09/27/13

APPROVED BY COLLEGE/SCHOOL DEAN/CHANCELLOR (OR DESIGNEE):
Paula Milone-Nuzzo
Printed name
Signature
Date: 09/27/13
**RECOMMENDED BY CHAIR, GRADUATE COUNCIL SUBCOMMITTEE ON NEW AND REVISED PROGRAMS AND COURSES:**

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<tr>
<th>Printed name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>C. Andrew Cole</td>
<td>C. Andrew Cole</td>
<td>3/10/2014</td>
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**RECOMMENDED BY CHAIR, GRADUATE COUNCIL COMMITTEE ON PROGRAMS AND COURSES:**

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<tbody>
<tr>
<td>Christina M. Gruenger</td>
<td>Christina M. Gruenger</td>
<td>3/10/2014</td>
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**NOTED BY DEAN OF THE GRADUATE SCHOOL:**

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Proposal For a New Degree To be Offered Through the World Campus  
In the Graduate Program, College of Nursing

A. Justification for the Program

The purpose of this proposal is to add a new degree, the Doctor of Nursing Practice (D.N.P.), a practice degree, to the College of Nursing’s graduate program (similar to the MD in the College of Medicine). This practice-focused doctoral degree prepares nursing leaders for the highest level of clinical nursing practice. The new degree is being added to align with the recent Institute of Medicine report that states nurses must achieve higher levels of education and training to respond to the increasing healthcare demands. This degree is also reflects the national consensus model for nursing education, which proposes elimination of the master’s degree in nursing and proposes that all nurses be prepared at the doctoral level. Nurses who plan to stay in a practice setting, such as a nurse administrator or an advanced practice nurse (nurse practitioner, clinical nurse specialist, nurse midwife, nurse anesthetist) should obtain a D.N.P. degree. Those nurses who plan to teach should have an Ed.D. or Ph.D. Thus, this degree will position our graduates who plan to stay in a practice environment to meet the demands of a changing healthcare system and to be competitive in the workforce with other nurses with graduate degrees.

B. Objective of the Program

The objective of this program is to add the degree Doctor of Nursing Practice, a practice/professional degree, to the College of Nursing’s graduate program. This degree will be offered online through the World Campus. Students must attend intensives at University Park or the Hershey Medical Center three times during the program. The intensives will be 2-3 days in length. Doctoral degree benchmarks will be incorporated into two of the intensives (candidacy and comprehensives). The final oral presentation will be independent of an intensive and be done using distance technology.

This new D.N.P. degree is for nurses with either a bachelor’s degree with a major in nursing or an master’s degree with a major in nursing who plan to continue in a practice role (versus an academic/research role). This degree aligns with national guidelines and organizations that pronounced this degree as the terminal practice degree for all nurse administrators and advanced practice nurses, including nurse practitioners, clinical nurse specialists, nurse midwives, and nurse anesthetists.

This new degree does not overlap with other degrees offered in the University. It is designed for nurses with a B.S in nursing\(^1\) or an M.S.N. or M.S.\(^2\) with a major in nursing.

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\(^1\) For clarity, Penn State’s undergraduate program offers a B.S. degree with a major in nursing while other schools offer a B.S. (Bachelor of Science in Nursing), for this proposal the designation B.S. will be used.

\(^2\) Penn State offers both an M.S. with a major in nursing and an M.S.N. (Master of Science Nursing), for this proposal, the M.S.N. designation will be used.
C. New Courses

Six new courses have been developed for this program. These are:

- **NURS 830**: Evidence Based-Practice I: Theory and Research Methods; 3 Credits
- **NURS 831**: Evidence Based-Practice II: Translation of Research; 3 Credits
- **NURS 832**: Doctor of Nursing Practice Leadership I; 3 Credits
- **NURS 833**: Doctor of Nursing Practice Leadership II; 3 Credits
- **NURS 834**: Doctor of Nursing Practice Clinical Practice; 1-8 credits (variable 1-4 Credits)
- **NURS 835**: Doctor of Nursing Practice Capstone Project; minimum 6 Credits; (variable 2-3 credits)

D. Program Statement

The D.N.P. degree will have two entry options: directly from the B.S. for nurse administrators or a post-M.S.N. entry for nurse administrators and advanced practice nurses (nurse practitioners, clinical nurse specialists, nurse midwives, and nurse anesthetists). The B.S. to D.N.P. program will include a minimum of 1000 hours of practicum and 61 credits. Practicum hours are on a 1 to 5 ratio: 1 didactic credit is equivalent to each 75 hours of practicum time.

For the post-M.S.N. entry, the program will be flexible, allowing students to apply up to 600 practicum hours from their M.S.N. program to count towards the 1000 hours of practicum time that are required by the national accrediting agencies. Other courses that meet the requirements for this degree will be accepted. The typical post-M.S.N. student will complete between 38 credits and 46 credits depending on the number of practicum hours needed to meet the 1000-hour requirement. A minimum of 30 credits at Penn State for the post-M.S.N. entry will be required. The Associate Dean for Graduate Education will work with Graduate Enrollment Services after the D.N.P. degree is approved in order to implement appropriate procedures to ensure verification of requirements for graduation.

The D.N.P. program of study is built on the D.N.P. essentials that were developed by the American Association of Colleges of Nursing and used as a basis for program accreditation. This new program will undergo accreditation by the two national agencies, the Accreditation Commission for Education in Nursing and the Commission on Collegiate Nursing Education. Both agencies currently accredit the College of Nursing’s B.S., M.S., and M.S.N. programs.

The core D.N.P. essentials include translation of research into practice, transformational leadership, and advanced expert nursing practice. To support these essentials, other coursework will include nursing/change theory, foundations of advanced practice, health policy, informatics, and population-based health. The capstone of the program is an evidence-based practice project. The goal of the project is to produce an actual, deliverable product that has originated from practice experience. Students will identify a problem and use evidence-based research to develop a proposal to implement and evaluate a practice change initiative. Practice change projects include: pilot studies, program evaluations, quality improvement projects, evaluation of new practice models,
or consulting projects. The theme that links these forms of scholarly experiences is the use of evidence to improve either practice or patient outcomes. Two exemplar projects are: 1. Evaluation of a nursing protocol to decrease urinary tract infections; 2. Evaluation of the outcomes of a patient education program on hospital readmissions for heart failure.

The program plans to use a combination of new courses and pre-existing nursing courses, along with electives to ensure that each student has the requisite knowledge to be prepared to fulfill this advanced role. There are practicum hours associated with the two new D.N.P. leadership courses (NURS 832; NURS 833) and with the D.N.P. capstone project course (NURS 835). Students admitted directly from their bachelor's degree in nursing and those post-M.S.N. students with less than 600 hours of academic practicum hours, will make up the hours (to reach 1000) in NURS 834, the D.N.P. clinical practicum course. These experiences will be tailored to the educational needs of the student. Students will not be permitted to use their work hours in lieu of the prescribed practicum hours required for program completion. Students will identify practicum preceptors in their own institutions or their geographical location. In our current M.S.N. program, students who participate both via Residential Instruction (RI) and World Campus identify their own potential preceptors. This process has been successful with a large number of students. Our plan is to enroll approximately 25 D.N.P. students. Having a sufficient number of preceptors should not be an issue with this small number of students. Adhering to the pre-existing evaluation plan that the College of Nursing presently uses for all preceptors, these preceptors will be required to submit a CV, proof of licensure and malpractice insurance (if applicable), and letter of agreement from their institution. Evaluation of the preceptor also will occur following the practicum experience by both the student and faculty member assigned to the course. This process is part of the College's formal systematic program evaluation plan (SPEP).

NURS 835, Doctor of Nursing Practice Capstone Project, is a minimum of 6 credits (2 didactic and 4 practicum [300 hours]); with 3 credits (1 didactic and 2 practicum [150 hours]) taken in fall and 3 credits (1 didactic and 2 practicum [150 hours]) in spring. Following completion of the required 6 credits, if the capstone project is not finished, students will be required to register for 2 credits (1 didactic and 1 practicum) each semester until the project is completed. Students will receive a quality grade for their project from the faculty member responsible for NURS 835. The oral presentation of the project will be evaluated by the student’s doctoral committee following the final oral presentation. This evaluation will use the same scale as the present Graduate School’s Report of Doctoral Final Oral Examination, with the decision being pass or fail.

Doctoral Benchmarks
D.N.P. benchmarks were examined from the 14 CIC schools with nursing programs (University of Wisconsin has three campuses with unique schools of nursing) and the University of Pittsburg and Johns Hopkins (the University of Pennsylvania does not offer a D.N.P. program). Most of these programs do not have benchmarks that equate to an academic degree (Ph.D.) or a professional degree (D.Ed.). Typically students present the
capstone project proposal and then a final completed project presentation. A few programs have their students submit the final project for publication in lieu of a presentation. Capstone or D.N.P. committees consist of 2 to 3 members (the adviser and 1 or 2 other nursing faculty). Only two schools have an outside of department member. These schools deliver their programs through residential instruction.

D.N.P. Committee Composition
The doctoral committee will consist of the student’s academic adviser, the Capstone course (NURS 835) instructor, and a third member of the graduate faculty, all from the graduate program in Nursing. The academic adviser will be the chair of the committee.

Candidacy
In the College of Nursing, the candidacy review for D.N.P. students will be used to evaluate the student’s past performance and potential for successfully completing the program. For the Post-M.S.N. to D.N.P. students, the review will occur after the completion of their first semester of doctoral work (10 credits). For the B.S. to D.N.P. students, the process will occur after semester III of full-time study. Students will submit a portfolio for review. The portfolio will include:

1. Narrative Statement/Career Goals
   **Evaluative Criteria:** The student will articulate his/her area of interest and career goals clearly and concisely in narrative format (Maximum length: one page, single spaced).

2. Unofficial transcripts of all graduate study at Penn State completed prior to examination
   **Evaluative Criteria:** Performance in all courses will meet or exceed the minimum quality grade requirements of the College of Nursing (i.e., “B” or better). For any course in which the student fails to meet minimum criteria, an explanation and plan for remediation is required.

3. Capstone Project Plan
   **Evaluative Criteria:** Identification of a problem that is significant to practice or patient outcomes; a brief description of the proposed plan to address this problem and the setting in which the project will be implemented (Maximum length: 1 page, single spaced).
   - Students who fail on the first attempt may repeat the process once.

Comprehensive Examination
The comprehensive examination will mark the student’s progression into his/her capstone project. Students will submit a written project proposal to their doctoral committee and do an oral presentation of their proposal. The doctoral committee will determine the outcome.

- **Outcome:** The examination process results in a pass-fail determination.
- Students who fail on the first attempt may repeat the process once.
Final Oral Presentation

The final oral presentation marks the student’s completion of the program and is administered by the doctoral committee. The student will not be required to come to Penn State for the presentation. The presentation will be done synchronously using distance technology, such as ZOOM. The student and doctoral committee will connect via this technology. The committee will be physically located at either the University Park or Hershey Medical Center campus. The public will be invited to join at these sites or connect via ZOOM. A link will be included with the flyer and e-mails that are distributed about the presentation. ZOOM allows for live synchronous presentations and discussions and doe not require equipment beyond a laptop with a camera. The actual presentation consists of a public oral presentation of the project by the candidate and a private period of questions and responses.

Students will receive a quality grade for their project paper from the faculty member responsible for NURS 835. The final oral presentation of the project will be evaluated by their doctoral committee. This evaluation will use the same scale as the present Graduate School’s Report of Doctoral Final Oral Examination, with the decision being pass or fail. Students who fail on the first attempt may repeat the process once.

The Associate Dean for Graduate Education will sign off on the final paper, following completion of the paper during NURS 835 and the student’s passing of the oral presentation. The student’s final paper will be made publically available through ScholarSphere: https://scholarsphere.psu.edu/.

Graduate faculty advisers will work with students throughout the program, and will be actively involved with the students during the development and implementation of the capstone project. Advisers will be closely involved with students during the three intensive sessions at University Park or at the Hershey Medical Center. The schedule for intensives and activities are in the table below (based on a post-M.S.N. entry; B.S.-D.N.P entry activities will begin year 2, for a full-time student):

<table>
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<tr>
<th>Timeframe</th>
<th>Activities</th>
<th>Adviser/Faculty involvement</th>
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<tbody>
<tr>
<td>Intensive 1</td>
<td>NURS 590- joint colloquium with new PhD students</td>
<td>• Meet with adviser- program planning and initial plan for D.N.P. capstone project (area of interest).</td>
</tr>
<tr>
<td>August- Semester I</td>
<td></td>
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| Intensive 2      | Candidacy- portfolio NURS 587- Joint research ethics class with PhD students | • Candidacy committee will review the candidacy materials and make a recommendation to the Graduate Faculty  
• Meet with adviser following candidacy to solidify practice problem being investigated.  
• Throughout the semester,                                                   |
| January Semester II |                                                                            |                                                                                               |
the adviser will review the project proposal.

<table>
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<tr>
<th>Semester IV</th>
<th>Final Oral Presentation of D.N.P. capstone project</th>
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<td>• Doctoral committee will evaluate the capstone project presentation (scale: superior, above average, average, below average, fail); results are pass/fail.</td>
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<td></td>
<td>• The Associate Dean for Graduate Education signs off on the final paper, following completion of the paper during NURS 835, and the student’s passing of the final oral presentation.</td>
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**Proposed B.S. to D.N.P. Curriculum (Nurse Administrator)**

The curriculum will be composed of seven components: 61 Credits (* denotes new DNP courses)

1. Master’s Core: 9 credits
   - NURS 501: Issues in Nursing and Health Care (3 credits)
   - NURS 510: Theoretical and Scientific Foundations of Advanced Nursing Practice (3 credits)
   - NURS 512: Nursing Research (3 credits)

2. Nurse Administrator Option Courses: 13 credits
   - NURS 846: Leadership Concepts and Theories for Nurse Administrators (3 credits)
   - NURS 847: Human Resource and Workforce Issues for Nurse Administrators (3 credits)
   - NURS 848: Synthesis and Application of the Nurse Administrator Role (4 credits)

3. D.N.P. Core Courses: 12 credits
   - *NURS 830: Evidence Based-Practice I: Theory and Research Methods (3 Credits)
   - *NURS 831: Evidence Based-Practice II: Translation of Research (3 Credits)
   - *NURS 832: Doctor of Nursing Practice Leadership I (3 Credits)
   - *NURS 833: Doctor of Nursing Practice Leadership II (3 Credits)
4. Other Required Courses: 2 credits
   NURS 590: Colloquium (1 credit) (first year doctoral student research colloquium; Ph.D. & D.N.P.)
   NURS 587: Ethics in Nursing Research (1 credit) (Ph.D. & D.N.P. students; SARI requirement met)

5. Advanced Practice Clinical: 5 credits (needed to meet the 1000 hour requirement)
   *NURS 834: Doctor of Nursing Practice Clinical Practice (5 Credits) (variable 1-4; repeatable)

6. Capstone Requirement: capstone project: minimum - 6 credits
   *NURS 835: Doctor of Nursing Practice Capstone Project (2-3 Credits) (repeatable)

7. Electives: 14 credits
   (Courses highlighted in gray have been previously approved as electives for the nurse administrator option; permission to include the STATs courses as electives is attached)

May include:

NURS 460: Advanced Concepts in Nursing Informatics (3 credits)
NURS 508: Population-Based Health (3 credits)
NURS 522: Comprehensive Assessment of the Older Adult (3 credits)
NURS 523: Interventions for Common Health Issues in Older Adults (3 credits)
NURS 840: Nursing Education Theories and Strategies (3 credits)
NURS 841: Assessment and Evaluation in Nursing Education (3 credits)
NURS 842: Curriculum and Program Development in Nursing Education (3 credits)
HRER 501: Labor and Employment Law Legal Context of Employment in the United States (3 credits)
HRER 802: Organizations in the Workplace (3 credits)
HRER 836: Diversity in the Workplace (3 credits)
PHP 527: Public Health Evaluation of Disasters and Bioterrorism (3 credits)
PHP 530: Critical Infrastructure Protection of Health Care Delivery Systems (3 credits)
STAT 500: Applied Statistics (3 credits)
STAT 501: Regression Methods (3 credits)
STAT 507: Epidemiological Research Methods (3 credits)
STAT 509: Design and Analysis of Clinical Trials (3 credits)
STAT 800: Applied Research Methods (3 credits)

B.S. to D.N.P. Proposed Plan of Study

<table>
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<th>Nurse Administrator</th>
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9
### Proposed M.S.N. to D.N.P. Curriculum

The M.S.N. to D.N.P. curriculum will be composed of five components: 38-46 Credits (* denotes new DNP courses)

1. **D.N.P. Core Courses**: 12 credits
   - *NURS 846: Leadership Concepts and Theories for Nurse Administrators: 3 credits*
   - *NURS 501: Theoretical and Scientific Foundations of Nursing Practice: 3 credits*
   - *NURS 512: Nursing Research: 3 credits*

2. **Other Required Courses**: 8 credits
   - NURS 510: Theoretical and Scientific Foundations of Advanced Nursing Practice (3 credits)

**FULL-TIME 6 Semesters**

**Minimum 61 Credits (1050 practicum hours)**

<table>
<thead>
<tr>
<th>Fall (Semester I)</th>
<th>Spring (Semester II)</th>
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<tbody>
<tr>
<td>NURS 510: Theoretical and Scientific Foundations of Nursing Practice: 3 credits</td>
<td>Administration Elective: 3 credits</td>
</tr>
<tr>
<td>NURS 512: Nursing Research: 3 credits</td>
<td>NURS 501: Issues in Nursing and Health Care: 3 credits</td>
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<tr>
<td><strong>Total: 9 credits</strong></td>
<td><strong>Total: 9 credits</strong></td>
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<tr>
<th>Fall (Semester III)</th>
<th>Spring (Semester IV)</th>
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<tbody>
<tr>
<td>STAT 500: Applied Statistics: 3 credits</td>
<td>Administration Elective: 3 credits</td>
</tr>
<tr>
<td>NURS 847: Human Resource and Workforce Issues for Nurse Administrators: 3 credits</td>
<td>NURS 587: Ethics in Nursing Research: 1 credit</td>
</tr>
<tr>
<td>NURS 590: Colloquium: 1 credit</td>
<td>NURS 848: Synthesis and Application of the Nurse Administrator Role: 4 credits (300 hours practicum)</td>
</tr>
<tr>
<td>NURS 830: EBP I: Theory and Methods: 3 credits</td>
<td>NURS 831: EBP II Translation of Research: 3 credits</td>
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</table>
| **Total: 10 credits** | **Total: 11 credits**  
[300 practicum hours] |

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<tr>
<th>Fall (Semester V)</th>
<th>Spring (Semester VI)</th>
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<tbody>
<tr>
<td>STAT 507: Epidemiological Research Methods: 3 credits</td>
<td>NURS 460: Informatics: 3 credits</td>
</tr>
<tr>
<td>NURS 832: DNP Leadership I: 3 credits [2 credits didactic, 1 credit practicum: 75 hours]</td>
<td>NURS 833: DNP Leadership II: 3 credits [2 credits didactic, 1 credit practicum: 75 hours]</td>
</tr>
<tr>
<td>NURS 834: DNP Clinical Practice 3 credits [225 hours practicum]</td>
<td>NURS 834: DNP Clinical Practice: 1 credit [75 hours practicum]</td>
</tr>
<tr>
<td>NURS 835: DNP Capstone Project: 3 credits [1 credit didactic, 2 credits practicum: 150 hours]</td>
<td>NURS 835: DNP Capstone Project: 3 credits [1 credit didactic, 2 credits practicum: 150 hours]</td>
</tr>
</tbody>
</table>
| **Total: 12 credits**  
[450 practicum hours] | **Total: 10 credits**  
[300 practicum hours] |

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### Notes

- **NURS 830**: Evidence Based-Practice I: Theory and Research Methods (3 Credits)
- **NURS 831**: Evidence Based-Practice II: Translation of Research (3 Credits)
- **NURS 832**: Doctor of Nursing Practice Leadership I (3 Credits)
- **NURS 833**: Doctor of Nursing Practice Leadership II (3 Credits)
NURS 590: Colloquium (1 credit) (first year doctoral student research colloquium; Ph.D. & D.N.P. students)
NURS 587: Ethics in Nursing Research (1 credit) (Ph.D. & D.N.P. students; SARI requirement met)

3. Advanced Practice Clinical: 0-8 credits (depending on the number of practicum hours in a M.S.N. program)
   * NURS 834: Doctor of Nursing Practice Clinical Practice: (0-8 Credits: number of credits depend on the number of hours completed in the student’s M.S.N. program, if 600 hours were completed, additional clinical practice hours are not required) (variable 1-4; repeatable)

4. Capstone Requirement: capstone project: minimum - 6 credits
   * NURS 835: Doctor of Nursing Practice Capstone Project: (2-3 Credits) (repeatable)

5. Electives: 12 credits
   (Permission to include the STATs courses as electives is attached)

May include:
NURS 460: Advanced Concepts in Nursing Informatics (3 credits)
NURS 508: Population-Based Health (3 credits)
NURS 522: Comprehensive Assessment of the Older Adult (3 credits)
NURS 523: Interventions for Common Health Issues in Older Adults (3 credits)
NURS 840: Nursing Education Theories and Strategies (3 credits)
NURS 841: Assessment and Evaluation in Nursing Education (3 credits)
NURS 842: Curriculum and Program Development in Nursing Education (3 credits)
NURS 846: Leadership Concepts and Theories for Nurse Administrators (3 credits)
NURS 847: Human Resource and Workforce Issues for Nurse Administrators (3 credits)
STAT 500: Applied Statistics (3 credits)
STAT 501: Regression Methods (3 credits)
STAT 507: Epidemiological Research Methods (3 credits)
STAT 509: Design and Analysis of Clinical Trials (3 credits)
STAT 800: Applied Research Methods (3 credits)
### E. Admission Requirements

- A bachelor’s degree in Nursing from a U.S. regionally accredited institution or a postsecondary degree in Nursing that is equivalent to a U.S. baccalaureate degree earned from an officially recognized degree-granting international institution. Students entering from the post-master’s route must have earned a master’s degree with a major in nursing from a program accredited by a national accrediting agency for nursing.
- Grade-point average (4.0 scale):
a. B.S. to D.N.P.: cumulative undergraduate GPA ≥ 3.5 and B+ or better on subsequent coursework
b. M.S.N to D.N.P.: cumulative graduate GPA ≥ 3.5 and B+ or better on subsequent coursework

- A current license to practice professional nursing in at least one U.S. state.
- Three letters of reference (The letters should be solicited from professional colleagues and faculty who can attest to the applicant's ability)
- A statement of purpose/goal statement
- A published or unpublished scientific paper, thesis, or other scholarly writing sample
- A curriculum vitae
- An interview (either in person or via internet-based video conferencing)

F. Justification for Degree Title

The nationally accepted degree designation for the practice doctorate in nursing is the Doctor of Nursing Practice, D.N.P.

G. Accreditation

The graduate degree programs (except the Ph.D.) in the College of Nursing are accredited by the Accreditation Commission for Education in Nursing and the Commission on Collegiate Nursing Education. Although all of our accrediting/approval bodies will need to be notified about the new degree and the program will have to be reviewed once the first class graduates; this change will not impact the College's current accreditation status.

H. Departments Affected

None. Letters of support from CHHD, the College of Medicine (including the Medical School), and World Campus are attached. The applicant pool to the D.N.P. program is different than those applicants applying to the medical school or the physician’s assistant program at the Hershey Medical Center and we will not be using any clinical sites that would compete with the clinical programs in the College of Medicine.

Reporting of Program Quality

As per the Graduate Council policy, the College of Nursing will report back to the Committee on Programs and Courses three years after beginning the enrollment of online D.N.P. students with information assessing the success and quality of the program.

Fiscal Responsibility for the Program

Fiscal responsibility for the online delivery of the D.N.P degree program will be shared between the College of Nursing and the World Campus. The World Campus has committed to fund two fixed-term I faculty members (100% salary plus fringe) for three years for this program (see Appendix II). As per the MOA, we have hired the first faculty member to assist with program development and are recruiting the second faculty member. The World Campus will provide instructional design, marketing, project
management, and faculty development. The College of Nursing will retain overall administrative responsibility for the online program including the hiring of faculty and paying salaries beyond the World Campus’ commitment.

**Essential Elements of Residency**

The College of Nursing’s Professor in Charge of Professional Graduate Programs will be responsible for ensuring that these seven essential elements of residency are met.

A. *Interaction between faculty and students above and beyond direct instruction*

In traditional resident instruction programs, interaction between students and faculty or academic advisers takes place in person, by email, or by phone conferences. Interactions with faculty and advisers will not be compromised for students in the online D.N.P. program. For the purposes of informal mentoring, academic advising, or career counseling, interaction between students and faculty or faculty advisers may be facilitated by the use of ANGEL communication tools, email, phone conferences, and virtual office hours. Technologies such as ZOOM or Adobe Connect may also be used as alternatives to face-to-face interaction.

The ANGEL site for each course will provide faculty information. The faculty member may use the announcements feature in ANGEL to disseminate general information to students. Contact information for faculty and advisers in the D.N.P. program will be made available on the College of Nursing website, as well as on the World Campus website.

The D.N.P. program also includes four intensives that will be held either at University Park or at the Hershey Medical Center. In addition to class time, these intensives will allow in-person interactions between faculty and students.

B. *Interaction among students in the program*

Students in the D.N.P. program will have time to interact in-person with each other and with the Ph.D. students during the four intensives. We hope that these live sessions will allow the students to get to know each other and feel like they are part of a cohort as they progress through the program.

In the ANGEL site for each course, an introduction discussion forum will be used so that students can become acquainted with other students in the class. Also in the ANGEL course sites, a "cyber café" discussion forum may be available (but not required) for informal communication among students.

Using the discussion forums feature in ANGEL, students will have the opportunity to share ideas, opinions, and professional experiences with one another. In order to encourage student interaction, meaningful participation in threaded discussions may contribute to the course grade.

To promote collaborative work, students may be required to complete group or team projects as a course assignment. To accomplish these group assignments, interaction among students will be facilitated by Voice Thread, discussion forums in ANGEL, and
email communication. Students may also have the option to use technologies such as ZOOM or Adobe Connect to interact with one another.

C. Access to information and instructional resources
Course-specific information and resources will be available to students through the ANGEL site for each course. General information about library resources is available to online students on both the World Campus website and the University Libraries website. Students will have electronic access to Penn State University Library resources. Using the University Libraries website, students can access full-text journals in nursing and healthcare and utilize searchable databases, including CINAHL, PubMed, and Proquest Nursing & Allied Health. Additionally, faculty can make instructional resources available to students through electronic reserves in the Penn State Library system.

D. Exposure to and socialization in the field of study
Students will have exposure to nurse leaders during numerous courses. Specifically, in the two D.N.P. leadership courses (NURS 832 and NURS 833), students will work with professional mentors in their appropriate specialty area. The practicum course (NURS 834) is designed to be a synthesis in the application of the D.N.P. role in healthcare settings. During the capstone course (NURS 835), students will be designing and implementing their evidence-based project in conjunction with faculty and leaders in their own healthcare facility.

Students will be notified of and encouraged to attend local, regional, or national conferences within their field of study or to participate in webinars offered by professional organizations and the College of Nursing. Information about various professional organizations and events will be made available to students via email, ANGEL communications, and the College of Nursing website.

E. Ready access to suitable academic advising and support services
The World Campus website offers a wealth of information for online graduate students. New student orientation and ANGEL tutorials are provided, as well as information about academic advising, career counseling, and many other support services. For technical support, students can contact the World Campus help desk by email or by a toll-free phone number.

The College of Nursing has also hired a graduate adviser who will be available to answer questions and assist with the plans of study. Each student also will be assigned an academic adviser in the College of Nursing. The adviser will be a member of the College’s graduate faculty and provide guidance throughout the program. Specifically, advisers will meet with the students during the intensives, assist with the development of their capstone project proposal, and the implementation and dissemination of the project.

During the academic year, the adviser will be available by email, ZOOM, or phone. Students can contact the College of Nursing’s Professor in Charge of Professional Graduate Programs, their adviser, the graduate adviser, or support staff in the College of
Nursing for assistance. Contact information will be made available on the College of Nursing’s website as well as on the World Campus website.

F. Contribution of graduate students to the degree program, college, and university
Students will have the opportunity to serve on College of Nursing committees, such as the Graduate Affairs committee and be a member of the College’s Doctoral Student Organization. Students at a distance can participate in committee meetings via a ZOOM connection into the polycom rooms.

All students will be encouraged to complete the SRTE course evaluations so that their feedback can be used to improve instructional quality. At the completion of their program of study, graduates will be asked complete the online end-of-program evaluation.

G. Identification with Penn State
Students will be considered members of the Penn State College of Nursing community and will receive the same notices of news and events that the resident instruction students receive. All official written and electronic communication with students will be clearly identified as being associated with Penn State University.

There are many additional ways that online students can maintain a connection to the University. Online students can join the World Campus chapter of the Blue White Society, which is the student branch of the Penn State Alumni Association. Penn State’s World Campus has a Facebook page, as does the Penn State Nursing Alumni Society.
Graduate Bulletin Changes

Current Bulletin with Changes Highlighted/Deletions with Strikeouts

Nursing (NURS)
Program Home Page

PAULA MILONE-NUZZO, Dean, College of Nursing
JUDITH E. HUPCEY, Associate Dean for Graduate Education

201 Health and Human Development East Building - 814-863-0245

Degrees Conferred:
Ph.D., D.N.P., M.S., M.S.N., Dual Title Ph.D. in Nursing and Bioethics (BIOET)

The Graduate Faculty
- Kesha Baptiste-Roberts, Ph.D. (Johns Hopkins) Assistant Professor of Nursing
- Raymonde A. Brown, Ph.D. (Maryland) Assistant Professor of Nursing; Associate Dean for Undergraduate Programs and Outreach in Nursing
- Harleah G. Buck, Ph.D. (Southern Florida) Assistant Professor of Nursing
- Margaret (Peg) Cushman, Ph.D. (UMass, Boston) Assistant Professor of Nursing
- Christopher Engeland, Ph.D., (University of Western Ontario) Assistant Professor
- Donna Fick, Ph.D. (California) Distinguished Professor of Nursing
- Janet Fogg, Ph.D. (Villanova) Assistant Professor of Nursing; Professor in Charge, Professional Graduate Programs
- Judith E. Hupcey, Ed.D. (Columbia) Professor of Nursing; Associate Dean for Graduate Education, College of Nursing
- Kathaleen Johnson, D.N.P. (Robert Morris) Instructor in Nursing
- Lisa A. Kitko, Ph.D. (Penn State) Assistant Professor of Nursing; Coordinator, Clinical Nurse Specialist Option
- Ann M. Kolanowski, Ph.D. (New York) Professor of Nursing; Elouise Ross Eberly Professor of The School College of Nursing
- Susan J. Loeb, Ph.D. (Penn State) Associate Professor of Nursing
- Kathleen G. Mastrian, Ph.D. (Kent State) Assistant Professor of Nursing
- Paula Milone-Nuzzo, Ph.D. (Connecticut) Professor and Dean, School College of Nursing
- Janice L. Penrod, Ph.D. (Penn State) Professor of Nursing
- Amy M. Sawyer, Ph.D. (Pennsylvania) Assistant Professor of Nursing
- Carol A. Smith, D.S.N. (Alabama) Associate Professor of Nursing
- Patricia Sweeney, Ph.D. (Penn State) Assistant Professor of Nursing; Director, Nurse Practitioner Program

The graduate programs emphasize productive scholarship and research in the development of nursing knowledge and the translation of knowledge into practice. Advanced study is in human health and development throughout the life span, and in nursing’s role in providing health services to individuals, families, and communities.
The Ph.D. program and the dual-title Ph.D. program in nursing and bioethics prepare nurse scientists and clinical scholars to provide leadership in nursing education, practice and research. Individualized curricula prepare nursing graduates to assume positions as faculty, advanced clinicians, clinical researchers, and leadership positions in educational, community, governmental, or institutional settings.

The D.N.P. degree program prepares nurse administrators and advanced practice nurses to assume leadership roles in practice settings in the community, governmental agencies, or healthcare institutions.

The M.S. degree program with a major in nursing prepares nurse scientists and clinical scholars who plan to complete a Ph.D. in nursing or dual-title Ph.D. in nursing and bioethics.

The M.S.N. degree in Nursing consists of a base program with two emphasis areas and six options. The Base Program emphasis areas are: Clinical Trials Research or Community Health Policy and Management. The options include: Clinical Nurse Specialist, Family Nurse Practitioner, Adult Gerontology Primary Care Nurse Practitioner, Adult Gerontology Acute Care Nurse Practitioner, Nurse Administrator, and Nurse Educator.

The master’s M.S., M.S.N., and D.N.P. degree programs in Nursing are accredited by the Accreditation Commission for Education in Nursing and the Commission on Collegiate Nursing Education.

The Clinical Trials Research emphasis area enables the student to acquire advanced knowledge of clinical trials research methods, data management and analysis, and ethical considerations. The program is designed to prepare graduates for a variety of roles in clinical trials research, including coordinators, educators, or consultants. The curriculum will assist graduates in preparing for national certification as a clinical research professional.

The Community Health Policy and Management area emphasis enables the student to acquire advanced knowledge of management principles, epidemiology, public health, and health care economics. The program is designed to prepare graduates for leadership roles in community and public health nursing. The curriculum will assist graduates in preparing for national certification as an advanced public health nurse.

The Nurse Practitioner options are designed to help prepare the professional nurse to function in an expanded nursing role providing direct care to specific groups of clients in a variety of health care settings. Since that practice is inherently interdisciplinary in nature, advanced knowledge and research from nursing is combined with knowledge from science, medicine, and related disciplines. The Nurse Practitioner may also function in supervisory, consultative, education, and research roles.

The Nurse Administrator option enables the student to acquire advanced knowledge of organizational leadership, health policy, and evidence-based health care delivery. The program is designed to prepare students for leadership and administrative roles in a variety of health care settings.

The Nurse Educator option enables the student to acquire advanced knowledge of evidence-based teaching and learning principles, curriculum development, and evaluative techniques. The
program is designed to prepare students for educator roles in a variety of academic and health care settings.

The Clinical Nurse Specialist option prepares advanced practice nurses in Adult Gerontology or Community Health to plan, implement, and evaluate care in a variety of settings. They function in direct care, supervisory, consultative, education, and research roles serving individuals, families, and communities.

**Admission Requirements for M.S., M.S.N., D.N.P., and Ph.D. Programs**

1. For admission to the Nursing program, an applicant must hold either (1) a bachelor's degree in Nursing from a U.S. regionally accredited institution or (2) a postsecondary degree in Nursing that is equivalent to a U.S. baccalaureate degree earned from an officially recognized degree-granting international institution. Students entering the doctoral program via the traditional post-master’s route must have earned a master's degree with a major in nursing from a program accredited by a national accrediting agency for nursing. Well-qualified doctoral Ph.D. applicants with a baccalaureate degree in nursing and master's degree in a related discipline (e.g., public health) will be evaluated individually to assess the need for prerequisite master’s-level course work in nursing for doctoral program admission.

2. Applicants must submit transcripts of all previous course work from institutions of higher learning. For M.S.N. applicants, a cumulative grade-point average of 3.3 (on a 4.0 scale) for junior/senior the baccalaureate degree is expected with a B or better in all science and nursing courses. For M.S. applicants, a cumulative grade-point average of 3.5 (on a 4.0 scale) for junior/senior the baccalaureate degree is expected with a B or better in all science and nursing courses. College chemistry and statistics are also required (chemistry is not required for the nurse administrator option). B.S. to D.N.P. applicants are expected to have a cumulative undergraduate grade-point average of 3.5 (on a 4.0 scale). For masters to Ph.D. or D.N.P. For doctoral applicants, a cumulative grade-point average of 3.5 (on a 4.0 scale) for master’s and subsequent course work is expected.

3. Two letters of reference are required for the M.S.N. degree program and three letters of reference are required for the M.S., D.N.P., and Ph.D. degree programs. The letters should be solicited from professional colleagues and faculty who can attest to the applicant's ability.

4. All applicants must submit a statement of purpose. In addition, M.S., D.N.P., and Ph.D. degree applicants must also submit a published or unpublished scientific paper, thesis, or other scholarly writing sample and a complete curriculum vitae.

5. GRE scores are required for admission to the M.S. and Ph.D. programs. GRE scores are not required for the M.S.N. and D.N.P. applicants, but if the scores are submitted to Penn State they will be reviewed as part of the application.

6. The language of instruction at Penn State is English. All international applicants must take and submit scores for the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), with the exceptions noted below. The minimum acceptable score for the TOEFL is 580 for the paper-based test, or a total score of 100 with a 25 on the speaking section for the Internet-based test (iBT). The minimum composite score for the IELTS is 7. International applicants are exempt from the TOEFL/IELTS requirements who have received a baccalaureate or a graduate degree.
from a college/university/institution in any of the following: Australia, Belize, British
Caribbean and British West Indies, Canada (except Quebec), England, Guyana, Republic
of Ireland, Liberia, New Zealand, Northern Ireland, Scotland, the United States, and
Wales.

7. Applicants to the M.S.N. options and D.N.P. degree offered online via the World Campus
must hold a current license to practice professional nursing in at least one U.S. state. All
other applicants to the M.S. and M.S.N. degree programs must hold a current
Pennsylvania license to practice professional nursing. Applicants to the Ph.D. degree
program must be licensed to practice professional nursing in at least one state or in a
foreign country.

8. Applicants to the Adult Gerontology Acute Care Nurse Practitioner Option are required to
have two years of acute care hospital experience.

9. Applicants to the M.S.N. degree program are encouraged to discuss program options with
the faculty; however, an interview is not required. Doctoral (B.S. - Ph.D., B.S. - D.N.P.,
D.N.P., and Ph.D.) applicants will be contacted by the School College of Nursing to
schedule a required interview (either in person or via telephone - internet-based video
conferencing).

**M.S. and M.S.N. Degree Requirements**

A core of courses including nursing issues, theory, and research is required of all master's
students. Candidates in M.S. degree program (M.S. - Ph.D.) are required to complete a minimum
of 30 credits to be awarded an M.S. degree. The Clinical Nurse Specialist option must earn a
minimum of 41-42 credits, Family Nurse Practitioner option, the requirement is a minimum of
45 credits, Adult Gerontology Primary Care Nurse Practitioner, is a minimum of 41-44 credits,
Adult Gerontology Acute Care Nurse Practitioner, is a minimum of 43 credits, Nurse
Administrator is a minimum of 37 credits, and Nurse Educator is a minimum of 37 credits.

Students in M.S.N. degree program are required to complete a scholarly capstone project, which
demonstrates the application of theory and research to a clinical problem based on review of
literature and research utilization for that problem. Students in the M.S. degree program may
choose to do either a thesis for 6 credits or a scholarly paper for 3 credits develop an application
for a pre-doctoral fellowship.

**D.N.P. Degree Requirements**

Students may enter the program directly from a B.S. in nursing or following completion of a
Master's degree in nursing. For the B.S. in nursing to the D.N.P. for nurse administrators, a core
of master’s courses including nursing issues, theory, and research is required. A minimum of 61
credits, 1000 hours of practicum time, and a capstone project is required. The master's in
nursing to D.N.P. program requires a minimum of 30 post-masters credits completed at Penn
State. The curriculum is individualized based on previous coursework and number of practicum
hours completed during the master’s program. A maximum of 600 practicum hours from the
previous master's program will be accepted to fulfill to 1000 hours of required practicum hours.

For both entry options, students are required to participate in 3 intensives offered at the
University Park or Hershey Medical Center campus. For full-time students, the first intensive is
August of semester I for M.S.N. to D.N.P. and semester III for B.S. to D.N.P. students. Intensive 2
is the beginning of the subsequent semester, intensive 3 is at the end of semester II for M.S.N.
to D.N.P. and semester IV for B.S. to D.N.P. students. In addition to coursework, all students are
required to complete a series of three benchmarks, Candidacy; Comprehensives; and a Final
D.N.P. Doctoral Committee Composition: The doctoral committee will consist of the student’s academic adviser, the Capstone course (NURS 835) instructor, and a third member of the graduate faculty, all from the graduate program in Nursing. The academic adviser will be the chair of the committee.

Candidacy Examination: All students must satisfactorily complete the candidacy examination, which is designed to evaluate the student’s past performance and potential for successfully completing the program. Candidacy typically occurs during the 2nd intensive, which follows completion of one semester of full-time study for the M.S.N. to D.N.P. student and after three semesters of full-time study for the B.S. to D.N.P. student. Students who fail the examination on the first attempt may repeat it once.

Comprehensives: Comprehensives mark the student’s progression into their capstone project. This occurs during the 3rd intensive, when students present their capstone project proposal. Comprehensives need to be successfully completed prior to the submission of the proposal for human subjects’ review or carrying out the project (if it does not require a review). Students who fail the examination on the first attempt may repeat it once.

Final Oral Presentation: Upon completion of the project, the Final Oral Presentation is scheduled. Students are required to present the project for approval by their doctoral committee. The Associate Dean for Graduate Education will sign off on the final paper, following completion of the paper during NURS 835 and the student’s passing of the oral presentation. Students who fail the examination on the first attempt may repeat it once. The student’s final paper will be made publically available through ScholarSphere: https://scholarsphere.psu.edu/.

Ph.D. Degree Requirements
Students may enter the program directly from a B.S. in nursing (receiving a M.S. degree en route to the Ph.D.) or following completion of a Master’s degree (nursing or non-nursing). A dual-title Ph.D. degree in nursing and bioethics and a minor in nursing are also available.

Students entering with a M.S. degree in nursing will complete a minimum of 41-50 credits. In addition to coursework, all students are required to complete a series of examinations, Candidacy; Comprehensives (written and oral components); Dissertation Proposal Defense; and Final Oral Examination. Students also are required to fulfill a residency requirement. This entails being registered as a full-time student (9 credits minimum) engaged in academic work over the courses of two semesters within a twelve-month period (summer sessions are not included).

Candidacy Examination: All students must satisfactorily complete the candidacy examination, which is designed to confirm the student's mastery of basic nursing theory and research methods. For students entering the doctoral program with a master’s degree, the candidacy examination must be taken at the end of the first year of full-time study or the equivalent. Students who fail the examination on the first attempt may repeat it once. Students who fail the examination the second time are terminated from the program.
**Comprehensive Examination:** The comprehensive examination is designed to test the student’s mastery of and ability to synthesize and integrate the theoretical basis for nursing science, advanced research methods and the chosen specialty area. This examination is taken upon completion of all course work. Students who fail the examination on the first attempt may repeat it once. Students who fail the examination the second time are terminated from the program.

**English Competency:** All students will be assessed for deficiencies in reading, writing and speaking of English during the core nursing courses prior to the candidacy examination; should remedial work be necessary, the student will be directed to the appropriate sources. International students will be advised that the passage of the minimal TOEFL or IELTS requirement does not demonstrate the level of competence expected of a Ph.D. in Nursing.

**Communication and Language Requirement:** A foreign language will not be required. However, all students are required to be computer literate in word processing and use of statistical packages, as determined by their dissertation doctoral committee, and will be assessed for communication skills during core nursing courses.

**Dissertation:** Each student is required to conduct an original and independent research project, which adds to nursing’s body of knowledge, and to communicate the research report in a written dissertation. A written dissertation proposal is required and must be approved at a proposal hearing by a majority vote of the student’s dissertation doctoral committee. A majority vote is also required for approval of the completed written dissertation at the final oral defense.

**Dual-Title Ph.D. in Bioethics Degree Requirements**

Nursing Ph.D. students may pursue additional training in bioethics through the dual-title Ph.D. program in Bioethics. To qualify for the dual-title degree, students must satisfy the requirements of the Nursing Ph.D. program. In addition, they must satisfy the requirements described below, as established by the Bioethics program committee. Within this framework, final course selection is determined by the student, their Nursing adviser and their Bioethics program adviser.

**Additional Coursework:** The dual-title Ph.D. in Nursing and Bioethics requires a minimum of 2 credits of coursework beyond the requirements for the Ph.D. in Nursing (16 credits of the 18 Bioethics credits are part of the current degree requirements in Nursing), as follows:

- Seven required credits (BIOET 501, BIOET 502, and BIOET 590), plus at least three additional BIOET credits at the 500 level. These credits can be applied to the 9 credits of specialty coursework for the Nursing PhD.
- Eight additional credits from a list of approved electives at the 400 or 500 level, at least two of which must be at the 500 level (many of the available electives that students may wish to take are 3-credit courses, so 9 additional credits may be a more typical number for most students). The list of elective courses will be maintained by the Director of the Bioethics Graduate Program in consultation with the Bioethics Program Committee. (The Nursing Science core constitutes seven of these elective credits).

**Candidacy:** In order to be admitted to doctoral candidacy in the dual-title degree program, students must meet the Ph.D. candidacy requirements specified by Nursing; a single candidacy
examination will be administered that includes assessment of both Nursing and Bioethics. At least one member of the candidacy committee must come from the Bioethics program. Unless the Associate Dean for Graduate Education in the School of Nursing and the Director of the Bioethics Program agree to waive the requirement, this person should not be a member of the Nursing faculty.

Comprehensive Exam: The faculty member (or members) affiliated with the Bioethics Program will be responsible for administering a portion of the comprehensive exam that will require the student to demonstrate an understanding of various theoretical and methodological approaches to bioethics, and an ability to apply them to issues and problems (including, where appropriate, practical problems) in their nursing.

Dissertation and Dissertation Defense: A dissertation on a bioethics-related topic or with a substantial bioethics component is required of students in the dual-title Ph.D. program. The bioethics-related topic of the dissertation or the bioethics component will be approved by the student’s doctoral committee.

Student Aid
In addition to the fellowships, traineeships, graduate assistantships, and other forms of financial aid described in the Student Aid section of the Graduate Bulletin, the following awards typically have been available to graduate students in this program:

U.S. PUBLIC HEALTH SERVICE TRAINEESHIPS IN NURSING
full-time students in nursing; stipend may be available plus tuition. Apply to Associate Dean for Graduate Education, School of Nursing.

Courses
Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students but courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.
New Bulletin

Nursing (NURS)

Program Home Page

PAULA MILONE-NUZZO, Dean, College of Nursing

JUDITH E. HUPCEY, Associate Dean for Graduate Education

201 Health and Human Development East Building     863-245

Degrees Conferred:
Ph.D., D.N.P., M.S., M.S.N.  Ph.D. in Nursing and Bioethics (BIOET)

The Graduate Faculty
Kesha Baptiste-Roberts, Ph.D. (Johns Hopkins) Assistant Professor of Nursing
Raymonde A. Brown, Ph.D. (Maryland) Assistant Professor of Nursing; Associate Dean for Undergraduate Programs and Outreach, College of Nursing
Harleah G. Buck, Ph.D. (Southern Florida) Assistant Professor of Nursing
Margaret (Peg) Cushman, Ph.D. (UMass, Boston) Assistant Professor of Nursing
Christopher Engeland, Ph.D., (University of Western Ontario) Assistant Professor
Donna Fick, Ph.D. (California) Distinguished Professor of Nursing
Janet Fogg, Ph.D. (Villanova) Assistant Professor of Nursing; Professor in Charge, Professional Graduate Programs
Judith E. Hupcey, Ed.D. (Columbia) Professor of Nursing; Associate Dean for Graduate Education, College of Nursing
Kathaleen Johnson, D.N.P. (Robert Morris) Instructor in Nursing
Lisa A. Kitko, Ph.D. (Penn State) Assistant Professor of Nursing; Coordinator, Clinical Nurse Specialist Option
Ann M. Kolanowski, Ph.D. (New York) Professor of Nursing; Elouise Ross Eberly Professor of The College of Nursing
Susan J. Loeb, Ph.D. (Penn State) Associate Professor of Nursing
Kathleen G. Mastrian, Ph.D. (Kent State) Assistant Professor of Nursing
Paula Milone-Nuzzo, Ph.D. (Connecticut) Professor and Dean, College of Nursing
Janice L. Penrod, Ph.D. (Penn State) Professor of Nursing
Amy M. Sawyer, Ph.D. (Pennsylvania) Assistant Professor of Nursing
Carol A. Smith, D.S.N. (Alabama) Associate Professor of Nursing
Patricia Sweeney, Ph.D. (Penn State) Assistant Professor of Nursing; Director, Nurse Practitioner Program

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The Ph.D. program and the dual-title Ph.D. program in nursing and bioethics prepares nurse scientists to provide leadership in nursing education, practice and research. Individualized
curricula prepare nursing graduates to assume positions as faculty, researchers and leaders in educational, community, governmental, or institutional settings.

The D.N.P. degree program prepares nurse administrators and advanced practice nurses to assume leadership roles in practice settings in the community, governmental agencies, or healthcare institutions.

The M.S. degree program with a major in nursing prepares nurse scientists and clinical scholars who plan to complete a Ph.D. in nursing or dual-title Ph.D. in nursing and bioethics.

The M.S.N. degree in Nursing consists of a base program and six options. The options include: Clinical Nurse Specialist, Family Nurse Practitioner, Adult Gerontology Primary Care Nurse Practitioner, Adult Gerontology Acute Care Nurse Practitioner, Nurse Administrator, and Nurse Educator.

The M.S., M.S.N., and D.N.P. degree programs in Nursing are accredited by the Accreditation Commission for Education in Nursing and the Commission on Collegiate Nursing Education.

The Nurse Practitioner options are designed to help prepare the professional nurse to function in an expanded nursing role providing direct care to specific groups of clients in a variety of health care settings. Since that practice is inherently interdisciplinary in nature, advanced knowledge and research from nursing is combined with knowledge from science, medicine, and related disciplines. The Nurse Practitioner may also function in supervisory, consultative, education, and research roles.

The Nurse Administrator option enables the student to acquire advanced knowledge of organizational leadership, health policy, and evidence-based health care delivery. The program is designed to prepare students for leadership and administrative roles in a variety of health care settings.

The Nurse Educator option enables the student to acquire advanced knowledge of evidence-based teaching and learning principles, curriculum development, and evaluative techniques. The program is designed to prepare students for educator roles in a variety of academic and health care settings.

The Clinical Nurse Specialist option prepares advanced practice nurses in Adult Gerontology to plan, implement, and evaluate care in a variety of settings. They function in direct care, supervisory, consultative, education, and research roles serving individuals, families, and communities.

**Admission Requirements for M.S., M.S.N., D.N.P. and Ph.D. Programs**

1. For admission to the Nursing program, an applicant must hold either (1) a bachelor's degree in Nursing from a U.S. regionally accredited institution or (2) a postsecondary degree in Nursing that is equivalent to a U.S. baccalaureate degree earned from an officially recognized degree-granting international institution. Students entering the doctoral programs via the traditional post-master’s route must have earned a master’s degree with a major in nursing from a program accredited by a national accrediting
agency for nursing. Well-qualified Ph.D. applicants with a baccalaureate degree in nursing and master's degree in a related discipline (e.g., public health) will be evaluated individually to assess the need for prerequisite master’s-level course work in nursing for doctoral program admission.

2. Applicants must submit transcripts of all previous course work from institutions of higher learning. For M.S.N. applicants, a cumulative grade-point average of 3.3 (on a 4.0 scale) for the baccalaureate degree is expected with a B or better in all science and nursing courses. For M.S. applicants, a cumulative grade-point average of 3.5 (on a 4.0 scale) for the baccalaureate degree is expected with a B or better in all science and nursing courses. College chemistry and statistics are also required (chemistry is not required for the nurse administrator option). B.S. to D.N.P. applicants are expected to have a cumulative undergraduate grade-point average of 3.5 (on a 4.0 scale). For Masters to Ph.D. or D.N.P. applicants, a cumulative grade-point average of 3.5 (on a 4.0 scale) for master's and subsequent course work is expected.

3. Two letters of reference are required for the M.S.N. degree program and three letters of reference are required for the M.S., D.N.P., and Ph.D. degree programs. The letters should be solicited from professional colleagues and faculty who can attest to the applicant's ability.

4. All applicants must submit a statement of purpose. In addition, M.S., D.N.P., and Ph.D. degree applicants must also submit a published or unpublished scientific paper, thesis, or other scholarly writing sample and a complete curriculum vitae.

5. GRE scores are required for admission to the M.S. and Ph.D. programs. GRE scores are not required for the M.S.N. and D.N.P. applicants, but if the scores are submitted to Penn State they will be reviewed as part of the application.

6. The language of instruction at Penn State is English. All international applicants must take and submit scores for the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), with the exceptions noted below. The minimum acceptable score for the TOEFL is 580 for the paper-based test, or a total score of 100 with a 25 on the speaking section for the Internet-based test (iBT). The minimum composite score for the IELTS is 7. International applicants are exempt from the TOEFL/IELTS requirements who have received a baccalaureate or a graduate degree from a college/university/institution in any of the following: Australia, Belize, British Caribbean and British West Indies, Canada (except Quebec), England, Guyana, Republic of Ireland, Liberia, New Zealand, Northern Ireland, Scotland, the United States, and Wales.

7. Applicants to the M.S.N. options and D.N.P. degree offered online via the World Campus must hold a current license to practice professional nursing in at least one U.S. state. All other applicants to the M.S. and M.S.N. degree programs must hold a current Pennsylvania license to practice professional nursing. Applicants to the Ph.D. degree program must be licensed to practice professional nursing in at least one state or in a foreign country.

8. Applicants to the Adult Gerontology Acute Care Nurse Practitioner Option are required to have two years of acute care hospital experience.

9. Applicants to the M.S.N. degree program are encouraged to discuss program options with the faculty; however, an interview is not required. Doctoral (B.S. - Ph.D., B.S. - D.N.P., D.N.P., and Ph.D.) applicants will be contacted by the College of Nursing to schedule a required interview (either in person or via internet-based video conferencing).
**M.S. and M.S.N. Degree Requirements**

A core of courses including nursing issues, theory, and research is required of all master's students. Candidates in M.S. degree program (M.S. - Ph.D.) are required to complete a minimum of 30 credits to be awarded an M.S. degree. The Clinical Nurse Specialist option must earn a minimum of 41-42 credits, Family Nurse Practitioner option, the requirement is a minimum of 45 credits, Adult Gerontology Primary Care Nurse Practitioner, is a minimum of 41 credits, Adult Gerontology Acute Care Nurse Practitioner, is a minimum of 43 credits, Nurse Administrator is a minimum of 37 credits, and Nurse Educator is a minimum of 37 credits. Students in M.S.N. degree program are required to complete a capstone project, which demonstrates the application of theory and research to a clinical problem based on review of literature and research utilization for that problem. Students in the M.S. degree program may choose to do either a thesis for 6 credits or develop an application for a pre-doctoral fellowship.

**D.N.P. Degree Requirements**

Students may enter the program directly from a B.S. in nursing or following completion of a Master's degree in nursing. For the B.S. in nursing to the D.N.P. for nurse administrators, a core of master’s courses including nursing issues, theory, and research is required. A minimum of 61 credits, 1000 hours of practicum time, and a capstone project is required. The master’s in nursing to D.N.P. program requires a minimum of 30 post-masters credits completed at Penn State. The curriculum is individualized based on previous coursework and number of practicum hours completed during the master’s program. A maximum of 600 practicum hours from the previous master's program will be accepted to fulfill to 1000 hours of required practicum hours.

For both entry options, students are required to participate in 3 intensives offered at the University Park or Hershey Medical Center campus. For full-time students, the first intensive is August of semester I for M.S.N. to D.N.P. and semester III for B.S. to D.N.P. students. Intensive 2 is the beginning of the subsequent semester, intensive 3 is at the end of semester II for M.S.N. to D.N.P. and semester IV for B.S. to D.N.P. students. In addition to coursework, all students are required to complete a series of three benchmarks, Candidacy; Comprehensives; and a Final Oral Presentation.

**Candidacy Examination:** All students must satisfactorily complete the candidacy examination, which is designed to evaluate the student’s past performance and potential for successfully completing the program. Candidacy typically occurs during the 2nd intensive, which follows completion of one semester of full-time study for the M.S.N. to D.N.P. student and after three semesters of full-time study for the B.S. to D.N.P. student. Students who fail the examination on the first attempt may repeat it once.

**D.N.P. Committee Composition:** The doctoral committee will consist of the student’s academic adviser, the Capstone course (NURS 835) instructor, and a third member of the graduate faculty, all from the graduate program in Nursing. The academic adviser will be the chair of the committee.

**Comprehensives:** Comprehensives mark the student’s progression into their capstone project. This occurs during the 3rd intensive, when students present their capstone project proposal. Comprehensives need to be successfully completed prior to the submission of the proposal for human subjects’ review or carrying out the project (if it does not require a review). Students
who fail the examination on the first attempt may repeat it once.

**Final Oral Presentation:** Upon completion of the project, the Final Oral Presentation is scheduled. Students are required to present the project for approval by their doctoral committee. The Associate Dean for Graduate Education will sign off on the final paper, following completion of the paper during NURS 835 and the student’s passing of the oral presentation. Students who fail the examination on the first attempt may repeat it once. The student’s final paper will be made publically available through ScholarSphere: https://scholarsphere.psu.edu/.

**Ph.D. Degree Requirements**

Students may enter the program directly from a B.S. in nursing (receiving a M.S. degree en route to the Ph.D.) or following completion of a Master's degree (nursing or non-nursing). A dual-title Ph.D. degree in nursing and bioethics and a minor in nursing are also available.

Students entering with a M.S. degree in nursing will complete a minimum of 41-50 credits. In addition to coursework, all students are required to complete a series of examinations, Candidacy; Comprehensives (written and oral components); Dissertation Proposal Defense; and Final Oral Examination. Students also are required to fulfill a residency requirement. This entails being registered as a full-time student (9 credits minimum) engaged in academic work over the courses of two semesters within a twelve-month period (summer sessions are not included).

**Candidacy Examination:** All students must satisfactorily complete the candidacy examination, which is designed to confirm the student’s mastery of basic nursing theory and research methods. For students entering the doctoral program with a master’s degree, the candidacy examination must be taken at the end of the first year of full-time study or the equivalent. Students who fail the examination on the first attempt may repeat it once. Students who fail the examination the second time are terminated from the program.

**Comprehensive Examination:** The comprehensive examination is designed to test the student’s mastery of and ability to synthesize and integrate the theoretical basis for nursing science, advanced research methods and the chosen specialty area. This examination is taken upon completion of all course work. Students who fail the examination on the first attempt may repeat it once. Students who fail the examination the second time are terminated from the program.

**English Competency:** All students will be assessed for deficiencies in reading, writing and speaking of English during the core nursing courses prior to the candidacy examination; should remedial work be necessary, the student will be directed to the appropriate sources. International students will be advised that the passage of the minimal TOEFL or IELTS requirement does not demonstrate the level of competence expected of a Ph.D. in Nursing.

**Communication and Language Requirement:** A foreign language will not be required. However, all students are required to be computer literate in word processing and use of statistical packages, as determined by their doctoral committee, and will be assessed for communication skills during core nursing courses.

**Dissertation:** Each student is required to conduct an original and independent research project,
which, adds to nursing’s body of knowledge, and to communicate the research report in a written dissertation. A written dissertation proposal is required and must be approved at a proposal hearing by a majority vote of the student’s doctoral committee. A majority vote is also required for approval of the completed written dissertation at the final oral defense.

**Dual-Title Ph.D. in Bioethics Degree Requirements**

Nursing Ph.D. students may pursue additional training in bioethics through the dual-title Ph.D. program in Bioethics. To qualify for the dual-title degree, students must satisfy the requirements of the Nursing Ph.D. program. In addition, they must satisfy the requirements described below, as established by the Bioethics program committee. Within this framework, final course selection is determined by the student, their Nursing adviser and their Bioethics program adviser.

**Additional Coursework:** The dual-title Ph.D. in Nursing and Bioethics requires a minimum of 2 credits of coursework beyond the requirements for the Ph.D. in Nursing (16 credits of the 18 Bioethics credits are part of the current degree requirements in Nursing), as follows:

- Seven required credits (BIOET 501, BIOET 502, and BIOET 590), plus at least three additional BIOET credits at the 500 level. These credits can be applied to the 9 credits of specialty coursework for the Nursing PhD.
- Eight additional credits from a list of approved electives at the 400 or 500 level, at least two of which must be at the 500 level (many of the available electives that students may wish to take are 3-credit courses, so 9 additional credits may be a more typical number for most students). The list of elective courses will be maintained by the Director of the Bioethics Graduate Program in consultation with the Bioethics Program Committee. (The Nursing Science core constitutes seven of these elective credits).

**Candidacy:** In order to be admitted to doctoral candidacy in the dual-title degree program, students must meet the Ph.D. candidacy requirements specified by Nursing; a single candidacy examination will be administered that includes assessment of both Nursing and Bioethics. At least one member of the candidacy committee must come from the Bioethics program. Unless the Associate Dean for Graduate Education in the College of Nursing and the Director of the Bioethics Program agree to waive the requirement, this person should not be a member of the Nursing faculty.

**Comprehensive Exam:** The faculty member (or members) affiliated with the Bioethics Program will be responsible for administering a portion of the comprehensive exam that will require the student to demonstrate an understanding of various theoretical and methodological approaches to bioethics, and an ability to apply them to issues and problems (including, where appropriate, practical problems) in their nursing.

**Dissertation and Dissertation Defense:** A dissertation on a bioethics-related topic or with a substantial bioethics component is required of students in the dual-title Ph.D. program. The bioethics-related topic of the dissertation or the bioethics component will be approved by the student’s committee.

**Student Aid**

In addition to the fellowships, traineeships, graduate assistantships, and other forms of financial aid described in the STUDENT AID section of the Graduate Bulletin, the following awards
typically have been available to graduate students in this program:

**U.S. PUBLIC HEALTH SERVICE TRAINEESHIPS IN NURSING**

Open to selected registered full-time students in nursing; stipend may be available plus tuition. Apply to Associate Dean for Graduate Education, College of Nursing.

**Courses**

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students but courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.
Appendix I

Letter of Support for STAT Courses
From: MICHELLE ELIZABETH CORBY <mec18@psu.edu>
Subject: Fwd: STAT courses requested for use in DNP
Date: September 17, 2013 9:30:36 AM EDT
To: Judith Hupcey <jhupcey@psu.edu>, Janet Fogg <jef13@psu.edu>
Cc: Traci Davis Piazza <tdp10@psu.edu>

From: jlrosenberger@gmail.com [mailto:jlrosenberger@gmail.com] On Behalf Of James L Rosenberger  Sent: Monday, September 16, 2013 3:19 PM  To: Traci Davis Piazza  Cc: David Hunter  Subject: Re: FW: STAT courses requested for use in DNP

Traci,

I think it is very appropriate to include some Statistics classes in the D.N.P. program in Nursing. However, is this proposal for online courses or resident courses? If resident, I will also need to have our department head respond.

If this request if for online courses only, my comments are following:

Since these are electives, I have no objection to including them in their proposal.

Regarding STAT 500 Applied Statistics and STAT 897A Intro to Applied Statistics both are appropriate for inclusion, but either/or not both by the same student, since STAT 897A (Pending approval Stat 800), is a similar course to Stat 500, and we would not recommend a student take both courses.

Regarding STAT 507 Epidemiological Research Methods (3 credits) This is a very appropriate course for students after Stat 500.

I would similarly recommend Stat 509 Design and Analysis of Clinical Trials (3 credits) be included as an elective.

Regarding STAT 897D: Applied Data Mining and Statistical Learning (3 credits) This is an acceptable course, but I recommend that STAT 501 be added to the list, since STAT 501 Regression Methods, will likely be a prerequisite to STAT 897D when it becomes a permanent course.

I'll be happy to provide more information on this if the proposing department would like to discuss this further. I am copying our department head also, in case he would like to add additional comments.

Thanks, Jim

James L Rosenberger, Professor of Statistics
Department of Statistics
Penn State University
Park, PA 16802-2111 USA  Tel: (814) 865-1340  Fax: (814) 863-7114
Appendix II

*Letters of Support for the D.N.P. degree*

1. Kathryn Drager, Interim Associate Dean, CHHD
2. Michael Verderame, Associate Dean, COM
3. Terry Wolpaw, Vice Dean for Academic Affairs, COM
4. David Sylvia, DAA for Academic Programs, World Campus
5. World Campus Faculty Support
Judy,
I have read through your proposal and am happy to support your efforts in proposing this new Doctor of Nursing Practice degree. The addition of this degree option will not adversely impact any of the programs in the College of Health and Human Development.

Best,
Kathy

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Kathryn Drager, PhD, CCC-SLP
Interim Associate Dean for Research and Graduate Education
College of Health and Human Development
The Pennsylvania State University
201 Henderson Building
University Park, PA 16802

(p) 814-863-2426 | (f) 814-865-3282
http://www.hhdev.psu.edu/research | http://aac.psu.edu/
2. Michael Verderame, Associate Dean, COM

From: "Verderame, Michael" <mverderame@hmc.psu.edu>
Subject: Re: SON new degree proposal
Date: September 23, 2013 9:39:25 AM EDT
To: Judith Hupcey <jhupcey@psu.edu>
Cc: Kathy Drager <kdd5@psu.edu>

Judy

Your proposal to establish DNP is an important step for the (soon to be!) College
of Nursing. It does not conflict with any degrees or programs offered by
Graduate Education at the College of Medicine.

I do suggest that if you have not already done so you consult with Dr Terry
Wolpaw, Vice Dean for Educational Affairs, who oversees all clinical training
programs at the CoM to be sure there is no overlap there.

Best wishes,

Michael
3. Terry Wolpaw, Vice Dean for Academic Affairs, COM

November 1, 2013

Dear Dr. Hupcey,

I have reviewed the proposal for the DNP program in the College of Nursing and I am in support of the delivery of this program. There is no overlap with the academic offerings in the College of Medicine. The DNP graduates will make an important contribution to improving the quality of care in our complex health care delivery system. Thank you for the opportunity to provide this letter of support.

Sincerely,

Terry Wolpaw, MD, MPH
Vice Dean for Educational Affairs
MEMO

To:    Judith Hupcey, Associate Dean
        College of Nursing

Fr:    David Sylvia, DAA for Graduate Programs

Da:    September, 23 2013

Re:    Proposal for Doctorate in Nursing Practice

We are pleased to support the proposal to offer the Doctorate of Nursing Practice off-campus and online to students at a distance via the World Campus. The World Campus is prepared to deliver this degree in partnership with the College of Nursing, at Revenue Distribution Category (RDC) 1, as per the University Task Force on Gross Revenue sharing Models for the World Campus: Final Report, January 31, 2011.

If during the review process for the proposal by the Graduate School there are questions or concerns to which the World Campus can help respond, please feel free to contact me.

Thank you.

cc: Paula Milone-Nuzzo Dean, College of Nursing
    Janet Fogg, Assistant Professor, College of Nursing
    Michelle Corby, Program Manager, World Campus
5. World Campus Faculty Support

MEMO OF AGREEMENT

To: Paula Milone-Nuzzo, Dean, School of Nursing

Fr: Wayne Smutz, Associate Vice President for Academic Outreach, Executive Director, World Campus

Da: February 6, 2013

Sub: Funding for Two Faculty to Develop and Launch the Doctorate of Nursing Practice

The purpose of this memo is to formalize our agreement to provide funding to hire two doctoral-prepared faculty to develop and launch the Doctorate in Nursing Practice (DNP) program, which will be offered via the World Campus.

The World Campus will contribute 100% of salary plus fringe for three years (FY 2013-14, 2014-15, and 2015-16) to fund two fixed-term I appointments in the School of Nursing. One DNP faculty member will be hired in Spring 2013 to oversee the development of the program and to begin the process of curriculum development. The second faculty member will be hired at the discretion of the dean in time to begin authorship of courses.

Expected outcomes include (i) timely submission of a program proposal and related course proposals to the Graduate School, (ii) assumption of lead faculty duties by the primary hire, and (iii) authorship/instruction of an equivalent number of courses to attain a full-time teaching load. Because the program will go through rapid evolution over the span of this agreement there should be an annual review of the distribution of duties. The tentative program launch date is Spring 2014.

The World Campus is pleased to continue its partnership with the School of Nursing.

cc:
Judith Hupcey, Associate Dean of Nursing
Madeline Matern, Program Coordinator for Outreach, School of Nursing
Mary Andrew, Financial Officer, Health and Human Development
Alana Loft, Manager of Budgeting and Financial Operations, Penn State World Campus
David Sylvia, DAA for Graduate Programs, Penn State World Campus

An Equal Opportunity University
GRADUATE COUNCIL
PROGRAM, OPTION, OR MINOR PROPOSAL FORM

Submit 1 original, signed Graduate Council proposal form and 7 hardcopies of the graduate program proposal document, with a copy of the signed proposal form attached to each proposal copy, to the Curriculum Coordinator, University Faculty Senate, 101 Kern Graduate Building. The proposals will be transmitted to the Dean of the Graduate School for entry into the Graduate Council curricular review process; for more information about the process, see the Overview of the Graduate Council Curricular Review Process.

See the Program Proposal Procedures for guidance in preparing a graduate program proposal. If you have questions regarding the preparation of a graduate program proposal or how to complete this form, contact the Office of the Dean of the Graduate School.

College/School: Penn State Erie, The Behrend College
Department or Instructional Area: School of Business

NEW GRADUATE PROGRAM, OPTION, OR MINOR: Add 

Designation of new graduate program: Accounting
Classification of Instructional Programs (CIP) Code:

Designation of new graduate option:
Designation of new graduate minor:

Indicate effective semester (cannot be earlier than the first semester following approval): Fall 2014

EXISTING GRADUATE PROGRAM, OPTION, OR MINOR: Change _____ Drop _____

Current designation of graduate program:
Current designation of graduate option:
Current designation of graduate minor:

New designation of existing graduate program (if changing):
New designation of existing graduate option (if changing):
New designation of existing graduate minor (if changing):

Indicate effective semester (cannot be earlier than the first semester following approval):

SUBMITTED BY GRADUATE PROGRAM HEAD:
Ashutosh Deshmukh
Printed name
Signature
Date: 11/5/2013

NOTED BY COLLEGE/SCHOOL REPRESENTATIVE TO GRADUATE COUNCIL SUBCOMMITTEE ON NEW AND REVISED PROGRAMS AND COURSES:
William Johnson
Printed name
Signature
Date: 11/6/2013

APPROVED BY COLLEGE/SCHOOL DEAN/CHANCELLOR (OR DESIGNEE):
John Magenau
Printed name
Signature
Date: 11/15/13
RECOMMENDED BY CHAIR, GRADUATE COUNCIL SUBCOMMITTEE ON NEW AND REVISED PROGRAMS AND COURSES:

C. Andrew Cole
Printed name
Signature
Date: 3/10/2014

RECOMMENDED BY CHAIR, GRADUATE COUNCIL COMMITTEE ON PROGRAMS AND COURSES:

Christina M. Grozinger
Printed name
Signature
Date: 3/10/2014

NOTED BY DEAN OF THE GRADUATE SCHOOL:

Regina Vasilatos-Younken
Printed name
Signature
Date: 3/11/2014
Proposal to Create a New Graduate Program in Accounting, offering the Master of Professional Accounting (MPAcc) Degree
Proposal to Create a New Graduate Program in Accounting, offering the Master of Professional Accounting (MPAcc) Degree

The proposed graduate program in Accounting, offering the Master of Professional Accounting (MPAcc) degree, will be offered at the Black School of Business (BSOB), Penn State Erie, The Behrend College. The MPAcc degree program will equip the students for the increasing legal and financial complexities faced by the accounting profession. The MPAcc degree program will provide students with 30 credit hours of education, and when added to their 120 undergraduate credits previously earned, these students will have also satisfied the educational requirements needed for becoming a Certified Public Accountant (CPA) in the state of Pennsylvania. In addition, most state boards of accountancy require 150 credits of education to sit for the CPA examination. This proposed degree will help satisfy the CPA exam educational requirements of most of Pennsylvania’s neighboring states as well.

The American Institute of Certified Public Accountants recommends 150 semester hours of education to become licensed as a Certified Public Accountant and most states, including Pennsylvania, have accepted the recommendation and mandated the education. A master’s degree provides a good balance of general, business, and accounting education. The proposed degree program is intended to serve the Erie region. The quality of Behrend’s educational programs, accreditation of the Black School of Business, and the Penn State brand are well-known to the region. There is no other graduate program in accounting in the region, in spite of three other major universities. Students who graduate from those institutions’ accounting baccalaureate degree programs also need the additional education, and the Behrend program will be an attractive option for the students in the region. This program will also draw students from the tri-state region.

The Master of Professional Accounting degree program is aimed at a specific niche – students who plan to take the additional education for the purpose of becoming a Certified Public Accountant. The Black School does not have any graduate program that competes in the area. The iMBA and resident MBA degree programs are aimed at working professionals and students desiring a general business degree. The MBA degree program is also not a substitute for the MPAcc degree program since the latter is focused on the discipline of accounting. The Smeal College of Business offers a resident MAcc degree program in Accounting; which admits students from Pennsylvania and throughout the nation. However, this program cannot serve the BSOB students who wish to pursue MPAcc degree at Behrend. Additionally, an online MPAcc program is proposed by Penn State Harrisburg, Penn State Erie, Penn State Great Valley, and the Smeal College of Business. This program is aimed at students who do not have access to the resident program, students who have not majored in accounting, and nontraditional students.

The desired effective date of the program is Fall 2014.
Proposal to Create a New Graduate Program in Accounting, offering the Master of Professional Accounting (MPAcc) Degree

Program Summary

The proposed Master of Professional Accounting (MPAcc) degree program in Accounting will require 30 credit hours beyond the bachelor's degree and will take one year to complete. This program will equip the students for the increasing legal and financial complexities faced by the accounting profession. This degree will satisfy the requirements for taking the Certified Public Accountant (CPA) examination and becoming a CPA through the Pennsylvania State Board of Accountancy as well as most of the State Boards of the neighboring states.

Effective Date

Fall 2014
Proposal to Create a New Graduate Program in Accounting, offering the Master of Professional Accounting (MPAcc) Degree

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Proposal to Create a New Graduate Program in Accounting, offering the Master of Professional Accounting (MPAcc) Degree

A. Program Objectives and Justification Statement

1. Program Objectives

The American Institute of Certified Public Accountants (AICPA) recommends 150 semester hours of education to become licensed as a Certified Public Accountant and most states, including Pennsylvania, have accepted the recommendation and mandated the education. The AICPA does not recommend a single standard way of getting this education but acknowledges various pathways. However, given the varied educational requirements of different states, a master’s degree in accounting has emerged as an excellent way to fulfill the education requirement. A master’s degree provides a good balance of general, business, and accounting education as envisioned by the AICPA.

The Behrend College currently offers a baccalaureate accounting degree that requires 120 credit hours. The proposed master’s degree program in Accounting will require 30 credit hours beyond the bachelor’s degree and will take one year to complete. The program is consistent with the teaching and research mission of the Behrend College. The accounting and business skills that form the core of the program will prepare the students for increasing legal and financial complexities faced by accountants. This program will also prepare the students for the CPA examination; and provide them with the required education to become licensed CPAs. While the Pennsylvania State Board of Accountancy does not require individuals to have 150 credits to sit for the CPA exam, most of the State Boards of our neighboring states do. However, the state of Pennsylvania does require 150 credits of education to become licensed as a CPA, and this degree will satisfy this requirement.

2. Needs Assessment

The 150 semester hour requirement has become mandatory to become a licensed CPA in Pennsylvania and in most other states. As a result, CPA firms will prefer to recruit students who have completed the requisite education. Behrend students may not be competitive in the employment market if they do not have the opportunity to complete a master’s degree. Accounting is one of the largest majors in the Behrend College; many of our students go on to complete their master’s degrees in Pittsburgh and elsewhere. A large number of our existing students also double major in finance or management information systems (MIS). Our graduating students have shown great interest in a home-grown graduate accounting program.

The proposed degree is also intended to serve the Erie region. The quality of a Behrend education, accreditation of the Black School of Business, and the Penn State brand are well-known in the region. There is no other graduate program in accounting in the region, in spite of three other major universities. Students who graduate from other institutions’ accounting baccalaureate degree programs will also need the additional education, and the Behrend program will be an attractive option for the students in the region. This program will also offer an option for students from the tri-state region. Erie is home to numerous regional CPA firms and has a strong manufacturing base, which draws people from all over the world. Apart from students, the graduate accounting program will be attractive to people wishing to switch careers.
3. Ability to Offer a Quality Program

Black School of Business in the Behrend College is accredited by AACSB and accreditation was reaffirmed in 2013. Black School has deep experience in offering graduate education. We have offered a resident MBA for over two decades; Black School is also an academic and administrative home of the iMBA and MPM programs. We are also participating in the proposed online MPAcc degree program in Accounting jointly offered by Penn State Harrisburg, Penn State Erie, Penn State Great Valley, and the Smeal College of Business. However, the proposed online MPAcc degree program is aimed at students who do not have access to the resident program, students who have not majored in accounting, and nontraditional students. The Black School of Business also has thriving accounting and finance undergraduate majors that will feed students to the graduate program. Black School also has an endowment of $20 million and excellent infrastructure to house such a program.

The accounting program in the Black School currently has adequate resources to offer an MPAcc program. The current instructional capacity is sufficient to support an enrollment of up to 25 students in the MPAcc program. A faculty member, who is a member of the Graduate Faculty, has agreed to serve as Director of the program and the current administrative resources will be able to offer support for the program.

The Director of the Black School has identified the MPAcc program as a strategic priority and promises to deploy additional resources for hiring new graduate faculty members and administrative support, if required.

4. Justification of Degree Title

The title of the degree is "Master of Professional Accounting." This degree is a professional degree that emphasizes practical application of knowledge and has a practitioner orientation. The title of the degree is fairly standard in the field, the other common titles being Master of Accounting, Master of Professional Accountancy, and Master of Science in Accounting. The University of Texas at Austin, the University of Washington, the University of Sydney, among many others, award the Master of Professional Accounting degree.

5. Anticipated Size of Program and Impact on Course Offerings

The initial enrollment for the program will be limited to a maximum of 25 students. The program is designed primarily to cater to the undergraduate students in the Behrend College. There are no plans to increase the enrollment in the near future. There are excellent chances that the program will grow. There are a number of colleges and universities in the area that graduate undergraduate accounting majors and we can also tap into student populations in the neighboring region. If the demand for the program goes up then eventually we will expand enrollment up to 50 students. However, there are no plans to expand the program beyond 50 students and we expect up to 25 students to be steady state in the near future.

The program mostly uses existing undergraduate and graduate accounting courses. The Black School of Business will offer 18 extra credits of courses, that is, six additional 3-credit courses, all of which, except for ACCT 550, are already on the University's master course list (i.e., approved by Graduate Council). ACCT 550 has been developed by Penn State Harrisburg and BSOB will have permission to use this
course in the proposed MPAcc degree program. The primary course required to fulfill this requirement is B ADM 526, which is already offered by BSOB.

6. Impact on Existing Programs

The Master of Professional Accounting program in Accounting is aimed at a specific niche – students who plan to take additional education for the purposes of taking the CPA examination and becoming licensed as CPAs. The Black School does not have any graduate program that competes in the area. The iMBA and resident MBA degree programs in Business Administration are aimed at working professionals and students desiring a general business degree. The resident MBA degree program may lose a few students since some accounting graduates use this program for fulfilling the 150 hour requirements, primarily because of lack of options. The MBA degree program in Business Administration is also not a substitute for the MPAcc degree program in Accounting, given the focus of the degree on the discipline of accounting. The MPM degree program in Project Management is offered online and aimed at working professionals who desire to specialize in the project management area. The proposed program may also draw a few students who are currently double majoring in two undergraduate programs – primarily accounting with finance. We do not expect any program to be significantly adversely affected by the MPAcc program.

The Smeal College of Business offers a resident MAcc degree program in Accounting; which admits students from Pennsylvania and throughout the nation. However, this program cannot serve the BSOB students who wish to pursue MPAcc degree at Behrend. The proposed intercollege online MPAcc degree program in Accounting is aimed at working students from across the state/country. The internal surveys done at BSOB indicate that a majority of our current students would like to enroll in a residential program at BSOB and there was a considerable interest among junior and senior level students. There is a slight possibility that the markets for these programs may overlap to a certain extent. However, we do not expect these programs to have a major impact on each other.

7. Sample Program of Study and Scheduling

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>B LAW 444: Advanced UCC and Commercial Transactions</td>
</tr>
<tr>
<td>3</td>
<td>ACCTG 806: Taxes and Business Planning or ACCT 510: Business Tax Planning Theory &amp; Practice</td>
</tr>
<tr>
<td>3</td>
<td>ACCTG 873: Advanced Topics in Financial Reporting or ACCT 573: Financial Reporting 2</td>
</tr>
<tr>
<td>3</td>
<td>ACCTG 881: Financial Statement Analysis or ACCT 561: Financial Statement Analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credits</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ACCT 504: Auditing Theory and Practice</td>
</tr>
<tr>
<td>3</td>
<td>ACCT 545: Strategic Cost Management</td>
</tr>
<tr>
<td>3</td>
<td>B ADM 526: Leadership and Ethics or ACCT 550: Professional Responsibilities and Ethics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer</th>
<th></th>
</tr>
</thead>
</table>
ACCTG 803: Forensic Accounting and Litigation Support
3 credits of elective (Approved 400-, 500-, or 800-level course) or 3 credits of Internship (ACCTG 595)
Total Credits

B. Graduate Program Bulletin Listing

Accounting

Black School of Business, Penn State Erie - The Behrend College

Balaji Rajagopalan, Director of Black School of Business
Burke Center, Jordan Rd.
Erie, PA 16563

Degree Conferred: Master of Professional Accounting

The Graduate Faculty

Charles Brown, Ph.D. (Kent State) Associate Professor of Accounting
Michael Brown, Ph.D. (Penn State), Professor of Management
Ashutosh Deshmukh, Ph.D. (Memphis) Professor of Accounting
David Doran, Ph.D. (Pittsburgh) Associate Professor of Accounting
Greg Filbeck, Ph.D. (Kentucky), Black Professor of Insurance and Risk Management
Xin Zhao, Ph.D. (Memphis), Associate Professor of Finance

The proposed Master of Professional Accounting (MPAcc) degree program in Accounting will require 30 credit hours beyond the bachelor's degree and will take one year to complete. This program will equip the students for the increasing legal and financial complexities faced by the accounting profession. This degree will also satisfy the requirements for taking the Certified Public Accountant (CPA) examination and becoming a CPA through the Pennsylvania State Board of Accountancy as well as most of the State Boards of the neighboring states.

Admission Requirements

The general Graduate Council requirements for admission to the Graduate School listed in the General Information section of the Graduate Bulletin apply to all students applying for the program. The language of instruction at Penn State is English. All international applicants must take and submit scores for the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), with the exceptions noted below. The minimum acceptable score for the TOEFL is 550 for the paper-based test, or a total score of 80 with a 19 on the speaking section for the internet-based test (iBT). Applicants with iBT speaking scores between 15 and 18 may be considered for provisional admission, which requires completion of specified remedial English courses ESL 114G (American Oral English for Academic Purposes) and/or ESL 116G (ESL/Composition for Academic Disciplines) and attainment of a grade of B or higher. The minimum acceptable composite score for the IELTS is 6.5.
International applicants are exempt from the TOEFL/IELTS requirement who have received a baccalaureate or a graduate degree from a college/university/institution in any of the following: Australia, Belize, British Caribbean and British West Indies, Canada (except Quebec), England, Guyana, Republic of Ireland, Liberia, New Zealand, Northern Ireland, Scotland, the United States, and Wales.

Additionally, the following requirements also apply.

Applicants must hold either (1) a baccalaureate degree from a regionally accredited U.S. institution or (2) a tertiary (postsecondary) degree that is deemed comparable to a four-year bachelor's degree from a regionally accredited U.S. institution. This degree must be from an officially recognized degree-granting institution in the country in which it operates. Applicants should have an undergraduate degree in business and the course-work should be substantially similar to the Penn State Erie undergraduate degree in business. If the degree is in business but not in accounting then applicants should have the following courses or their equivalents completed - ACCTG 211, ACCTG 310, ACCTG 340, ACCTG 371, ACCTG 403, and ACCTG 472, with B or better in every course. Applicants should have a minimum 2.8 GPA (on a 4.0 scale) in the junior and senior years and 3.0 GPA (on a 4.0 scale) in the accounting courses. Applicants are also required to take Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) and show GMAT (GMAT equivalent of GRE) scores of at least 400.

Applicants should submit the following documents,

1. Online Graduate School application including application fee
2. Statement of intent
3. Official transcripts for all completed undergraduate and graduate coursework
   (International applicants must submit official or attested university records, with certified translations if the records are not in English. Notarized copies are not sufficient.)
4. Official GMAT scores reported directly to Penn State Erie-The Behrend College
5. TOEFL or IELTS scores, if applicable

Degree Requirements

A minimum of 30 credit hours of instruction is required for the degree that must be acquired in 400-, 500-, or 800-level courses. At least 21 of the 30 credits must be 500 and 800 level courses, at least 9 credits (of the 21 credits) must be at the 500 level, and the remaining 9 credits must be at 400, 500, or 800 level.

The following courses need to be completed for a total of 30 hours of instruction.

<table>
<thead>
<tr>
<th>Core (24 credits)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>B LAW 444: Advanced UCC and Commercial Transactions</td>
<td>3</td>
</tr>
<tr>
<td>ACCTG 806: Taxes and Business Planning or ACCT 510: Business Tax Planning Theory &amp; Practice</td>
<td>3</td>
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<td>ACCTG 873: Advanced Topics in Financial Reporting or ACCT 573: Financial Reporting 2</td>
<td>3</td>
</tr>
<tr>
<td>ACCTG 881: Financial Statement Analysis or ACCT 561: Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 504: Auditing Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 545: Strategic Cost Management</td>
<td>3</td>
</tr>
<tr>
<td>B ADM 526: Leadership and Ethics or ACCT 550: Professional Responsibilities and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives (3 credits)**

3 credits of elective (Approved 400-, 500-, or 800-level course) or 3 credits of Internship (ACCTG 595) | 3

**Culminating Experience (3 credits)**

ACCTG 803: Forensic Accounting and Litigation Support | 3

Total Credits | 30

---

C. New Courses to be established

The only new course required is ACCT 550, which has been developed by Penn State Harrisburg and BSOB will have permission to use this course in the proposed MPAcc degree program. The primary course required to fulfill this requirement is B ADM 526, which is already offered by BSOB.

D. Culminating activity

The capstone course for the program will be ACCTG 803 – Forensic Accounting and Litigation Support. A comprehensive project that integrates material from different courses from the curriculum such as taxes, financial reporting, auditing, cost accounting, and ethics, among other skills, will be required to be completed. This project may involve a written report, oral presentations, and team work.

E. Accreditation and Certification

This program is designed to satisfy the educational requirements in the state of Pennsylvania. Students can also satisfy educational requirements in most of the neighboring states by using appropriate electives.

F. Resources

We do have adequate faculty resources for enrollment of up to 25 students. An additional staff member may be required to handle the administrative requirements of the program. If the program expands, revenues from the program will be used to fund an additional Graduate Faculty line as needed.
Appendix A

Comparison of Smeal Master of Accounting to the proposed Behrend MPAcc degree

The following table compares the courses in the Smeal Master of Accounting with the proposed Master of Professional Accounting at Behrend. Five courses are alike and the other five differ, which are explained in the footnotes.

<table>
<thead>
<tr>
<th>Smeal</th>
<th>Behrend</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCTG 803: Forensic Accounting and Litigation Support</td>
<td>ACCTG 803: Forensic Accounting and Litigation Support</td>
<td>Same</td>
</tr>
<tr>
<td>B LAW 444: Advanced UCC and Commercial Transactions</td>
<td>B LAW 444: Advanced UCC and Commercial Transactions</td>
<td>Same</td>
</tr>
<tr>
<td>ACCTG 806: Taxes and Business Planning</td>
<td>ACCTG 806: Taxes and Business Planning or ACCT 510: Business Tax Planning Theory &amp; Practice</td>
<td>Same</td>
</tr>
<tr>
<td>ACCTG 440: Advanced Management Accounting</td>
<td>ACCT 545: Strategic Cost Management</td>
<td>Note 1</td>
</tr>
<tr>
<td>ACCTG 432: Accounting Information Systems</td>
<td>ACCT 504: Auditing Theory and Practice</td>
<td>Note 2</td>
</tr>
<tr>
<td>B A 517: Communication Skills for Management</td>
<td>B ADM 526: Leadership and Ethics or ACCT 550: Professional Responsibilities and Ethics</td>
<td>Note 3</td>
</tr>
<tr>
<td>Internship</td>
<td>3 credits of elective (Approved 400-, 500-, or 800-level course) or 3 credits of Internship (ACCTG 595)</td>
<td>Note 5</td>
</tr>
</tbody>
</table>

**Note 1**: ACCTG 440 and ACCT 545 both cover advanced managerial accounting topics. Behrend does not wish to offer a 400-level managerial accounting course.

**Note 2**: ACCTG 422, which is similar to ACCTG 432, is an undergraduate course which all Accounting majors at Behrend take as part of their Bachelor’s degree. This course is also taught at the undergraduate level at a majority of the business colleges/schools. The Behrend program plans to offer advanced auditing, which will build upon the undergraduate level accounting information systems and auditing courses.

**Notes 3, 4, and 5**: These courses build flexibility in the program and allow students to complete specific requirements for a particular state, double major in finance, or complete an optional internship.
Appendix B

Letters of Consultation

Re: Behrend Resident MAcc Proposal

From: Steven Huddart
To: Ashutosh V Deshmukh
Cc: Clinical Assistant Professor Lansford Benjamin, Collins Scott, ca13@psu.edu

January 8, 2014 1:59 AM

Ash,

I take Elizabeth's point, but still feel that different degree titles are best. I suggest you use Master of Professional Accounting. The proposal would then have my unqualified support.

Sorry that I am hard to reach these last few days. I have been stranded in various airports since Friday.

Steve

On Jan 7, 2014, at 10:15 AM, Ashutosh V Deshmukh <ashv1@psu.edu> wrote:

Steve:

I asked Elizabeth regarding the change in the name for the Behrend MAcc program. It seems that changing the name will not give you the desired result (see below).

Do you still want me to change the name? Please let me know.

Thank you.

-Ash

Behrend Reply:

Re: Behrend Resident MAcc Proposal

From: Ashutosh V Deshmukh
To: Steven Huddart
Cc: Clinical Assistant Professor Lansford Benjamin, Collins Scott, ca13@psu.edu
Reply To: Ashutosh V Deshmukh

January 26, 2014 11:04 AM

Steve:

Graduate School has given me permission to change the name. I have changed the name to Master of Professional Accounting (MPAcc). I have attached the proposal, check it.

Please send me an email giving the proposal your unqualified support. We do need it quickly.

Thank you.

-Ash
Smeal Support Email:

Ash,

Thank you sending the revised proposal. I support it without qualifications.

Steve

Steven Buckhart
Department of Accounting and Smeal Chair Professor
Smeal School of Business
Penn State
350 Business Building
University Park, PA 16802-160

(814) 865-0641
buckhart@pennstate.edu
www.pennstate.edu/sb
Hi Ash,

I support the MAcc proposal that you are developing. As the lead faculty member for the Master of Project Management, your courses and program as proposed are in no way in conflict with our program and can actually lead to some potential synergies that will benefit our students. I am happy to support this program proposal. If there is anything else I can do by way of helping out, please do not hesitate to ask.

Jeff

Jeffrey K. Pinto, Ph.D.
Andrew Morrow and Elizabeth Lee Black Chair
In the Management of Technology
Black School of Business
Penn State – Erie
Erie PA 16563
(814) 898-6430

Black School of Business Facebook

All,

Black School of Business at Behrend College is proposing a residential MAcc program at the Erie campus. I have attached the proposal. I have consulted with the Graduate School and now I request comments from you.

Your prompt attention will be appreciated.

-Ash

Ashutosh (Ash) Deshmukh
IMBA Program Chair, and
Professor of Accounting & MIS
Pennsylvania State University
5340 Fryling Road, Suite 104
October 22, 2013

Dr. Ashutosh (Ash) Deshmukh  
imBA Program Chair, and  
Professor of Accounting & MIS  
Pennsylvania State University

Dear Ash,

This letter is in support of your proposal to create a new Graduate Program in Accounting at Penn State Erie, The Behrend College.

As the Director of the MBA programs at Behrend (Residential and Cranberry), I have reviewed the proposal and find that the offering of a Master of Accounting (MAcc) Degree at Penn State Erie, The Behrend College will minimally affect the Master of Business Administration program. In fact, I applaud your frank discussion of the potential impact on the program and admission that the MBA may lose some students to the new program. However, the sharing of B ADM 526 as a core course and potential cross-links of the program may be beneficial to the MBA program at Behrend in the long run. Thus, I support the proposal.

Sincerely,

[Signature]

(Bill)
William HA Johnson  
MBA Program Director  
Associate Professor of Management  
Sam and Irene Black School of Business  
Pennsylvania State University- Erie
Dear Ash,

I have reviewed the proposal for the MAcc program by the Behrend College. I do not foresee any significant impact of the MAcc program on the iMBA program. Our program is designed for managers desiring to move to senior management, and is generally not used for 150 hour education. I am happy to support the MAcc program. Please let me know if I can be of help.

Good luck.

Annie Kayerman
iMBA Program Director
The Pennsylvania State University
5340 Fryling Road, Suite 104
Erie, PA 16510
Phone: (814) 898-6827
Email: ajk29@psu.edu
Date: November 6, 2013

From: Stephen P. Schappe, Director

To: Ash Deshmukh
Professor of Accounting and MIS

Subj: Proposed RI Master of Accounting Degree Program

Thank you for the opportunity to review your proposal for a new resident instruction Master of Accounting degree program in the Black School of Business at Penn State Erie, The Behrend College.

Given that CPA candidates in the Commonwealth of Pennsylvania are now required to have completed a bachelor’s degree and at least 150 credit hours, this is a timely and appropriate offering. Although students have many different ways of meeting the credit requirement, this is an excellent opportunity for them to focus their post-baccalaureate studies in their professional discipline and to apply the earned credits toward a master’s degree.

The School of Business Administration is pleased to support your proposal and your efforts.
ASHUTOSH V DESHMUKH

From: Thomas T. Amlie <tta2@psu.edu>
Sent: Saturday, November 02, 2013 9:36 AM
To: ASHUTOSH V DESHMUKH
Subject: Re: Behrend Resident MAcc Proposal

Ash –

I have reviewed the proposal for your resident MAcc program. It appears to be a well-thought-out program which will assist the students in your area in their career progress.

Tom Amlie

Thomas T. Amlie
Associate Professor of Accounting
Penn State - Harrisburg
717-948-6441
717-948-6456 (fax)
ASHUTOSH V DESHMUKH

From: ASHUTOSH V DESHMUKH <avad1@psu.edu>
Sent: Thursday, October 31, 2013 2:59 PM
To: Scott Collins
Cc: lansford@psu.edu; sjh11@email.psu.edu
Subject: RE: Behrend Resident MAcc Proposal

Scott and Ben:

Thank you very much for your support.

I will change the statement in the proposal and make it clear that Smeal program has broader appeal. I am also interested in getting syllabi and aligning our courses. I will be in touch once the proposal is approved. I believe we will be able to stabilize enrollments in our program in a couple of years, I will appreciate any help you can give us by sending us qualified applicants who cannot find place in the Smeal program.

-Ash

From: Scott Collins [mailto:sgc132@smeal.psu.edu]
Sent: Thursday, October 31, 2013 8:40 AM
To: ASHUTOSH V DESHMUKH
Cc: lansford@psu.edu; sjh11@email.psu.edu
Subject: RE: Behrend Resident MAcc Proposal

Dear Ash,

Thank you for soliciting our feedback on Behrend College’s proposed residential Master of Accounting program. Ben Lansford and I have reviewed the proposal, and we are happy to provide you our collective response.

As acknowledged in the proposal document, the proposed Behrend program is based on Smeal’s two existing Master of Accounting programs, the One-Year MAcc and the Integrated undergraduate-graduate MAcc. A material difference between the proposed Behrend curriculum and Smeal’s existing curriculum is substituting the "Leadership and Ethics" course for the Smeal’s "Leadership Communications course" and "Auditing Theory and Practice" (advanced auditing) for Smeal’s “Accounting and Information Systems” course. We see no problem with these course substitutes.

We would be pleased to share the syllabi from Smeal MAcc courses with you in an effort to align proposed course content with existing courses.

We would like to correct a statement in the proposal. The proposal reads:

Smeal College of Business offers a resident MAcc program in Accounting; however, it is expressly designed for the State College region and does not benefit Behrend College, or Erie area students.
Smeal's Integrated MAcc Program is not expressly designed for the State College region. Rather, Smeal's Integrated MAcc Program is open to all incoming Smeal students, which includes students transferring to University Park from Behrend College and other Commonwealth Campuses. Each year several students who spent their freshman and sophomore years at a Commonwealth Campus enter our Integrated MAcc Program. Moreover, Smeal's One-Year MAcc Program admits students who have earned their undergraduate degrees from other institutions in Pennsylvania and throughout the nation. In fact, a 2013 Smeal One-Year MAcc graduate had earned his undergraduate degree from a Commonwealth Campus, and applications under consideration for admission to future One-Year MAcc classes include additional Commonwealth Campus students and students who are not currently pursuing their undergraduate education at any Penn State campus. Thus, Smeal's MAcc Programs are not designed only for the State College region.

The Smeal One-Year MAcc Program is not currently operating at full instructional capacity. In fact, in our second year of operation we have 18 open seats in the One-Year MAcc Program based on our initial instructional capacity of 50 students. This brings into question an assumption being made in the "anticipated size of program" section of your proposal, where you suggest a steady-state enrollment of 25 students in the near future. Once we reach our initial steady-state capacity, we would be happy to help refer qualified candidates to you.

Best,

Ben Lansford
Scott Collins

From: ASHUTOSH V DESHMUKH [avd1@psu.edu]
Sent: Monday, October 21, 2013 12:06 PM
To: 'Thomas T. Amile'; Scott Collins; Benjamin Lansford; 'JEFFREY PINTO'; 'WILLIAM HAROLD JOHNSON'
Cc: 'BALAJI RAJAGOPALAN'; STEPHEN PATRICK SCHAPPE; DONALD L BIRX
Subject: Behrend Resident MAcc Proposal

All,

Black School of Business at Behrend College is proposing a residential MAcc program at the Erie campus. I have attached the proposal. I have consulted with the Graduate School and now I request comments from you.

Your prompt attention will be appreciated.

-Ash

Ashutosh (Ash) Deshmukh
IMBA Program Chair, and
Professor of Accounting & MIS
Pennsylvania State University
5340 Fryling Road, Suite 104
Erie, PA 16510
www.worldcampus.psu.edu/IMBA
Phone: (814) 898-6712
Fax: (814) 898-6528
GRADUATE COUNCIL COMMITTEE ON PROGRAMS AND COURSES
SUBCOMMITTEE ON NEW AND REVISED PROGRAMS AND COURSES

PROGRAM, OPTION, OR MINOR PROPOSAL FORM

Submit 1 copy of the proposal form and 25 copies of the supporting documentation as outlined on the reverse side of this form to the Curriculum Coordinator, University Faculty Senate, 101 Kern Graduate Building. The proposals will be transmitted to the Dean of the Graduate School for consideration by the Graduate School's Subcommittee on New and Revised Programs and Courses, and the Committee on Programs and Courses. For a detailed explanation of the form, see the Guide to Curricular Procedures.

College: College of Engineering
Department or Instructional Area: School of Engineering Design, Technology, and Professional Programs

NEW PROGRAM, OPTION, OR MINOR
Designation of Program: Engineering Design
Classification of Instructional Programs (CIP) Code: 15.1502
Designation of Option: 
Designation of Minor: 
Effective Date: Fall Semester 2013

OLD PROGRAM, OPTION, OR MINOR: □ Change □ Drop
Old Designation of Program: 
Old Designation of Option: 
Old Designation of Minor: 
New Designation of Program (if changed): 
New Designation of Option (if changed): 
New Designation of Minor (if changed): 
Effective Date: 

SUBMITTED by: 
Date: 1/15/13
NOTED by: 
Date: 3/11/2014
APPROVED by: 
Date: 3/11/2014
NOTED by: 
Date: 3/10/2014
RECOMMENDED by: 
Date: 3/10/2014

Sven G. Bilen, Head, School of Engineering Design, Technology, and Professional Programs
Scungjia Kim, College of Engineering Representative to Graduate Council Subcommittee on New and Revised Programs and Courses
Renata S. Engel, Associate Dean for Academic Programs, College of Engineering
Dean of the Graduate School
Subcommittee on New and Revised Programs and Courses
Committee on Programs and Courses
Proposal to Establish the Graduate Program in Engineering Design (EDSGN)
Offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) Degrees

Submitted by

Sven G. Bilén
Head, School of Engineering Design, Technology, and Professional Programs
College of Engineering

sbilen@psu.edu
814-863-1526
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Proposal to Establish the
Graduate Program in Engineering Design (EDSGN)
Offering the
Master of Science (M.S.) and Master of Engineering (M.Eng.) Degrees

A. Program Objectives

This proposed graduate program in Engineering Design will be administered by the School of Engineering Design, Technology, and Professional Programs (SEDTAPP) within the College of Engineering.

Engineering Design is an inherently multidisciplinary field grounded in engineering or approached from an engineering viewpoint. The primary objective of this program is to enable students with diverse engineering backgrounds (i.e., depth) to attain a deeper understanding of design methods (i.e., breadth) that will prepare them for design-focused careers in industry, government labs, and academia. This program will provide students with the flexibility to pursue graduate studies and research that span the traditional departments and colleges. Current Penn State students who wish to conduct research in Engineering Design typically concentrate on the application of the work, which conforms to the current graduate program structure. A graduate program in Engineering Design will provide students with the opportunity to pursue research since the process of Engineering Design could also be a focus. This opens new opportunities for collaboration both within and outside of the College of Engineering.

This program does not duplicate any other graduate program at the University. The proposed graduate program will expand the overall graduate applicant pool by providing programmatic offerings that do not fit neatly within existing graduate programs. This program has been strategically designed to advance engineering design research that is independent of, but complementary to, current program offerings. For instance, students in the proposed program could work with mechanical engineering students to place their analytical and theoretical work in the context of engineering design and innovation while leveraging existing engineering optimization courses. The same can be said for industrial engineering students focusing on human factors or manufacturing. Engineering design students will focus more on the conceptual stages of design, while the industrial engineering students focus more on the later stages of design and implementation. This program would also complement the focus on larger-scale systems in aerospace, architectural, civil, electrical, and industrial engineering. This program will provide a niche for students who are interested in pursuing an advanced degree with exposure to a broader range of topics that are widely applicable to a range of industries and innovation processes.

An advanced degree in Engineering Design will help to reduce the void in design knowledge/expertise and make our graduates more attractive to industry, state and federal agencies, international businesses, major bilateral and multilateral agencies, non-governmental organizations, and academia (Table 1).

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Table 1. Potential Employers for EDSGN Graduates

The value of the advanced degree to a hiring organization comes from the graduate’s breadth in design built on a technical engineering base; that is, the “T” model. Backgrounds of students and subsequent career paths for graduates include:

Product Designer. This student has finished an undergraduate degree in a technical field and is interested in the design aspects that are necessary to take a technology to market. The graduate would be hired by a company as product development engineer, product manager, etc.

Entrepreneur. This student wishes to stay in, or to come to, State College to pursue a start-up venture on a product idea from their undergraduate program. Many students have expressed an interest in this type of program, which would allow them to continue working toward a relevant degree while pursuing their start-up company. The graduate would then use their training to develop products and services for the company.
**Corporate Design/Innovation Leader.** This student is interested in design research and practical applications to product/process design and innovation practices within a company or organization. The graduate would be hired into a design or innovation group within a company or be asked to start such a group.

**B. List of New Courses to be established as a part of the new offering.**

The Engineering Design courses are aligned with three primary areas: **Engineering Product Design, Systems Design,** and **Data-Driven Design.** **Engineering Product Design** addresses the identification of consumer preferences and requirements, the evaluation of existing products and product families, and the development of innovative designs. **Systems Design** examines the role components play within systems and the optimization of systems as a whole. This includes defining and developing a variety of systems that satisfy user requirements. **Data-Driven Design** focuses on using data to motivate and inform design decisions and assess current product performance.

The following courses are being developed to complement the existing EDSGN course offerings and to support the proposed graduate degree program.

- **EDSGN 548 Interaction Design (3)** Strategies in user-centered design, ergonomic product analysis, statistical data analysis, low and high fidelity prototyping, and innovative design techniques.
- **EDSGN 561(CSE 561/I E 561/IST 561) Data Mining-Driven Design (3)** Theoretical data mining/machine learning algorithms can be employed to solve large scale, complex design problems.
- **EDSGN 558 Systems Design (3)** Systems engineering design, methodology, management, tools, integration, and operation for large and small-scale systems.
- **EDSGN 581 Design Studio I (3)** Cross-disciplinary teams learn in a studio environment to consider broad aspects and context of engineering design activities.
- **EDSGN 582 Design Studio II (3)** Cross-disciplinary teams in an engineering design studio environment with project emphasis on technical and analytical depth. Prerequisite: EDSGN 581.
- **EDSGN 585 Design Portfolio (1)** Preparation of a portfolio summarizing the student’s experience with engineering design research and practice. Prerequisite or Concurrent: EDSGN 582.

**C. Complete Program Statement.**

**Program Administration.** The administrative home for the graduate program in Engineering Design will be in the School of Engineering Design, Technology, and Professional Programs (SEDTAPP) within the College of Engineering. The academic program will be administered by Graduate Faculty within the Engineering Design Program and supported by administrative staff within SEDTAPP.

**Degrees Offered.** This program will offer the Master of Science (M.S.) and Master of Engineering (M.Eng.) degree in Engineering Design; both will require a minimum of 32 credits. All requirements for a master’s degree must be completed within eight years of admission to degree candidacy.

**Scholarship and Research Integrity (SARI) Program.** All graduate students must participate in SARI training by completing the online University module offered through the Office of Research Protections (ORP) during their first year of study and 5 hours of discussion-based training. To satisfy the 5-hour discipline-specific discussion-based training, SEDTAPP will provide 2 hours of training as part of their colloquium; the remaining 3 hours of training can be satisfied through College or ORP offerings. These requirements must be met before graduation.

**Engineering Design Courses.** Listed below are Engineering Design courses by category and focus area and the courses that can be used to satisfy the elective credits requirements (6 for M.S.; 9 for M.Eng.). These courses span a variety of disciplines including management, systems engineering, industrial engineering, and mechanical engineering.
**Prescribed Courses.** All candidates for both the M.S. and the M.Eng. degree must take 8 credits as follows: EDSGN 581 (3), EDSGN 582 (3), EDSGN 585 (1), EDSGN 590 (1). M.S. degree candidates must also take 6 credits of thesis research (EDSGN 600/610).

- **EDSGN 581 Design Studio I (3)** Cross-disciplinary teams learn in a studio environment to consider broad aspects and context in their engineering design activities.
- **EDSGN 582 Design Studio II (3)** Cross-disciplinary teams in an engineering design studio environment with project emphasis on technical and analytical depth. Prerequisite: EDSGN 581.
- **EDSGN 585 Design Portfolio (1)** Preparation of a portfolio summarizing the student’s experience with engineering design research and practice. Prerequisite or concurrent: EDSGN 582
- **EDSGN 590 Colloquium (1–3)** No description.

**Focus Area Elective Courses.** It is intended that students choose a focus area (Engineering Product Design, Systems Design, or Data Driven Design) within the program and take at least two courses (6 credits) from that area. A minimum of four courses (12 credits) from the focus areas must be taken.

**Engineering Product Design** addresses the identification of consumer preferences and requirements, the evaluation of existing products and product families, and the development of innovative designs.

- **EDSGN 479 (I E 479) Human-Centered Product Design and Innovation (3)** Consumer product design for a global market, incorporating human factors principles and user desires in a multicultural perspective.
- **I E 546 (M E 546) Designing Product Families (3)** Product families, product platforms, mass customization, product variety, modularity, commonality, robust design, product architectures.
- **EDSGN 547 (M E 547) Designing for Human Variability (3)** Statistics, optimization, and robust design methodologies to design products and environments that are robust to variability in users.
- **EDSGN 548 Interaction Design (3)** Strategies in user-centered design, ergonomic product analysis, statistical data analysis, low and high fidelity prototyping, and innovative design techniques.

**Systems Design** focuses on defining and developing a variety of systems that satisfy user and mission requirements.

- **EDSGN 401 Engineering Systems Design (3)** Design requirements for complex systems; trade-offs between market opportunities and technology; translation of priorities and needs into an operational concept.
- **EDSGN 507 (SYSEN 507) Systems Thinking (3)** The theory and practice of systems thinking. General systems theory; systems dynamics, emergent properties, structure, feedback and leverage.
- **EDSGN 558 Systems Design (3)** Systems engineering, principles and practices and the application of systems engineering in the analysis, design, development, integration, verification and validation of complex systems.

**Data-Driven Design** focuses on using data to motivate and inform design decisions and assess current product performance.

- **EDSGN 549 (I E 549) Design Decision Making (3)** Complexity of decision-making; state-of-the art methods and tools.
- **EDSGN 561(CSE 561/I E 561/IST 561) Data Mining–Driven Design (3)** Theoretical data mining/machine learning algorithms can be employed to solve large scale, complex design problems.

**General Electives – 6 credits are required for the M.S. degree; 9 for the M.Eng. degree**

Electives are to be selected in consultation with the student’s adviser. The courses listed below are examples of appropriate courses. Other courses may be approved in consultation with the advisor.

- **I E 418 Human/Computer Interface Design (3)** Design and evaluation of the human/computer interface, including human performance, visual displays, software design, and automated systems monitoring.
- **I E 460 Service Systems Engineering (3)** Use of quantitative models and methods for analysis, design and control of service systems.
I E 470 Manufacturing System Design and Analysis (3) Contemporary design and analysis methodologies used to organize systems for economic manufacture of products.

I E 520 Multiple Criteria Optimization (3) Study of concepts and methods in analysis of systems involving multiple objectives with applications to engineering, economic, and environmental systems.

I E 557 Human-in-the-Loop Simulation (3) This course is aimed at understanding how theoretical data mining/machine learning algorithms can be employed to solve large scale, complex design problems.

I E 563 Computer-Aided Design for Manufacturing (3) Study of CAD systems and concepts including 3D wireframe and solid modeling systems, emphasizing manufacturing applications.

IST 413 Usability Engineering (3) This course addresses activities in the system development process that ensure usability. It considers the emerging concept of usability, requirements gathering and analysis, activity design, information design, interaction design, documentation design, user testing and usability evaluation.

IST 520 Foundations in Human-Centered Design (3) Foundational theories in Human-Centered Interactions used for Human-Centered Design.

IST 521 Human-Computer Interaction: The User and Technology (3) Users, models of users, developing the models, technology for creating interfaces; examples of good research and implications for Human-Computer Interface (HCI) design.

M E 561 Structural Optimization Using Variational and Numerical Methods (3) Shape and size optimization of elastic structures, continuous and discrete solution methods and numerical algorithms, design of compliant mechanisms.

M E 565 Optimal Design of Mechanical and Structural Systems (3) Shape and size optimization of elastic structures, continuous and discrete solution methods and numerical algorithms, design of compliant mechanisms.

MANGT 510 Project Management (3) A problem-based, interdisciplinary course in project management skills and techniques needed to manage projects in a modern business environment.

SYSEN 550 Creativity and Problem Solving I (3) Foundations of individual problem solving, including creativity, cognitive style and level, problem solving processes and techniques, the paradox of structure.

SYSEN 555 Invention and Creative Design (3) This course focuses on the creative design process which leads to the development of new products, processes, and systems (i.e., invention).

**Master of Science (M.S.) Degree Requirements.** The M.S. degree is an academic degree, which is strongly oriented toward research. To receive the Master of Science degree in Engineering Design, a student must complete at least 32 credits beyond the baccalaureate degree. At least 18 credits in the 500 and 600 series, combined, must be included in the program. A minimum of 12 credits in course work (400 and 500 series), as contrasted with research, must be completed in the major program. A thesis is required and at least 6 credits of thesis research (EDSGN 600/610) must be included in the program.

**REQUIREMENTS FOR THE PROGRAM – 32 credits**

A minimum of 32 graduate credits is required as follows: focus area elective courses (12 cr.), general electives (6 cr.), engineering design studio (6 cr.), engineering design portfolio (1 cr.), colloquium, (1 cr.), thesis research (6 cr.)

Students must take the following 8 credits: EDSGN 581 (3), EDSGN 582 (3), EDSGN 585 (1), EDSGN 590 (1)

Students must select a minimum of 12 credits of focus area electives from: EDSGN 401 (3), EDSGN 479 (3), EDSGN 507 (SYSEN 507) (3), I E 546 (M E 546) (3), EDSGN 547 (3), EDSGN 548 (3), EDSGN 549 (3), EDSGN 558 (3), EDSGN 561 (CSE 561/I E 561/IST 561) (3)

Students must select 6 credits of general electives from: I E 418 (3), I E 460 (3), I E 470 (3), I E 520 (3), I E 557 (3), I E 563 (3); IST 413 (3); IST 520 (3); IST 521 (3); M E 561 (3), M E 565 (3); MANGT 510 (3); SYSEN 550 (3), SYSEN 555 (3) or from a list of approved courses maintained by the program

Students must take 6 credits of EDSGN 600/610

**Sample Program of Study:** Master of Science in Engineering Design (M.S., EDSGN)

**Engineering Product Design Area – 32 credits**

12 credits in Engineering Product Design: EDSGN 546, Designing Product Families (3), EDSGN 547, Designing for Human Variability (3), EDSGN 548, Interaction Design (3), and EDSGN 479 (Human-Centered Product Design and Innovation)
6 elective credits: MANGT 510, Project Management (3) and SYSEN 550, Creativity and Problem Solving (3)

6 credits: EDSGN 581, Engineering Design Studio I (3) and 582, Engineering Design Studio II (3)

1 credit: EDSGN 590, Colloquium (1)

6 credits: EDSGN 600, Thesis Research/EDSGN 610, Off-Campus Thesis Research

1 credit: EDSGN 585, Engineering Design Portfolio (1)
**Master of Engineering (M.Eng.) Degree Requirements.** The M.Eng. degree is a non-thesis professional master’s degree that provides training for advanced professional practice. To receive the Master of Engineering degree in Engineering Design, a student must complete at least 32 credits beyond the baccalaureate degree, and a scholarly report based on an independent studies course (EDSGN 596), or a domestic (ENGR 595A) or international (ENGR 595I) internship experience, and an engineering design portfolio (ENGR 585). A minimum of 18 credits must be in the 500 series.

**REQUIREMENTS FOR THE PROGRAM – 32 credits**
A minimum of 32 graduate credits is required as follows: focus area elective courses (12 cr.), general electives (9 cr.), engineering design studio (6 cr.), engineering design portfolio (1 cr.), colloquium, (1 cr.), independent studies (3 cr.) or domestic or international internship (3 cr.)

Students must take the following 8 credits: EDSGN 581 (3), EDSGN 582 (3), EDSGN 585 (1), EDSGN 590 (1)

Students must select a minimum of 12 credits of focus area electives from: EDSGN 401 (3), EDSGN 479 (3), EDSGN 507 (SYSEN 507) (3), I E 546 (M E 546) (3), EDSGN 547 (3), EDSGN 548 (3), EDSGN 549 (3), EDSGN 558 (3), EDSGN 561 (CSE 561/I E 561/IST 561) (3)

Students must select 9 credits of general electives from: I E 418 (3), I E 460 (3), I E 470 (3), I E 520 (3), I E 557 (3), I E 563 (3); IST 413 (3); IST 520 (3); IST 521 (3); M E 561 (3), M E 565 (3); MANGT 510 (3); SYSEN 550 (3), SYSEN 555 (3) or from a list of approved courses maintained by the program

Students must take EDSGN 596 (3 cr.), or ENGR 595A (3 cr.), or ENGR 595I (3 cr.)

**Sample Program of Study:** Master of Engineering in Engineering Design (M.Eng., EDSGN) – 32 credits
(for students with a broad interest in engineering design who wish to graduate in 15 months)

**Summer 1**
3 credits in Engineering Product Design: EDSGN 479, Human-Centered Product Design and Innovation (3)
(online)
3 general elective credits: SYSEN 550, Creativity and Problem Solving (3) (online)

**Year 1: Fall/Spring Courses**
6 credits in Data-Driven Design: EDSGN 549, Design Decision-Making (3) and I E 520, Multiple Criteria Optimization (3)
6 credits in Systems Design: SYSEN 507 (EDSGN 507), Systems Thinking (3) and EDSGN 558, Systems Design (3)
3 general elective credits: M E 561, Structural Optimization Using Variational and Numerical Methods (3)
6 credits: EDSGN 581, Design Studio I (3) and EDSGN 582, Design Studio II (3)
1 credit: EDSGN 585, Engineering Design Portfolio (1)
1 credit: EDSGN 590, Colloquium (1)

**Summer 2**
3 credits: EDSGN 596, Independent Studies (3) or ENGR 595A, Engineering Internship (3 cr.) or ENGR 595I, International Engineering Internship

**D. Admission Requirements**

For admission to the Graduate School, an applicant must hold either (1) a baccalaureate degree from a regionally accredited U.S. institution or (2) a tertiary (postsecondary) degree that is deemed comparable to a four-year bachelor's degree from a regionally accredited U.S. institution. This degree must be from an officially recognized degree-granting institution in the country in which it operates. Prospective students will be considered who hold a degree in engineering or related field, or equivalent experience. Applicants must present at least a 3.00 grade-point average to be considered for admission. Exceptions to the minimum 3.00 grade-point average may be made for students with special backgrounds, abilities, and interests. Applicants will be accepted up to the number of places available for new students.
Scores from the Graduate Record Examination (GRE) are required for admission.

The language of instruction at Penn State is English. All international applicants must take and submit scores for the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), with the exceptions noted below. The minimum acceptable score for the TOEFL is 550 for the paper-based test, or a total score of 80 with a 19 on the speaking section for the Internet-based test (iBT). Applicants with iBT speaking scores between 15 and 18 may be considered for provisional admission, which requires completion of specified remedial English courses ESL 114G (American Oral English for Academic Purposes) and/or ESL 116G (ESL/Composition for Academic Disciplines) and attainment of a grade of B or higher. The minimum acceptable composite score for the IELTS is 6.5. Graduate programs may have more stringent requirements.

International applicants are exempt from the TOEFL/IELTS requirement who have received a baccalaureate or a graduate degree from a college/university/institution in any of the following: Australia, Belize, British Caribbean and British West Indies, Canada (except Quebec), England, Guyana, Republic of Ireland, Liberia, New Zealand, Northern Ireland, Scotland, the United States, and Wales.

E. Justification for the Program.

This program supports the College of Engineering’s strategic planning efforts to establish M.S. and M.Eng. degree programs that respond to market needs. Penn State is recognized as an emerging leader in engineering design research, which integrates concepts and skills across disciplines and professions to shape and reshape the world. To design effective solutions, an increasingly broad array of knowledge and skills is required. It requires in-depth exposure to different communities of practice and the concepts, techniques, and tools used by each to understand phenomena and to design solutions.

This program will develop skills and resources, both within the University and in its graduates, to address the challenges in our future. The world community has demonstrated a need for engineers with technical proficiency and depth, rounded by innovative breadth. This program will help meet that need.

A recent National Science Foundation–commissioned report from National Academy of Engineering warns: “In a global, knowledge-driven economy, technological innovation, the transformation of new knowledge into products, processes, and services is critical to competitiveness, [and] long-term productivity growth ....” This corroborates the data collected in alumni surveys conducted by the Penn State College of Engineering. Over half of the respondents report holding design responsibilities, and that figure is growing. Yet, our curriculum does not correspond with these trends. In some countries, 10–20% of the undergraduate engineering curriculum is devoted to design, as opposed to 5–7% in the United States. As a result, baccalaureate degree holders lack the skills necessary to work in complex design environments. To meet this need, other countries (e.g., United Kingdom, Sweden, the Netherlands, India, and Singapore) are focusing on graduate degrees in design. Similar programs are emerging in U.S. institutions as well, including (with program title and enrollment numbers): Carnegie Mellon (Master of Product Development, the program is currently capped at 20 students per year and they expect to grow to 30–40 students over the next few years), University of Michigan (Ph.D. in Design Science, the program currently accommodates 10–12 students at a time; ~15 students apply each year and 1–3 are admitted. Note that this is a doctoral program, which is fundamentally different in many respects to our proposed program), Northwestern University (Master of Science in Engineering Design and Innovation, this program is capped at 25 students per year and there are many more applicants and they turn potential students away every year), University of Pennsylvania, Master of Science in Engineering – Integrated Product Design, the program has 40 students currently enrolled, and admits 20 students each year, interest has been growing), and Stanford University (Master of Science in Engineering, Product Design, enrollment numbers not available, but some courses in the program have waiting lists of over 150+ students).

A limited number of courses need to be added to the curriculum to support this program. The SEDTAPP faculty has been teaching graduate courses in EDSGN for the past five years. Several existing courses in other disciplines will serve as electives and a few selected courses are already cross-listed with EDSGN. This program brings together diverse faculty with interests in engineering design and design in general. For example, existing collaborations through CRDI (Center for Research in Design and Innovation) are assets to the proposed program. Classes will be conducted in classroom, laboratory, and studio facilities in the Center for Engineering Design and Entrepreneurship (CEDE), which is managed by SEDTAPP. Some courses may be taken online.
Engineering Design as a Field of Study and Research. Engineering Design has coalesced into a field distinct from other engineering disciplines, having its own body of knowledge and abstracted practices that can be applied across disciplines. The proposed graduate program is consistent with existing trends in Engineering Design research. Design has always been fundamental to the practice of engineering. As companies sought to improve the performance of both their products and their organizations, they codified and standardized their business and engineering practices. International Standards Office (ISO) 9000 series certification, for example, requires that companies document their product development process. Achieving this certification, which is a necessity for many engineering organizations, provides opportunities for engineers to identify new efficiencies in their work and work processes.

At the same time, most engineering programs are focused on preparing their graduates for success. To meet this objective, a “capstone design” or senior project experience has been instituted as a requirement for most accredited undergraduate engineering programs. Engineering design has matured into its own field of practice. There is now a vibrant Engineering Design community consisting of a diverse group of members of academia and industry, domestic and international. There is also a growing number of well-regarded journals (Appendix A), funding programs (e.g., the NSF Engineering and Systems Design Program), organizations (Appendix B), and conferences (Appendix C) that focus primarily on engineering design.

Engineering design is a collaborative and multidisciplinary activity that includes topics found in the list below. While topics on this list are also likely found in other disciplines, the focus for students enrolled in this program will be to approach them from an engineering perspective. For example, in design cognition, the focus would be on how an engineer acquires design knowledge, perception, intuition, and reasoning. In data driven design, how this design methodology would be employed to solve large scale, complex engineering design problems.

- design automation and optimization
- design theory and methodology
- engineering design pedagogy
- systems engineering
- design decision-making
- product architecture and families
- design of complex systems
- design for the developing world
- design of sustainable products and systems
- product-service systems design
- simulation-based design under uncertainty
- design cognition
- design innovation
- human-centered design
- value-driven design
- decision-based design
- multidisciplinary design optimization
- data-driven design

Recruitment of Students. Specific strategies will be used to recruit students to the proposed graduate program, including the development of a dynamic web page, the recruitment of undergraduate students enrolled in undergraduate programs and minors administered by SEDTAPP, marketing to peer institutions, interaction with industry partners, and engagement with the Applied Research Lab. Government research laboratories (e.g., Sandia National Laboratories) have established programs where employees can take a leave of absence to pursue graduate studies related to their area of expertise (e.g., systems design). The undergraduate minor and certificate programs within SEDTAPP (Engineering Design Certificate Program, Engineering Entrepreneurship Minor, Engineering Leadership Development Minor, and the Engineering and Community Engagement Certificate Program) are natural feeders into the graduate program. Minors administered by other departments (e.g., Product Realization Minor) and an active multidisciplinary capstone design program via The Learning Factory provide additional avenues for recruiting students into the proposed graduate program. Beyond these typical potential feeder programs, the graduate program in Engineering Design will recruit from senior engineering students within College of Engineering who, first and foremost, would like to gain expertise in engineering design.

Projected Size of Program, Impact on Other Courses and Faculty Load. The proposed graduate program in engineering design will exploit the existing demand for design courses at Penn State by advertising its existence to the colleges and programs that now offer isolated courses on engineering design. Initially, we anticipate that the program will have 10–15 students and increase to approximately 25 students as the program evolves.

The primary demand on faculty will be the need for the program to offer the courses with the necessary frequency to meet graduate requirements. Existing graduate courses are already being offered on a typical rotation by tenure-track engineering design faculty. The School will also be hiring to replace a retiring faculty member and to address growth
of its programs and these new faculty members will also teach at the graduate level in design. Hence, the School feels that faculty teaching loads due to the graduate program will not unduly increase.

Graduate Faculty in the Engineering Design Program will chair and serve on M.S. advisory committees, inform students on funding opportunities, and mentor students in terms of selecting a thesis topic and publishing their research.

**Funding Opportunities for Engineering Design Graduate Students.** We anticipate that most of the students enrolled in the M.S. degree program will be supported wholly or in large part as research assistants on funded research projects. Funding for graduate student research will come primarily from the graduate faculty in the Engineering Design program. Historically, faculty have supported from 10-15 students per year with funding from federal agencies and industry partners. It is expected that this graduate program will attract additional industry-sponsored research projects. M.Eng. degree candidates will largely be self-supported or funded by their employer.

**F. Justification for the Degree Title Used.**

**Master of Science in Engineering Design (M.S., EDSGN).** The Master of Science degree is strongly oriented toward research. Course work, as contrasted with research, must be completed in the major program. A thesis is required and 6 credits in thesis research (600 or 610) must be included in the program.

**Master of Engineering in Engineering Design (M.Eng., EDSGN)**
The Master of Engineering degree is a non-thesis professional master’s degree that provides training for advanced professional competence in several fields of engineering. This degree emphasizes practical application of knowledge for solving problems and should be distinguished carefully from the research-oriented programs that lead to the academic degree of Master of Science.

**G. Accreditation.**

Not applicable.

**H. Written Responses from Affected Departments.**

The following Engineering departments were consulted (in alphabetical order): Architectural Engineering (Chimay Anumba); Aerospace Engineering (George Lesieutre); Chemical Engineering (Andrew Zydney); Civil & Environmental Engineering (Peggy Johnson); Computer Science & Engineering (Raj Acharya); Electrical Engineering (Kultegin Aydin); Engineering Science and Mechanics (Judith Todd); Industrial & Manufacturing Engineering (Paul Griffin); Mechanical & Nuclear Engineering (Karen Thole).

Consultation was also sought from: the College of Agricultural Sciences (Paul Heinemann – Agricultural & Biological Engineering), the Intercollege Graduate Degree Program in Bioengineering (Cheng Dong), Penn State Great Valley (James Nemes), College of Arts and Architecture (Graeme Sullivan), Landscape Architecture (Ron Henderson), College of Earth and Mineral Sciences (John Hellman), Electrical Engineering, Engineering Science, and Engineering Management – Penn State Harrisburg (Peter Idowu), College of Education (Stephanie Knight), and the College of IST (Michael McNeese). Excerpts and responses to the comments, questions, and concerns follow.

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**Chimay Anumba, Professor & Head, Department of Architectural Engineering (11/19/12).** I have gone through the proposal and would offer the following comments:

1. I fully concur with the need for a new Masters Degree in Engineering Design. It is long overdue and is a welcome addition to the portfolio of courses within the College;
2. I would like to see the following courses included in the proposal (unless they are embedded in other courses that have been proposed):
   a. Eco-Design OR Sustainability in Design – this should emphasize the importance of sustainability in design and how appropriate design enhances the long-term sustainability of both products and processes;
   b. Collaborative and Concurrent Engineering – this should address the issues associated with encapsulating the ‘voice of the customer’ in design, getting it right first time, collaborative and concurrent design, etc.;
SEDTAPP Response. These are very good suggestions for courses and are areas that would find broad support among our faculty. Elements of these courses are already embedded in several of our courses, but we will seek to develop and/or partner with other departments and institutes full courses in these domains as our program advances.

3. Is there provision for a Design Project/Thesis in the MS program? This would be useful for students from a variety of engineering disciplines to apply the generic principles that they learn in the program to the design of an artifact within their discipline.

SEDTAPP Response. The intent of the studio course sequence is to provide a significant design project experience for the students in the program. We see this as a two way street, i.e., that engineering design principles they are researching for their thesis would see application in this studio, and principles they learn from the studio will find application for design elements of their thesis.

I hope that the above are helpful. I would certainly encourage Architectural Engineering graduates to consider the Masters in Engineering Design.

Andrew Zydney, Professor & Head, Department of Chemical Engineering (11/03/12). This looks like a well-formulated proposal for a new graduate program in Engineering Design. I don't think this will attract many Chemical Engineering students due to the absence of any focus on process design, but this could be very attractive to graduates of other engineering majors. Good luck!

Peggy Johnson, Professor & Head, Department of Civil and Environmental Engineering (11/07/12). Interesting proposal! Below are my comments:

1. It does not appear that this is intended for the world campus. Why not? It seems like that would be the way to go to cover costs and reach the intended audience.

SEDTAPP Response. In order to offer a compelling online program, we first need to establish a resident graduate program that then can be more easily be extended to online offerings. Once established, we will explore online revenue offerings.

2. It looks like 4 or so new classes will need to be created in EDSGN. What is the intent for who will do that?

SEDTAPP Response. Actually, one “new” class has already been offered as 597 (proposed as EDSGN 558 Systems Design) three times and was already planned to be a permanent offering. Hence, only 3 new classes need to be created, and these are the studio and the portfolio, which will be collaboratively offered by the faculty in the program.

3. Why are only IE and ME included in technical electives? Don’t all areas of engineering do design? This will certainly limit the applicant pool, which may or may not be an issue. Along that line of thought, I don’t understand this sentence from part J. “The program would also complement the focus on larger-scale systems in aerospace, architectural, civil, and electrical engineering.” How so? Doesn’t IE do larger scale systems, too?

SEDTAPP Response. We are in the process of expanding the electives. We would be happy to consider your suggestions for additional electives. That was an oversight and we will update IE in the list in part J.

4. Given that each of the engineering disciplines have design-related graduate degrees, if an employer was looking for a design engineer, why would he/she hire someone with an MS in Design rather than an MS in ME?

SEDTAPP Response. Design is indeed fundamental to engineering and each of the disciplines practices it generally as discipline-specific design (e.g., turbine design, circuit design, bridge design). A graduate program in Engineering Design is targeted at those interested in an experience that is distinct from the discipline-specific design in the existing programs and to employers looking to hire an engineering designer versed in broader design methods built upon a base in the traditional disciplines (see sample job postings provided in the proposal [since removed from proposal—sgb]). In addition, students will conduct research in the discipline of Engineering Design, focusing on topics such as those listed in the proposal. For example, the physics of turbine design, which might be an appropriate topic for an MS thesis in Mechanical Engineering, would be less appropriate in Engineering Design. However, conducting research into the processes used to design components such as turbines and integrate them into a larger system would be an appropriate topic within engineering design.
Kultegin Aydin, Professor & Head, Department of Electrical Engineering (11/08/12). The proposed program looks very interesting. The Electrical Engineering Department does not have any suggestions or objections.

Judith Todd, Professor & Head, Department of Engineering Science and Mechanics (11/13/12). ESM supports your proposal for a MS degree in Engineering Design.

Paul Griffin, Professor & Head, Department of Industrial & Manufacturing Engineering (11/02/12). Congrats Sven…it is great to see this proposal. You know that you have my support.

Karen Thole, Professor & Head, Department of Mechanical and Nuclear Engineering (11/07/12). Thanks for your comments to our proposal. Please see my responses to your comments and questions below:

Comment 1 – How confident can one be on the marketing of the MEng degree vs the MS degree? We are concerned that the proposed degree program is already one that will not be along the traditional fields such that potential employers will need to be educated. If one mixes the MEng aspect into it, there may be further confusion given many employers do not recognize MEng degree programs.

SEDTAPP Response. We are modeling the engineering design master’s program after other established CoE master’s programs, most of which include an MEng option (e.g., Aero, EE, and IE) in addition to the primary offering of the MS. We feel that the MEng provides flexibility for students, some of whom may come from industry.

Employers are looking for this type of degree (e.g., see the sample job postings in the proposal), in which interdisciplinary and multidisciplinary are integral to the degree offering. Hence, while some education of employers may be necessary, we feel that employers are already seeking applicants with the degree that we plan to offer.

Comment 2 – What are the real differences between the MS and MEng degrees with regards to a thesis vs a scholarly paper? How will the scholarly paper be judged to ensure quality?

SEDTAPP Response. We are modeling after existing CoE programs and our graduate faculty have advised both MS and MEng students through other CoE graduate programs. As such, they have familiarity with ensuring the quality of the scholarly paper (as well as theses).

Comment 3 – Are the systems design courses overlapping with those already offered through Great Valley’s program? There also seems like there would be significant overlap between 507 and 558.

SEDTAPP Response. The EDSGN 558 course offered at UP has limited overlap with other courses offered in the SYSEN program at Great Valley. SYSEN 507 is focused on mindset (“system thinking”) whereas 558 focuses on the process of systems design.

Comment 4 – Given the ever increasing enrollments of our undergraduates in the College, is there certainty the needs will be met while not imposing additional faculty loads to bring on a new program? What will be the criteria used to cancel courses if need be due to low enrollments in the graduate courses?

SEDTAPP Response. These graduate courses are already being offered by EDSGN T&TT faculty who hold graduate appointments, and are healthily enrolled. Three additional classes not currently offered are proposed and these will be covered collaboratively by the graduate faculty as they represent the studio and portfolio within the graduate program. The EDSGN T&TT faculty also teach undergraduate offerings and the mixture of graduate to undergraduate teaching loads will remain roughly the same.

Comment 5 – Regarding the admission requirements, are all engineering majors qualified? It would appear that some would have difficulty given the lack of design in the curriculums for ChemE, CS, and others.

SEDTAPP Response. The admissions committee will be making admission decisions based on an assessment of the applicants’ undergraduate coursework and other design-related experiences to include curricular and co-curricular experiences, work experiences, etc.
Comment 6 – It would be helpful if the proposal also listed how the interactions might take place with existing design efforts such as CRDI, CEDE, and the efforts in Arts and Architecture.

SEDTAPP Response. Thanks for this comment, and we will make sure that this additional information is included in the proposal. These certainly are strong interactions that will be strengthened with the addition of the graduate program.

Paul Heinemann, Professor & Head, Department of Agricultural and Biological Engineering (11/12/12). The Department of Agricultural and Biological Engineering supports your proposal and has no concerns. Some of the ABE graduate students may be interested in a couple of the graduate level EDSGN courses.

James Nemes, Professor & Interim Director of Academic Affairs, School of Graduate Professional Studies (11/12/12). A couple things I noticed that you might want to look at.

1) The committees will want to know which of these courses are new and which are existing. Should state explicitly which are new. I’m also not sure how those committees would view renaming existing courses such as the SYSEN 507 course to be EDSGN.

SEDTAPP Response. We are seeking to cross-list this course and will begin the process to do so.

2) They will look for a scheduling pattern of courses. – I didn’t see it in there, but might have missed it.

SEDTAPP Response. This will be added to the proposal.

3) Should update the TOEFL requirements to the new test.

SEDTAPP Response. We will update these requirements.

Graeme Sullivan, Director of School of Visual Art, College of Arts and Architecture (8/6/13). It’s good news that you’ve been able to put the Engineering Design Program together. The curriculum looks comprehensive and although I don’t know the scope of the coursework landscape across the Engineering disciplines, the liberal sprinkling of terms such as context, cross-disciplinary, and of course problem solving, suggests an outward looking perspective. Yet, ‘problem solving’ tends to consolidate issues and problems within discipline parameters. Given the thesis focus of the proposed M.S. it seems a good opportunity to pick up on the spirit of design discussion that has been percolating across Colleges in recent times. Although there isn’t much detail in the proposal about the content/method of the Colloquium or the Design Studio courses, achieving a breadth of theoretical and purposeful perspective, while simultaneously sharpening focus would be an ideal stance to achieve. In part I’m reiterating Mehrdad’s point about potential theoretical and conceptual connections across fields and disciplines and thinking of the benefits of students in your program being exposed to these disruptive contexts at some point.

SEDTAPP Response. Thank you for reviewing the proposal - you hit the nail right on the head. The Colloquium (EDSGN 590) and Design Studios (EDSGN 581 & 582), along with the subsequent M.S. thesis, will be the "glue" that provides this context, exposes them to a broader array of thinking about design, and challenges them to apply methods and theories from different domains to advance their ideas. There is a strong push in engineering right now to focus less on "problem solving", as you allude to, and more on "problem framing" or "problem discovery", which is exactly what we hope to achieve through this program. SEDTAPP is uniquely positioned to accomplish this since we are not a traditional engineering department (e.g., electrical engineering, mechanical engineering), and we hope to leverage the wide range of design expertise that have found across colleges through our collaborations these past years. For example, the Design Summit that you attended in the Learning Factory was our first attempt to find out who is doing what and create these partnerships to help advance all of the design-related work that we are trying to accomplish. We hope to continue engaging you in these discussions and thank you for your valuable input.

Ron Henderson, Head of Dept. of Landscape Architecture, College of Arts and Architecture (8/8/13). Thank you for the opportunity to comment on the proposal for the new M.S. program in Engineering Design. On behalf of the Department of Landscape Architecture, I express support for this proposal with the comments below:
1. "Design" is distinguished from other methods of inquiry in part by the emphasis on the "critique." It is in the critique that an array of aesthetic and ethical criteria can be interjected into the assessment of the project. What courses in your proposal address aesthetics? What courses address ethics? For the latter, I read comments from other reviewers about sustainability but I see that topic as a subset, perhaps, of ethics.

SEDAPP Response. Thanks for reviewing our proposal for a M.S. in Engineering Design and for your support of the proposed program. In response to your 1st comment, we have been closely following the "critique" methods that you all use in Studio in Arts & Architecture, and agree that we will use these in the design studios (EDSGN 581 & 582) as a way to integrate and assess a wide array of criteria, including aesthetics, ethics, sustainability, etc. We plan to actively engage the faculty collaborators that we've found in Arts & Architecture (and other colleges) to help with this assessment (e.g., participate directly in our critiques and project reviews), as engineers are not usually known for their aesthetic prowess. We will continue to work with the COE’s Leonhard Center on effectively incorporating ethics into our curricula.

2. What, if any, integrative courses would be able to specifically address "non-human" ecologies in design? This is a fundamental question in landscape architecture design and practice that might contribute to the question of ethics. Such courses would be a path for landscape architects with research on engineering systems (tectonic, hydrological, biological, and others) to engage the major.

SEDAPP Response. As for your 2nd comment, the Systems Thinking (SYSEN 507), Systems Design (EDSGN 558), and Design for Human Variability (EDSGN 547) courses emphasize the contextual factors and environmental aspects that influence design beyond the "human" elements typically encountered in engineering design. These "non-human" ecologies may also be woven into the design studios (EDSGN 581 & 582) depending on the projects. We have had some experience with this, from an engineering perspective, through our participation in the Global Engineering Teams program headed by TU Berlin and Stellenbosch University in South Africa. Finally, we would be happy to list any relevant courses from LArch (and Arch, Civil Engineering, and others) in the General Electives categories to widen the scope of students that could participate.

John Hellman, Associate Dean for Graduate Education and Research, College of Earth and Mineral Sciences (12/12/12) The College of Earth and Minerals Science supports your proposal. It looks very interesting, and I believe the program will populate well. A couple of quick questions:

a) Have you considered including IE 424 in your curriculum?

SEDAPP Response. We will assess whether this course fits within the curriculum as a potential elective.

b) Have you had any discussions with World Campus? I suggest that discussing this proposal with Ann Taylor (Director of e-Dutton Institute) could be useful early on if the intent is there to expand to World Campus later on. She would have some excellent perspectives.

SEDAPP Response. We have had some preliminary discussion with World Campus and thank you for the additional contact. Any extension to online offerings requires the resident program to be established first.

Peter Idowu, Assistant Dean for Graduate Studies Electrical Engineering, Engineering Science, and Engineering Management, Penn State Harrisburg (12/12/12) Dr. Rick Ciocci from our mechanical engineering unit reviewed the proposal, as well as Dr. Sedig Agili, Director for our MS/EE, M.Eng./EE, M.Eng./ESC and MPS/EM programs. We are supportive of the initiative and the proposal, and do not envision it affecting Penn State Harrisburg or its students in any way. There are concerns however over a lack of requirement on sustainable design principles, given the likelihood that students in this program will deal with sustainable designs at some point. The Head of the A E Department made a similar comment on program requirements. We hope you find this feedback helpful.

SEDAPP Response. Thank you for your comments and support. As mentioned in my response to the Head of the A E Department, we will seek to add courses that include sustainable design as they are developed throughout the university and perhaps in response to sustainability initiatives underway. These elements are also included at various levels in the course offerings themselves.
Stephanie Knight, Associate Dean for Undergraduate and Graduate Studies, College of Education (10/3/13) The program described in the email is acceptable - I have no objections or revisions.

Michael McNeese, Senior Associate Dean for Research, Graduate Studies and Academic Affairs, College of Information Sciences and Technology (5/14/13) While we support the general idea of a Masters degree in Design we see that interests, courses, curriculum, and research within the design area are broad at Penn State, and not solely within the realm of engineering.

We cannot support a separate degree in Engineering Design from the College of Engineering as it would be in conflict with the programs I courses we already have in place and new programs we are pursuing in the future that relate to design.

SEDAPP Response (Letter dated 12/3/13 from Renata Engel). While we support the general idea of a Masters degree in Design we see that interests, courses, curriculum, and research within the design area are broad at Penn State, and not solely within the realm of engineering.” The proposal does not make any claim or imply that design is exclusive to the disciplines in the College of Engineering. In fact, the faculty tried to convey throughout the proposal that the field of study they propose is engineering design—a field which has emerged over the past several decades, and which our college began to recognize in the 1990s.

You indicate that you cannot support the proposed program because you believe that it is in conflict with existing courses, and programs you may propose in the future, but I ask that you consider that this curriculum is unique and meets a market need with its emphasis on engineering design, while also having some courses that may complement rather than duplicate existing curricula.

Peter K. Forster, Assistant Dean, Online and Professional Education, College of Information Sciences and Technology (2/17/14) In reading through the course and program proposal comments, I noted some inquiries regarding IST’s consultation. Rather than responding to these inquiries as I see them, it is probably good to simply that IST is supportive of the program following face-to-face consultations.
Proposed Bulletin Listing

Engineering Design (EDSGN)

http://www.sedtapp.psu.edu/design

SVEN G. BILÉN, Head of the School of Engineering Design, Technology, and Professional Programs
213 Hammond Building
814-865-7589

Degrees Conferred:
M.S., M.Eng.

The Graduate Faculty
Sven G. Bilén, Ph.D. (Michigan), P.E. Associate Professor of Engineering Design, Electrical Engineering, and Aerospace Engineering
Richard F. Devon, Ph.D. (California, Berkeley) Professor of Engineering Design
Kathryn Jablokow, Ph.D. (Ohio State) Associate Professor of Mechanical Engineering
Gül E. Okudan Kremer, Ph.D. (Missouri-Rolla) Professor of Engineering Design and Industrial Engineering
Scarlett Miller, Ph.D. (Illinois, Urbana–Champaign) Assistant Professor of Engineering Design and Industrial Engineering
Sandeep Purao, Ph.D. (Ph.D., Wisconsin–Milwaukee) Professor of Information Sciences and Technology
Conrad Tucker, Ph.D. (Illinois, Urbana–Champaign) Assistant Professor of Engineering Design and Industrial Engineering
Matthew B. Parkinson, Ph.D. (Michigan) Associate Professor of Engineering Design and Mechanical Engineering
Timothy W. Simpson, Ph.D. (Georgia Tech) Professor of Industrial Engineering and Mechanical Engineering

Students may specialize in Engineering Product Design, Systems Design and Data-Driven Design. Engineering Product Design addresses the identification of consumer preferences and requirements, the evaluation of existing products and product families, and the development of innovative designs. Systems Design examines the role components play within systems and the optimization of systems as a whole. This includes defining and developing a variety of systems that satisfy user requirements. Data-Driven Design focuses on using data to motivate and inform design decisions and assess current product performance.

Admission Requirements
The requirements listed here are in addition to the general requirements stated in the GENERAL INFORMATION section of the Graduate Bulletin.

For admission to the Graduate School, an applicant must hold either (1) a baccalaureate degree from a regionally accredited U.S. institution or (2) a tertiary (postsecondary) degree that is deemed comparable to a four-year bachelor's degree from a regionally accredited U.S. institution. This degree must be from an officially recognized degree-granting institution in the country in which it operates a bachelor's degree from a U.S. regionally accredited institution or a postsecondary degree that is equivalent to a U.S. baccalaureate degree earned from an officially recognized degree-granting international institution. Applicants with at least a 3.00 junior/senior grade-point average (on a 4.00 scale) and appropriate course backgrounds may be considered for admission. Exceptions to the minimum 3.00 grade-point average may be made for students with special backgrounds, abilities, and interests.

All applicants must provide the department with official transcripts of all their previous course work (in duplicate); international applicants must submit official transcripts, degree, and diploma certificates in both English and their native language. Photocopies will not be accepted. Applicants must also submit scores from the GRE® revised General Test (verbal reasoning, quantitative reasoning, and analytical writing), a statement of objectives, resume, and three letters of recommendation.

The language of instruction at Penn State is English. All international applicants must take and submit scores for the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), with the exceptions noted below. The minimum acceptable score for the TOEFL is 550 for the paper-based test, or a total score of 80 with a 19 on the speaking section for the Internet-based test (iBT). Applicants with iBT speaking scores between 15 and 18 may be considered for provisional admission, which requires completion of specified remedial English courses.
ESL 114G (American Oral English for Academic Purposes) and/or ESL 116G (ESL/Composition for Academic Disciplines) and attainment of a grade of B or higher. The minimum acceptable composite score for the IELTS is 6.5.

International applicants are exempt from the TOEFL/IELTS requirement who have received a baccalaureate or a graduate degree from a college/university/institution in any of the following: Australia, Belize, British Caribbean and British West Indies, Canada (except Quebec), England, Guyana, Republic of Ireland, Liberia, New Zealand, Northern Ireland, Scotland, the United States, and Wales.

Applicants for fall admission who wish to be considered for financial aid should complete the application process prior to DECEMBER 15 of the preceding year.

Degree Requirements

Master of Science (M.S.) Degree Requirements. The M.S. degree is an academic degree, which is strongly oriented toward research. To receive the Master of Science degree in Engineering Design, a student must complete at least 32 credits beyond the baccalaureate degree. At least 18 credits in the 500 and 600 series, combined, must be included in the program. A minimum of 12 credits in course work (400 and 500 series), as contrasted with research, must be completed in the major program. A thesis is required and at least 6 credits of thesis research (EDSGN 600/610) must be included in the program.

REQUIREMENTS FOR THE PROGRAM – 32 credits
A minimum of 32 graduate credits is required as follows: focus area elective courses (12 cr.), general electives (6 cr.), engineering design studio (6 cr.), engineering design portfolio (1 cr.), colloquium, (1 cr.), thesis research (6 cr.)

Students must take the following 8 credits: EDSGN 581 (3), EDSGN 582 (3), EDSGN 585 (1), EDSGN 590 (1)

Students must select a minimum of 12 credits of focus area electives from: EDSGN 401 (3), EDSGN 479 (3), EDSGN 547 (3), EDSGN 548 (3), EDSGN 549 (3), EDSGN 558 (3), EDSGN 559 (3)

Students must select 6 credits of general electives from: I E 418 (3), I E 460 (3), I E 470 (3), I E 520 (3), I E 557 (3), I E 563 (3), IST 413 (3), IST 520 (3), IST 521 (3), M E 561 (3), M E 565 (3); MANGT 510 (3); SYSEN 550 (3), SYSEN 555 (3) or from a list of approved courses maintained by the program

Students must take 6 credits of EDSGN 600/610

The M.S. in Engineering Design requires the completion of an M.S. thesis and the Engineering Design Portfolio.

Master of Engineering (M.Eng.) Degree Requirements. The M.Eng. degree is a non-thesis professional master’s degree that provides training for advanced professional practice. To receive the Master of Engineering degree in Engineering Design, a student must complete at least 32 credits beyond the baccalaureate degree, and a scholarly report based on an independent studies course (EDSGN 596), or a domestic (ENGR 595A) or international (ENGR 595I) internship experience, and an engineering design portfolio (ENGR 585). A minimum of 18 credits must be in the 500 series.

REQUIREMENTS FOR THE PROGRAM – 32 credits
A minimum of 32 graduate credits is required as follows: focus area elective courses (12 cr.), general electives (9 cr.), engineering design studio (6 cr.), engineering design portfolio (1 cr.), colloquium, (1 cr.), independent studies (3 cr.) or domestic or international internship (3 cr.)

Students must take the following 8 credits: EDSGN 581 (3), EDSGN 582 (3), EDSGN 585 (1), EDSGN 590 (1)

Students must select a minimum of 12 credits of focus area electives from: EDSGN 401 (3), EDSGN 479 (3), EDSGN 547 (3), EDSGN 548 (3), EDSGN 549 (3), EDSGN 558 (3), EDSGN 559 (3)

Students must select 9 credits of general electives from: I E 418 (3), I E 460 (3), I E 470 (3), I E 520 (3), I E 557 (3), I E 563 (3); IST 413 (3), IST 520 (3), IST 521 (3), M E 561 (3), M E 565 (3); MANGT 510 (3); SYSEN 550 (3), SYSEN 555 (3) or from a list of approved courses maintained by the program

Students must take EDSGN 596 (3 cr.), or ENGR 595A (3 cr.), or ENGR 595I (3 cr.)
The M.Eng. in Engineering Design requires the completion of a scholarly paper and the Engineering Design Portfolio.

**Other Relevant Information**
All graduate students must participate in *Scholarship and Research Integrity (SARI)* training by completing the online University module offered through the Office of Research Protections (ORP) during their first year of study and 5 hours of discussion-based training. To satisfy the 5-hour discipline-specific discussion-based training, SEDTAPP will provide 2 hours of training as part of their colloquium; the remaining 3 hours of training can be satisfied through College or ORP offerings. These requirements must be met before graduation.

**Student Aid**
Graduate assistantships and other forms of student aid are described in the **STUDENT AID** section of the *Graduate Bulletin*. International students must take AEOCPT and score between 250 and 300 in order to begin a teaching assistantship; students who require remediation may be assigned a teaching assistantship only after addressing the deficiencies identified by the test.

**Courses**
Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

[ENGINEERING DESIGN (EDSGN) course list](#)
Appendix A: Selected International Engineering Design Journals

Engineering Design is an interdisciplinary field of study. As a result, there are journals within each discipline that publish design-related research. In addition, there are a number of journals specific to the field of Engineering Design. A few of these are detailed below (along with publisher and impact factor, when readily available).

Journal of Engineering Design, Taylor & Francis (impact factor 0.93)
Design Studies, Elsevier (impact factor 1.48)
Research in Engineering Design, Springer (impact factor 1.24)
ASME Journal of Mechanical Design, ASME (impact factor 1.02)
International Journal of Engineering Design, Inderscience
Journal of Engineering, Design and Technology
Journal of Systems Engineering
IEEE Systems Journal (impact factor 0.923)

Appendix B: Selected International Engineering Design Organizations and Associations

Design Society
American Society of Mechanical Engineers (ASME), Design Engineering Division
Human Factors and Ergonomics Society
Institute of Industrial Engineers (IIE), Manufacturing and Design Division
International Council on Systems Engineering (INCOSE)
Institute of Electrical and Electronics Engineering (IEEE), Systems Council

Appendix C: Selected National and International Conferences on Engineering Design or with Design Tracks

American Society for Engineering Education (ASEE) Annual Conference
ASME International Design Engineering Technical Conferences (DETC)
ASME International Mechanical Engineering Congress and Exposition (IMECE)
Design Society’s Annual Design Theory Workshop
IEEE Interdisciplinary Engineering Design Education Conference (IEDEC)
International Conference on Engineering Design (ICED)
International Conference on Modeling and Management of Engineering Processes
International Conference on Engineering and Product Design Education
INCOSE Annual Conference on Systems Engineering Research (CSER)
IEEE International Systems Conference (SysCon)
Appendix D: Formal E-Mail Documentation of Consultation
FYI, my response to Chimay.

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
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Chief Technologist, Center for Space Research Programs

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Chimay

Thanks for your comments and support. Below please find answers to your questions.

1. I would like to see the following courses included in the proposal (unless they are embedded in other courses that have been proposed):
   a. Eco-Design OR Sustainability in Design – this should emphasize the importance of sustainability in design and how appropriate design enhances the long-term sustainability of both products and processes;
   b. Collaborative and Concurrent Engineering – this should address the issues associated with encapsulating the ‘voice of the customer’ in design, getting it right first time, collaborative and concurrent design, etc.;

These are very good suggestions for courses and are areas that would find broad support among our faculty. Elements of these courses are already embedded in several of our courses, but we will seek to develop and/or partner with other departments and institutes full courses in these domains as our program advances.

2. Is there provision for a Design Project/Thesis in the MS program? This would be useful for students from a variety of engineering disciplines to apply the generic principles that they learn in the program to the design of an artifact within their discipline.

The intent of the studio course sequence is to provide a significant design project experience for the students in the program. We see this as a two way street, i.e., that engineering design principles they are researching for their thesis would see application in this studio, and principles they learn from the studio will find application for design elements of their thesis.
Appendix D: Formal E-Mail Documentation of Consultation

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu

From: Chimay J. Anumba
Sent: Monday, November 19, 2012 9:55 AM
To: Sven Bilén
Subject: RE: Masters EDSGN Program Proposal

Hi Sven,

I have gone through the proposal and would offer the following comments:

1. I fully concur with the need for a new Masters Degree in Engineering Design. It is long overdue and is a welcome addition to the portfolio of courses within the College;

2. I would like to see the following courses included in the proposal (unless they are embedded in other courses that have been proposed):
   a. Eco-Design OR Sustainability in Design – this should emphasize the importance of sustainability in design and how appropriate design enhances the long-term sustainability of both products and processes;
   b. Collaborative and Concurrent Engineering – this should address the issues associated with encapsulating the ‘voice of the customer’ in design, getting it right first time, collaborative and concurrent design, etc.;

3. Is there provision for a Design Project/Thesis in the MS program? This would be useful for students from a variety of engineering disciplines to apply the generic principles that they learn in the program to the design of an artifact within their discipline.

I hope that the above are helpful. I would certainly encourage Architectural Engineering graduates to consider the Masters in Engineering Design.

Regards,
Chimay

From: Sven Bilén
Sent: Friday, November 02, 2012 5:27 PM
To: Andrew Zydnei; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!
Appendix D: Formal E-Mail Documentation of Consultation

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
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--
George,

Thank you for your comments and the support of the program proposal. Responses to your specific comments and questions are provided below.

Sven

Sven G. Bilén, Ph.D., P.E.
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Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
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-----Original Message-----
From: George A. Lesieutre
Sent: Wednesday, November 28, 2012 11:04 PM
To: Sven Bilén
Subject: Re: Masters EDSGN Program Proposal

Sven --

Sorry for the delayed response. I'm pleased to provide the following comments from aerospace engineering:

Aerospace Engineering generally supports this proposal. We think the proposed program could be made stronger and more inclusive; we provide some comments in that spirit.

"Engineering Design has coalesced into a field distinct from other engineering disciplines, having now its own: body of knowledge and abstracted practices that can be applied across disciplines; peer-reviewed journals; funding streams; and community of practitioners."

The same could be said of structures, control systems, and other disciplines that don't have distinct degree programs, at least not at Penn State. Perhaps design is more integrative than cross-cutting?
Appendix D: Formal E-Mail Documentation of Consultation

[Hi Bilén]

Integrative is a good term and represents what we are trying to accomplish with this degree. As an MS program, we also want to provide assurance that there is significant research potential in this field.

Apparently, some students and employers would like a master’s degree that indicates an explicit focus on design. (More than half of the sample job postings mention engineers from traditional engineering majors (IE, ME, CSE). The ones that explicitly seek people holding specialized, design-oriented degrees support the proposal more effectively.) We hope that a graduate minor might be introduced in the future for those students in conventional majors who might also like a design credential.

[Hi Bilén]

Others have also suggested a graduate minor and we will consider plans to propose this once the graduate program is up and running. Engagement of our students with graduate students from the programs will strengthen the program and enrich the students’ experience.

As the proposal indicates, some other universities offer graduate degree programs with a design focus. (It would be useful to know something about the placement of their graduates; we realize that info might not be available.) Many of these programs seem to be led out of ME programs, with very few core faculty members and courses. The unique structure of SEDTAPP at Penn State Engineering might make it well-suited to lead a successful interdisciplinary program of this kind.

[Hi Bilén]

You are correct that the other graduate degrees in design come out of ME programs. We are fortunate at Penn State to have SEDTAPP, which is a natural home for the program and should provide us with a differentiator from other programs.

The proposal implicitly creates a Graduate Faculty in Engineering Design. A large majority of the (proposed) program faculty members are from (or have joint appointments with) IE and ME. This program proposal would be stronger if it had broader faculty support and participation within the COE.

[Hi Bilén]

We welcome appointments from interested faculty and anticipate our affiliate faculty growing (currently at 6) as the program grows.

The “tracks” identified in the proposal are are perhaps most useful as illustrations of potential focus areas for prospective students, areas supported by multiple courses. (In several instances, listed courses will be offered for the first time this spring and others remain to be cross-listed.) Perhaps these tracks should be referred to as “examples,” leaving the door open for others in the future. For instance, the elective courses listed would support a track in structural/numerical optimization; a related course in civil engineering, CE 563 (Systems Optimization using Evolutionary Algorithms) could also be added. There may well be other relevant courses across the COE that could be included.

[Hi Bilén]

We have decided to change the term used to “areas” from “tracks”. Thanks for the suggestion of the course. We will add to the program description.

Engineering Product Design seems to be the most mature of the “tracks” described. This is consistent with the predominantly IE / ME composition of the proposed program faculty.

If the System Design track includes some emphasis on vehicle / systems architecting and integration, it will definitely be of interest to students with backgrounds in aerospace engineering. We know there is demand for this kind of background from employers. There appears to be a single course in this area, EDSGN 588. Additional courses would be useful, as would joint design / aerospace faculty members.

[Hi Bilén]

We anticipate the systems design area growing and welcome additional courses offered as joint.
In several places, the proposal addresses anticipated enrollments; however, these statements seem inconsistent or unclear. Perhaps the total master’s program size after a few years might be 10-15 students, growing to 20-30, with 10-15 incoming students each year?

[Sven Bilén] These have been made consistent. Your interpretation was correct.

Because the total student population is not anticipated to be large, perhaps the additional administrative burden will be marginal. And because of their formats, perhaps the new studio and portfolio courses will not require significant additional faculty time. The proposal indicates that SEDTAPP has the resources necessary to run the program, teach these courses and advise (new) graduate students who would not have otherwise come to Penn State.

[Sven Bilén] Graduate faculty in SEDTAPP have typically already taught one grad course per year in EDG5N (often crosslisted). Those that were not already formally approved are being so with this program proposal. While there will be additional resources required, these will be minimal due to the size of the anticipated program as well as leveraging what has already been established.

Finally, the proposal mentions “dissertation” committees -- these are applicable only to doctoral students. Furthermore, the Graduate School does not define master’s “committees,” also mentioned in the proposal. Perhaps master’s committees may be defined by individual programs, but we don’t have them in aerospace engineering.

[Sven Bilén] Thanks for pointing out this language. It will be changed in the program proposal.

In closing, we support approval of the proposed program, and are confident that it will be of interest to some graduates of aerospace engineering.

-George

******************************************************************************
George A. Lesieutre
Professor and Head, Aerospace Engineering Director, Center for Acoustics & Vibration Penn State University

******************************************************************************
+1-814-863-0103

On Nov 2, 2012, at 5:26 PM, Sven Bilen wrote:

> Colleagues,
> 
> Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!
> 
> Sven
> 
> Sven G. Bilén, Ph.D., P.E.
> Head, School of Engineering Design, Technology,
> and Professional Programs
> Associate Professor, Engineering Design, /\-._/
> Electrical Engineering, and Aerospace Engineering __/\
> Chief Technologist, Center for Space Research Programs (.) --
> ...........................................................................................................000-{_]}/ \ ---

28
From: Andrew Zydney
Sent: Friday, November 02, 2012 9:34 PM
To: Sven Bilen
Subject: RE: Masters EDSGN Program Proposal

Sven,

This looks like a well-formulated proposal for a new graduate program in Engineering Design. I don't think this will attract many Chemical Engineering students due to the absence of any focus on process design, but this could be very attractive to graduates of other engineering majors. Good luck!

Andrew

Andrew Zydney
Department Head and Walter L. Robb Family Chair Department of Chemical Engineering The Pennsylvania State University

From: Sven Bilen
Sent: Friday, November 02, 2012 5:26 PM
To: Andrew Zydney; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu http://csrp.psu.edu/>
Peggy,

Thanks for your comments to our proposal. Please see my responses to your comments and questions below:

1. It does not appear that this is intended for the world campus. Why not? It seems like that would be the way to go to cover costs and reach the intended audience.

In order to offer a compelling online program, we first need to establish a resident graduate program that then can be more easily be extended to online offerings. Once established, we will explore online revenue offerings.

2. It looks like 4 or so new classes will need to be created in EDSGN. What is the intent for who will do that?

Actually, one “new” class has already been offered as 597 (proposed as EDSGN 558 Systems Design) three times and was already planned to be a permanent offering. Hence, only 3 new classes need to be created, and these are the studio and the portfolio, which will be collaboratively offered by the faculty in the program.

3. Why are only IE and ME included in technical electives? Don’t all areas of engineering do design? This will certainly limit the applicant pool, which may or may not be an issue. Along that line of thought, I don’t understand this sentence from part J. “The program would also complement the focus on larger-scale systems in aerospace, architectural, civil, and electrical engineering.” How so? Doesn’t IE do larger scale systems, too?

We are in the process of expanding the electives. We would be happy to consider your suggestions for additional electives.

That was an oversight and we will update IE in the list in part J.

4. Given that each of the engineering disciplines have design-related graduate degrees, if an employer was looking for a design engineer, why would he/she hire someone with an MS in Design rather than an MS in ME?

Design is indeed fundamental to engineering and each of the disciplines practices it generally as discipline-specific design (e.g., turbine design, circuit design, bridge design). A graduate program in Engineering Design is targeted at those interested in an experience that is distinct from the discipline-specific design in the existing programs and to employers looking to hire an engineering designer versed in broader design methods built upon a base in the traditional disciplines (see sample job postings provided in the proposal). In addition, students will conduct research in the discipline of Engineering Design, focusing on topics such as those listed in the proposal. For example, the physics of turbine design, which might be an appropriate topic for an MS thesis in Mechanical Engineering, would be less appropriate in Engineering Design. However, conducting research into the processes used to design components such as turbines and integrate them into a larger system would be an appropriate topic within engineering design.

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology
From: Peggy Johnson  
Sent: Wednesday, November 07, 2012 10:37 AM  
To: Sven Bilen  
Subject: RE: Masters EDSGN Program Proposal

Sven,

Interesting proposal! Below are my comments:

1. It does not appear that this is intended for the world campus. Why not? It seems like that would be the way to go to cover costs and reach the intended audience.
2. It looks like 4 or so new classes will need to be created in EDSGN. What is the intent for who will do that?
3. Why are only IE and ME included in technical electives? Don’t all areas of engineering do design? This will certainly limit the applicant pool, which may or may not be an issue. Along that line of thought, I don’t understand this sentence from part J. “The program would also complement the focus on larger-scale systems in aerospace, architectural, civil, and electrical engineering.” How so? Doesn’t IE do larger scale systems, too?
4. Given that each of the engineering disciplines have design-related graduate degrees, if an employer was looking for a design engineer, why would he/she hire someone with an MS in Design rather than an MS in ME?

Peggy

From: Sven Bilen  
Sent: Friday, November 02, 2012 5:27 PM  
To: Andrew Zydney; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya  
Cc: Renata S. Engel  
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.  
Head, School of Engineering Design, Technology, and Professional Programs  
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering  
Chief Technologist, Center for Space Research Programs  
---------ooO-(_)-_/ \ ---
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http://sedtapp.psu.edu/~sbilen http://csp.ts.psu.edu  
---
From: Sven Bilén  
Sent: Monday, November 26, 2012 7:08 PM  
To: Raj Acharya - Forward  
Subject: RE: Masters EDSGN Program Proposal  

Raj, 

Thank you for your support. 

Sven  

Sven G. Bilén, Ph.D., P.E.  
Head, School of Engineering Design, Technology,  
and Professional Programs  
Associate Professor, Engineering Design,  
Electrical Engineering, and Aerospace Engineering 
Chief Technologist, Center for Space Research Programs  

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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu

From: Raj Acharya - Forward  
Sent: Monday, November 26, 2012 11:43 AM  
To: Sven Bilén  
Subject: Re: Masters EDSGN Program Proposal  

I support the Masters EDSGN Program Proposal. 

Raj-- 

Raj Acharya  
Professor & Head  
Computer Science & Engineering  
The Pennsylvania State University  
University Park, PA 16802-6822  
(814) 865 0301  
http://www.cse.psu.edu/~acharya

From: Sven Bilén <SBilen@engr.psu.edu>  
Date: Wednesday, November 21, 2012 7:47 PM  
To: Raj Acharya <acharya@engr.psu.edu>  
Subject: FW: Masters EDSGN Program Proposal  

Raj,
Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: Sven Bilén
Sent: Friday, November 02, 2012 5:27 PM
To: Andrew Zydney; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal
From: Sven Bilen
Sent: Sunday, November 18, 2012 9:25 PM
To: Kultegin Aydin
Cc: Sven Gunnar Bilén (sbilen@psu.edu)
Subject: RE: Masters EDSGN Program Proposal

Dear, Kultegin,

Thank you for your support of our program.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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From: Kultegin Aydin
Sent: Thursday, November 08, 2012 11:49 AM
To: Sven Bilen
Subject: RE: Masters EDSGN Program Proposal

Sven,

The proposed program looks very interesting. The Electrical Engineering Department does not have any suggestions or objections.

Good luck,

Kultegin

Kultegin Aydin
Professor and Department Head
Department of Electrical Engineering
The Pennsylvania State University
129 EE East Building
University Park, PA 16802
(814)863-2788 Fax: (814)865-7065
Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu
Dear Sven

ESM supports your proposal for a MS degree in Engineering Design.

Best wishes

Judy

Professor Judith A. Todd, Department Head
P. B. Breneman Chair and Professor of Engineering Science and Mechanics
Department of Engineering Science and Mechanics
The Pennsylvania State University
212 Earth and Engineering Sciences Building
University Park, PA 16802-6812
(814) 863-0771
(814) 865-9974
jtodd@psu.edu
www.esm.psu.edu

From: Sven Bilen
Sent: Friday, November 02, 2012 5:27 PM
To: Andrew Zydny; Cheng Dong; Chimay J. Anumba; George A. Leslieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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From: Paul Griffin
Sent: Friday, November 02, 2012 5:29 PM
To: Sven Bilen
Subject: Re: Masters EDSGN Program Proposal

Congrats Sven...it is great to see this proposal. You know that you have my support.

paul

From: Sven Bilen <Sbilen@engr.psu.edu>
Date: Friday, November 2, 2012 5:26 PM
To: Andrew Zydney <zydney@engr.psu.edu>, Cheng Dong <cxdbio@engr.psu.edu>, "Chimay J. Anumba" <anumba@engr.psu.edu>, "George A. Lesieutre" <gal4@engr.psu.edu>, Judith Todd <JTodd@engr.psu.edu>, Karen Thole <kthole@engr.psu.edu>, Kultegin Aydin <aydin@engr.psu.edu>, Paul Griffin <pmsg14@engr.psu.edu>, Paul Heinemann <hzh@engr.psu.edu>, Peggy Johnson <PAJ6@engr.psu.edu>, Raj Acharya <scharya@engr.psu.edu>
Cc: "Renata S. Engel" <rengel@engr.psu.edu>
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design,
   Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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37
From: Sven Bilen
Sent: Monday, November 19, 2012 8:26 AM
To: Karen Thole
Cc: Renata S. Engel
Subject: RE: Masters EDSGN Program Proposal

Importance: High

Karen,

Thanks for your comments to our proposal. Please see my responses to your comments and questions below:

Comment 1 – How confident can one be on the marketing of the MEng degree vs the MS degree? We are concerned that the proposed degree program is already one that will not be along the traditional fields such that potential employers will need to be educated. If one mixes the MEng aspect into it, there may be further confusion given many employers do not recognize MEng degree programs.

We are modeling the engineering design master’s program after other established CoE master’s programs, most of which include an MEng option (e.g., Aero, EE, and IE) in addition to the primary offering of the MS. We feel that the MEng provides flexibility for students, some of whom may come from industry.

Employers are looking for this type of degree (e.g., see the sample job postings in the proposal), in which interdisciplinary and multidisciplinary are integral to the degree offering. Hence, while some education of employers may be necessary, we feel that employers are already seeking applicants with the degree that we plan to offer.

Comment 2 – What are the real differences between the MS and MEng degrees with regards to a thesis vs a scholarly paper? How will the scholarly paper be judged to ensure quality?

We are modeling after existing CoE programs and our graduate faculty have advised both MS and MEng students through other CoE graduate programs. As such, they have familiarity with ensuring the quality of the scholarly paper (as well as theses).

Comment 3 – Are the systems design courses overlapping with those already offered through Great Valley’s program? There also seems like there would be significant overlap between 507 and 558.

The EDSGN 558 course offered at UP has limited overlap with other courses offered in the SYSEN program at Great Valley. SYSEN 507 is focused on mindset (“system thinking”) whereas 558 focuses on the process of systems design.

Comment 4 – Given the ever increasing enrollments of our undergraduates in the College, is there certainty the needs will be met while not imposing additional faculty loads to bring on a new program? What will be the criteria used to cancel courses if need be due to low enrollments in the graduate courses?

These graduate courses are already being offered by EDSGN T&TT faculty who hold graduate appointments, and are healthily enrolled. Three additional classes not currently offered are proposed and these will be covered collaboratively by the graduate faculty as they represent the studio and portfolio within the graduate program. The EDSGN T&TT
Comment 5 – Regarding the admission requirements, are all engineering majors qualified? It would appear that some would have difficulty given the lack of design in the curriculums for ChemE, CS, and others.

The admissions committee will be making admission decisions based on an assessment of the applicants’ undergraduate coursework and other design-related experiences to include curricular and co-curricular experiences, work experiences, etc.

Comment 6 – It would be helpful if the proposal also listed how the interactions might take place with existing design efforts such as CRDI, CEDE, and the efforts in Arts and Architecture.

Thanks for this comment, and we will make sure that this additional information is included in the proposal. These certainly are strong interactions that will be strengthened with the addition of the graduate program.

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: Karen Thole
Sent: Wednesday, November 07, 2012 12:23 PM
To: Sven Bilén
Cc: Renata S. Engel; kthole@psu.edu
Subject: RE: Masters EDSGN Program Proposal

Hello Sven,

Attached are our comments regarding your proposal. Please let me know if you have any questions about our comments.

Karen

Karen A. Thole, Professor and Department Head
Department of Mechanical and Nuclear Engineering
The Pennsylvania State University
136 Reber Building, University Park, PA 16802-1412
(814)865-2519 FAX (814)865-1280
kthole@psu.edu www.mne.psu.edu
From: Sven Bilen  
Sent: Friday, November 02, 2012 5:27 PM  
To: Andrew Zydny; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya  
Cc: Renata S. Engel  
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven  
Sven G. Bilén, Ph.D., P.E.  
Head, School of Engineering Design, Technology, and Professional Programs  
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering  
Chief Technologist, Center for Space Research Programs  
The Pennsylvania State University  
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(814) 863-1526 FAX (814) 863-7229 sbilen@psu.edu  
http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu
Hi Sven,

The Department of Agricultural and Biological Engineering supports your proposal and has no concerns. Some of the ABE graduate students may be interested in a couple of the graduate level EDSGN courses.

Paul

On Nov 2, 2012, at 5:26 PM, Sven Bilen wrote:

Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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<edsgn_ms_prog_121102.pdf>

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Paul Heinemann, Professor and Head
Department of Agricultural and Biological Engineering
Penn State
814-865-2633
Sherry Walk

From: Sven Bilen
Sent: Monday, November 26, 2012 9:09 AM
To: Cheng Dong
Subject: RE: Masters EDSGN Program Proposal

Cheng,

Thanks for your support.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
The Pennsylvania State University
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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu

From: Cheng Dong
Sent: Friday, November 23, 2012 9:27 AM
To: Sven Bilen
Subject: Re: Masters EDSGN Program Proposal

Sven,

Thanks for forwarding the proposal to me. I read it and concurred with your proposed contents.

It does not appear to affect Bioengineering.

We will be supportive.

Regards,
Cheng

---

Cheng Dong, Ph.D.
Distinguished Professor of Bioengineering
Head, Department of Bioengineering
233 Hallowell Building
The Pennsylvania State University
University Park, PA 16802
tel: (814) 865-8091
Fax: (814) 863-0490
Email: cxd23@psu.edu
URL: http://bioeng.psu.edu/faculty/Dong.html

From: COE-DEPT-SEDTAPP Sven Bilen <Sbilen@engr.psu.edu>
Date: Wednesday, November 21, 2012 7:48 PM
Appendix D: Formal E-Mail Documentation of Consultation
To: Cheng Dong <cxdbio@engr.psu.edu>
Subject: RE: Masters EDSGN Program Proposal

Cheng,

Sorry, forgot to change the name on the request below. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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From: Sven Bilén
Sent: Wednesday, November 21, 2012 7:46 PM
To: Cheng Dong
Subject: FW: Masters EDSGN Program Proposal

George,

Graduate program proposal consultations require response. Can you please provide this to me asap? Thanks and Happy Thanksgiving.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
The Pennsylvania State University
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http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu

From: Sven Bilén
Sent: Friday, November 02, 2012 5:27 PM
To: Andrew Zydny; Cheng Dong; Chimay J. Anumba; George A. Leslieutre; Judith Todd; Karen Thole; Kultegin Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master’s degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

43
Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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(814) 863-1526  FAX (814) 863-7229  sbilen@psu.edu
http://sedtapp.psu.edu/~sbilen  http://csrp.psu.edu
Jim,

Thanks for your comments. We'll fold them in.

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design, Chemical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: Jablokow, Kathryn [mailto:kw3@psu.edu]
Sent: Monday, November 05, 2012 11:22 AM
To: Nemes, James; Sven Bilen
Subject: RE: Masters EDSGN Program Proposal

Sven and Jim,

I'm assuming we can cross-list courses (SYSEN/EDSGN 507, e.g.). We did that with ME/IE 456 and ME/IE 556.

Thanks,
Kathryn

From: Nemes, James
Sent: Monday, November 05, 2012 11:16 AM
To: Sven Bilen
Cc: Jablokow, Kathryn
Subject: RE: Masters EDSGN Program Proposal

Sven, I'll get you a letter shortly. A couple things I noticed that you might want to look at.

1) The committees will want to know which of these courses are new and which are existing. Should state explicitly which are new. I'm also not sure how those committees would view renaming existing courses such as the SYSEN 507 course to be EDSGN.
2) They will look for a scheduling pattern of courses. – I didn’t see it in there, but might have missed it.
3) Should update the TOEFL requirements to the new test.

If I see any others I'll let you know Wednesday.
From: Sven Bilén [mailto:SBilen@engr.psu.edu]
Sent: Saturday, November 03, 2012 9:30 PM
To: James Nemes (jan16@psu.edu)
Cc: Jablokow, Kathryn
Subject: FW: Masters EDSGN Program Proposal

Jim,

It's in for consultation. I would also appreciate yours, as well as the letter of support we discussed (particularly with the SYSEN courses). Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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(814) 863-1526 FAX (814) 863-7229 sbilen@psu.edu
http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu

From: Sven Bilén
Sent: Friday, November 02, 2012 5:27 PM
To: Andrew Zydney; Cheng Dong; Chimay J. Anumba; George A. Lesieutre; Judith Todd; Karen Thole; Kultegein Aydin; Paul Griffin; Paul Heinemann; Peggy Johnson; Raj Acharya
Cc: Renata S. Engel
Subject: Masters EDSGN Program Proposal

Colleagues,

Attached is a program proposal for a master's degree program in Engineering Design. I would appreciate your consultation on this proposal in a timely manner. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
From: Sven Bilen
Sent: Tuesday, December 11, 2012 8:41 AM
To: Gary Messing
Subject: RE: Consultation request for graduate program in engineering design

Gary,

Thanks for your comments and support.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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From: Gary Messing [mailto:messing@ems.psu.edu]
Sent: Monday, December 10, 2012 9:50 PM
To: Sven Bilen
Subject: Consultation request for graduate program in engineering design

Dr. Bilen,

I've read the proposal to create a new masters program in Engineering Design. The subject seems timely and representative of the type of new degree that is needed in certain sectors of industry. I doubt that it will attract many Materials Science and Engineering students but I'm happy that such a degree is possible for our graduates who find they are more interested in product conceptualization and design.

All the best,
Gary

At 10:11 PM 11/26/2012, you wrote:

-------- Original Message --------
Subject: Consultation request for graduate program in engineering design
Date: Tue, 27 Nov 2012 02:23:42 +0000
From: Sven Bilen <SBilen@engr.psu.edu>
To: glm2@psu.edu <glm2@psu.edu>
CC: Sven Gunnar Bilén (sbilen@psu.edu) <sbilen@psu.edu>
In accordance with established procedures, we are seeking input (curricular consultation) with regard to our proposal to establish a graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees. If you find the attached program proposal to be acceptable, please indicate your concurrence via reply email. Likewise, if you have any comments or concerns, let me know. If you discuss this proposal with others, please identify the individual(s) or faculty committee. To expedite the processing of this proposal, your prompt response will be appreciated. Thank you.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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John,

Thanks for your comments and support. To answer your questions:

a) have you considered including IE 424 in your curriculum?

We will assess whether this course fits within the curriculum as a potential elective.

b) Have you had any discussions with World Campus? I suggest that discussing this proposal with Ann Taylor (Director of e-Dutton Institute) could be useful early on if the intent is there to expand to World Campus later on. She would have some excellent perspectives.

We have had some preliminary discussion with World Campus and thank you for the additional contact. Any extension to online offerings requires the resident program to be established first.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: John Hellmann [mailto:jrh3@psu.edu]
Sent: Tuesday, December 11, 2012 3:39 PM
To: Sven Bilen
Subject: Re: Consultation request for graduate program in engineering design

Sven,

Sorry for the delay. I was out of town when you sent the proposal around, and am just now "getting back in the saddle."

The College of Earth and Minerals Science supports your proposal. It looks very interesting, and I believe the program will populate well.

A couple of quick questions:

a) have you considered including IE 424 in your curriculum?
b) Have you had any discussions with World Campus? I suggest that discussing this proposal with Ann Taylor (Director of e-Dutton Institute) could be useful early on if the intent is there to expand to World Campus later on. She would have some excellent perspectives.

Best,

John Hellmann

On 12/10/2012 8:06 PM, Sven Bilén wrote:

Assoc. Dean Hellmann,

It has been two weeks since this this request went out and a wondering if you have been able to complete this consultation? As this is a graduate program proposal, I must receive responses to all consultation requests. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: Sven Bilén
Sent: Monday, November 26, 2012 9:28 PM
To: 'jrh3@psu.edu'
Cc: Sven Gunnar Bilén (sbilen@psu.edu); 'rqs8@psu.edu'
Subject: Consultation request for graduate program in engineering design

Assoc. Dean Hellmann,

In accordance with established procedures, we are seeking input (curricular consultation) with regard to our proposal to establish a graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees. If you find the attached program proposal to be acceptable, please indicate your concurrence via reply email. Likewise, if you have any comments or concerns, let me know. If you discuss this proposal with others, please identify the individual(s) or faculty committee. To expedite the processing of this proposal, your prompt response will be appreciated. Thank you.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
John R. Hellmann
Associate Dean for Graduate Education and Research
Professor of Materials Science and Engineering
College of Earth and Mineral Sciences
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University Park, PA 16802
(814) 865-7659
(814) 863-7809 (fax)
jrh3@psu.edu
Appendix D: Formal E-Mail Documentation of Consultation

Sherry Walk

From: Sven Bilen
Sent: Friday, December 07, 2012 11:52 AM
To: Victor W. Sparrow; Sven Gunnar Bilén (sbilen@psu.edu)
Subject: RE: Consultation request for graduate program in engineering design

Vic,

Thanks for your review and your support.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs
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From: Victor W. Sparrow
Sent: Friday, December 07, 2012 10:58 AM
To: Sven Bilen; Sven Gunnar Bilén (sbilen@psu.edu)
Cc: vws1@psu.edu
Subject: Re: Consultation request for graduate program in engineering design

Sven,

The Graduate Program in Acoustics supports this idea. We have found that interdisciplinary niche graduate programs can be very successful. Your proposal seems reasonable. Good luck in moving forward with this initiative.

Thanks,
Vic

--

Victor W. Sparrow
Interim Head, Graduate Program in Acoustics
Professor of Acoustics
Penn State
201 Applied Science Bldg.
University Park, PA 16802 USA
+1 (814) 865-3162
+1 (814) 865-7595 FAX
vws1@psu.edu

From: Sven Bilen <SBilen@engr.psu.edu>
Date: Monday, November 26, 2012 9:25 PM
To: Victor Sparrow <vws1@psu.edu>
Appendix D: Formal E-Mail Documentation of Consultation
Cc: "Sven Gunnar Bilén (sbilen@psu.edu)" <sbilen@psu.edu>
Subject: Consultation request for graduate program in engineering design

Vic,

In accordance with established procedures, we are seeking input (curricular consultation) with regard to our proposal to establish a graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees. If you find the attached program proposal to be acceptable, please indicate your concurrence via reply email. Likewise, if you have any comments or concerns, let me know. If you discuss this proposal with others, please identify the individual(s) or faculty committee. To expedite the processing of this proposal, your prompt response will be appreciated. Thank you.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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Appendix D: Formal E-Mail Documentation of Consultation

Sherry Walk

From: Sven Bilén
Sent: Wednesday, December 12, 2012 10:49 AM
To: PETER IDOWU
Cc: Sven Bilén
Subject: RE: Consultation request for graduate program in engineering design

Peter,

Thank you for your comments and support. As mentioned in my response to the Head of the A E Department, we will seek to add courses that include sustainable design as they are developed throughout the university and perhaps in response to sustainability initiatives underway. These elements are also included at various levels in the course offerings themselves.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology,
and Professional Programs
Associate Professor, Engineering Design,
Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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FROM: PETER IDOWU [mailto:pbi@psu.edu]
SENT: Tuesday, December 11, 2012 10:15 AM
TO: Sven Bilén
SUBJECT: Re: Consultation request for graduate program in engineering design

Dear Sven,

Sorry for the delay in getting back to you. Dr. Rick Ciocci from our mechanical engineering unit reviewed the proposal, as well as Dr. Sedig Agili, Director for our MS/EE, M.Eng./EE, M.Eng./ESC and MPS/EM programs.

We are supportive of the initiative and the proposal, and do not envision it affecting Penn State Harrisburg or its students in any way.

There are concerns however over a lack of requirement on sustainable design principles, given the likelihood that students in this program will deal with sustainable designs at some point. The Head of the A E Department made a similar comment on program requirements.

We hope you find this feedback helpful.

Regards,
Peter

54
From: "Sven Bilen" <SBilen@engr.psu.edu>
To: pbi1@psu.edu
Sent: Monday, December 10, 2012 8:04:35 PM
Subject: RE: Consultation request for graduate program in engineering design

Prof. Peter Idowu,

It has been two weeks since this request went out and I am curious if you have been able to complete this consultation. As this is a graduate program proposal, I must receive responses to all consultation requests. Thanks!

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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From: Sven Bilen
Sent: Monday, November 26, 2012 9:22 PM
To: 'pbi1@psu.edu'
Subject: Consultation request for graduate program in engineering design

Prof. Peter Idowu,

In accordance with established procedures, we are seeking input (curricular consultation) with regard to our proposal to establish a graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees. If you find the attached program proposal to be acceptable, please indicate your concurrence via reply email. Likewise, if you have any comments or concerns, let me know. If you discuss this proposal with others, please identify the individual(s) or faculty committee. To expedite the processing of this proposal, your prompt response will be appreciated. Thank you.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Graeme,

My apologies for delay in sending out response to your consultation initiated by Tim Simpson. Thank you for reviewing the proposal - you hit the nail right on the head. The Colloquium (EDSGN 590) and Design Studios (EDSGN 581 & 582), along with the subsequent M.S. thesis, will be the "glue" that provides this context, exposes them to a broader array of thinking about design, and challenges them to apply methods and theories from different domains to advance their ideas. There is a strong push in engineering right now to focus less on "problem solving", as you allude to, and more on "problem framing" or "problem discovery", which is exactly what we hope to achieve through this program. SEDTAPP is uniquely positioned to accomplish this since we are not a traditional engineering department (e.g., electrical engineering, mechanical engineering), and we hope to leverage the wide range of design expertise that have found across colleges through our collaborations these past years. For example, the Design Summit that you attended in the Learning Factory was our first attempt to find out who is doing what and create these partnerships to help advance all of the design-related work that we are trying to accomplish. We hope to continue engaging you in these discussions and thank you for your valuable input.

Sincerely,

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering Chief Technologist, Center for Space Research Programs

*********************************************************ooO(-_-)/ \ --- The Pennsylvania State University ""| ** | 213B Hammond Building, University Park, PA 16802-1401 | ** |
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-----Original Message-----
From: GRAEME LESLIE SULLIVAN [mailto:gls27@psu.edu]
Sent: Tuesday, March 12, 2013 8:02 PM
To: Timothy Simpson
Cc: NATHANIEL QUINCY BELCHER (nqb3@psu.edu); Sven Bilen; reh29@psu.edu; MEHRDAD HADIGHI
Subject: Re: Graduate Council curricular review action on Engineering Design proposal

Hi Tim,

It’s good news that you’ve been able to put the Engineering Design Program together. The curriculum looks comprehensive and although I don’t know the scope of the coursework landscape across the Engineering disciplines, the liberal sprinkling of terms such as context, cross-disciplinary, and of course problem solving, suggests an outward looking perspective. Yet, ‘problem solving’ tends to consolidate issues and problems within discipline parameters. Given the thesis focus of the proposed M.S. it seems a good opportunity to pick up on the spirit of design discussion that has been percolating across Colleges in recent times. Although there isn’t much detail in the proposal about the content/method of the Colloquium or the Design Studio courses, achieving a breadth of theoretical and purposeful perspective, while simultaneously sharpening focus would be an ideal stance to achieve. In part I’m reiterating Mehrdad’s point about potential theoretical and conceptual connections across fields and disciplines and thinking of the benefits of students in your program being exposed to these disruptive contexts at some point.

Graeme

----- Original Message ----- 
From: "Timothy Simpson" <tws8@engr.psu.edu>
To: "MEHRDAD HADIGHI" <mzh11@psu.edu>
Cc: "NATHANIEL QUINCY BELCHER (nqb3@psu.edu)" <nqb3@psu.edu>, "Sven Bilen" <SBilen@engr.psu.edu>, "Graeme Sullivan" <gls27@psu.edu>, reh29@psu.edu
Sent: Tuesday, March 12, 2013 5:14:26 PM
Subject: Re: Graduate Council curricular review action on Engineering Design proposal

Thanks Mehrdad! You raise a very important point, and I'll work with Sven and the team to prepare a response as to how we will address this.

-Tim
Sent from my iPhone

On Mar 12, 2013, at 12:12 PM, "MEHRDAD HADIGHI" < mzh11@psu.edu > wrote:

Dear Tim, Thanks for sharing this proposal. I am pleased to see it, and support its progress towards approval.
The only thing that sticks out is the lack of courses in philosophy/theory/criticism of design. In a way, something that would tie this body of knowledge to a larger conversation about design that may be happening in architecture or landscape, visual arts, graphic design, philosophy,...

Thanks for the opportunity. M

Mehrdad Hadighi
Professor and Head
Department of Architecture
Stuckeman Chair of Integrative Design
The Pennsylvania State University
----- Original Message -----

From: "Timothy Simpson" < tws8@engr.psu.edu >
To: "MEHRDAD HADIGHI" < mzh11@psu.edu >, "Graeme Sullivan" < gls27@psu.edu >, reh29@psu.edu
Cc: "NATHANIEL QUINCY BELCHER ( nqb3@psu.edu )" < nqb3@psu.edu >, "Sven Bilen" < SBilen@engr.psu.edu >
Sent: Thursday, March 7, 2013 9:50:44 AM
Subject: FW: Graduate Council curricular review action on Engineering Design proposal

Mehrdad, Graeme, and Ron-
Hi there. As I shared with you earlier this Fall, we are putting forth a proposal to start a M.S. program in Engineering Design in the College of Engineering.

A copy of the proposal is attached, and we have been asked to get formal feedback from other programs outside of the College of Engineering now that it is under review at the university level by the graduate school. In fact, I think Andy Cole is chairing the program review committee.

This program would be housed in the School of Engineering Design, Technology, and Professional Programs (http://www.sedtapp.psu.edu/index.php), which coordinates our first-year engineering design program and numerous engineering design electives and minors, so that it is independent of any specific department (e.g., mechanical, electrical). The goal is to use this program to establish bridges in design-related disciplines at the graduate level across colleges much like we have started to do at the undergraduate level. For example, it would be an ideal partner for the IDGP PhD in Design that was discussed last Spring.

We would appreciate any feedback (e.g., yeah/nay, looks good, add this, etc.) from you by Friday, March 15th so that I can share it with Sven Bilen, the SEDTAPP Dept Head who is coordinating the response to the graduate school. Thanks!

Hope you are all having a good Spring Break!

-Tim

From: Sven Bilen
Sent: Thursday, March 07, 2013 9:21 AM
To: Timothy Simpson
Cc: Sherry Walk
Subject: RE: Graduate Council curricular review action on Engineering Design proposal

Tim, thanks. Here ya go.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, \_\_/ | \_\_/ |
Electrical Engineering, and Aerospace Engineering \___/
Chief Technologist, Center for Space Research Programs (..) --
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(814) 863-1526 FAX (814) 863-7229 sbilen@psu.edu /
http://sedtapp.psu.edu/~sbilen http://csrp.psu.edu --
Ron Henderson,

Tim Simpson forwarded to me the consultation request to you. I have cc'ed him on my reply.

Thanks for reviewing our proposal for a M.S. in Engineering Design and for your support of the proposed program. In response to your 1st comment, we have been closely following the “critique” methods that you all use in Studio in Arts & Architecture, and agree that we will use these in the design studios (EDSGN 581 & 582) as a way to integrate and assess a wide array of criteria, including aesthetics, ethics, sustainability, etc. We plan to actively engage the faculty collaborators that we’ve found in Arts & Architecture (and other colleges) to help with this assessment (e.g., participate directly in our critiques and project reviews), as engineers are not usually known for their aesthetic prowess. We will continue to work with the COE’s Leonhard Center on effectively incorporating ethics into our curricula.

As for your 2nd comment, the Systems Thinking (SYSEN 507), Systems Design (EDSGN 558), and Design for Human Variability (EDSGN 547) courses emphasize the contextual factors and environmental aspects that influence design beyond the “human” elements typically encountered in engineering design. These “non-human” ecologies may also be woven into the design studios (EDSGN 581 & 582) depending on the projects. We have had some experience with this, from an engineering perspective, through our participation in the Global Engineering Teams program headed by TU Berlin and Stellenbosch University in South Africa. Finally, we would be happy to list any relevant courses from LArch (and Arch, Civil Engineering, and others) in the General Electives categories to widen the scope of students that could participate.

I hope these comments address your questions, and thanks again for the feedback! We will keep you appraised as the program moves forward.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
-----Original Message-----
From: Timothy Simpson  
Sent: Wednesday, August 07, 2013 7:02 PM  
To: Sven Bilen  
Subject: FW: Graduate Council curricular review action on Engineering Design proposal

Sven-

Here is Ron Henderson's (Head, Landscape Architecture) response to the friendly review that I asked him to perform of our proposal for a M.S. in Engineering Design last Spring. Please be sure to take his comments into consideration as you revise the proposal. Thanks!

-Tim

From: Ron Henderson [mailto:reh29@psu.edu<http://psu.edu>]
Sent: Thursday, March 07, 2013 11:46 AM
To: Timothy Simpson
Subject: Re: Graduate Council curricular review action on Engineering Design proposal

Tim,

Thank you for the opportunity to comment on the proposal for the new M.S. program in Engineering Design. On behalf of the Department of Landscape Architecture, I express support for this proposal with the comments below:

1. "Design" is distinguished from other methods of inquiry in part by the emphasis on the "critique." It is in the critique that an array of aesthetic and ethical criteria can be interjected into the assessment of the project. What courses in your proposal address aesthetics? What courses address ethics? For the latter, I read comments from other reviewers about sustainability but I see that topic as a subset, perhaps, of ethics.
2. What, if any, integrative courses would be able to specifically address "non-human" ecologies in design? This is a fundamental question in landscape architecture design and practice that might contribute to the question of ethics. Such courses would be a path for landscape architects with research on engineering systems (tectonic, hydrological, biological, and others) to engage the major.

Respectfully,
Ron

Mehrdad, Graeme, and Ron-

Hi there. As I shared with you earlier this Fall, we are putting forth a proposal to start a M.S. program in Engineering Design in the College of Engineering.

A copy of the proposal is attached, and we have been asked to get formal feedback from other programs outside of the College of Engineering now that it is under review at the university level by the graduate school. In fact, I think Andy Cole is chairing the program review committee.

This program would be housed in the School of Engineering Design, Technology, and Professional Programs (http://www.sedtapp.psu.edu/index.php), which coordinates our first-year engineering design program and numerous engineering design electives and minors, so that it is independent of any specific department (e.g., mechanical, electrical). The goal is to use this program to establish bridges in design-related disciplines at the graduate level across colleges much like we have started to do at the undergraduate level. For example, it would be an ideal partner for the IDGP PhD in Design that was discussed last Spring.

We would appreciate any feedback (e.g., yeah/nay, looks good, add this, etc.) from you by Friday, March 15th so that I can share it with Sven Bilen, the SEDTAPP Dept Head who is coordinating the response to the graduate school. Thanks!

Hope you are all having a good Spring Break!

-Tim

From: Sven Bilen
Sent: Thursday, March 07, 2013 9:21 AM
To: Timothy Simpson
Cc: Sherry Walk
Subject: RE: Graduate Council curricular review action on Engineering Design proposal
Tim, thanks. Here ya go.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering
Chief Technologist, Center for Space Research Programs

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The program described in the email is acceptable - I have no objections or revisions.
Stephanie

Stephanie L. Knight
Associate Dean, Undergraduate and Graduate Education Professor, Department of Educational Psychology

278 Chambers Building
University Park, PA 16802
Office: 814 865 2524
Fax: 814 865 0555
slk44@psu.edu
www.ed.psu.edu

On Sep 23, 2013, at 9:42 PM, Sven Bilen <SBilen@engr.psu.edu> wrote:

> <EDSGN Masters Program Proposal 130918.doc>
Dear Assoc. Dean Knight,

In accordance with a request from the Subcommittee on New and Revised Programs and Courses, we are seeking input (curricular consultation) with regard to our proposal to establish a graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees. If you find the attached program proposal to be acceptable, please indicate your concurrence via reply email. Likewise, if you have any comments or concerns, let me know. If you discuss this proposal with others, please identify the individual(s) or faculty committee.

One of the reasons the Subcommittee was specifically looking for input from the College of Education may be related to the recent requested crosslisting of WF ED 405 / ENGR 405 Project Management for Professionals. Renata Engel has indicated she can also help answer any questions you may have.

To expedite the processing of this proposal, your prompt response will be appreciated. Thank you.

Sven

Sven G. Bilén, Ph.D., P.E.
Head, School of Engineering Design, Technology, and Professional Programs
Associate Professor, Engineering Design, Electrical Engineering, and Aerospace Engineering Chief Technologist, Center for Space Research Programs

-----------------------------ooO-(_=)_/-- The Pennsylvania State University
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--
Dr. Renata Engel  
Associate Dean for Academic Programs  
College of Engineering  
The Pennsylvania State University  
University Park, PA 16802

Dear Renata,

As promised, I wanted to get back with you on the IST review of the proposal for the SEDTAPP Engineering Design Program (EDP). Thanks for the meeting with Dr. Sven Bilen, Dr. Madhu Reddy, and me to help explain the context and details of the program. I am sorry I could not get back you sooner but we wanted to have our IST Graduate Advisory Committee (GAC) review the overall program, then I wanted to discuss it with Dean David Hall and Associate Dean Mary Beth Rosson. We are now at the point where we can provide feedback.

While the Engineering Design Program for the M.S. degree has been well thought out, it has not been developed nor consulted with the joint interests of the College of Information Sciences and Technology in mind. While we support the general idea of a Masters degree in Design we see that interests, courses, curriculum, and research within the design area are broad at Penn State, and not solely within the realm of engineering. Therein, many of the perspectives in the curriculum, course topics, and focus areas within the EDP are not yet unique or peculiar to engineering per se. I know you mentioned that the program was designed especially for engineering students only but the problem we have with this is that we have courses, faculty, and interests already within various descriptions of the degree, which we already have offered at the undergraduate and graduate levels; or plan to offer in the near future. We have had a strong focus within IST for the last 10 years in the related topic areas of human-centered design, systems design, gaming design, computer-based design, human-computer-interaction/interaction design, cognitive systems, and usability engineering. We have many world-class faculty members in these areas that have offered courses consisting of design processes and methods, or strongly related to the discipline of design, many times over. Our undergraduate curriculum in fact requires design studio courses. Our curriculum for undergraduate and graduate coursework was developed through the philosophy of problem-based learning and collaborative teamwork a primary foundations of IST as a new inter-disciplinary College. Hence, most of our courses in design or related to design follow this philosophy already. Team-based projects is not just an engineering design approach but represents one that is present and active across many disciplines. Many of our faculty also produces top research in design, user-centered design, or design science.

As I peruse your proposed curriculum of the EDP, there are other curriculum and course offerings specified that are a core of part of IST interdisciplinary programs including: data mining / designing for big-data applications, entrepreneurship and innovation, enterprise architecture, systems thinking and integration, organizational and information design, and decision making/leadership. We first discovered this when we became aware of the Engineering Design course offering in data mining and design (Dr. Conrad Tucker) when the course consult eventually reached us. The main point is that the disciplines you require for engineering design in fact are just as relevant for many of our current IST programs. Therein, as I stand from this it seems like there are two Colleges which have very similar ideas and philosophy regarding design that emphasize information, systems, innovation, user requirements, and global factors as part of
their programs. The faculties also overlap to a degree (e.g., Dr. Scarlett Miller - one of your faculty is an affiliate of IST with a focus in the area of human-computer interaction and design).

Therein, as currently envisioned I believe that there is much potential for the programs to conflict and cause issues in the future unless a more systematic approach is taken. It is our belief that no one program owns the domain of design at Penn State and therein it is not parochial. It is not our intent to be oppositional to the EDP but rather to be collaborative and complementary with your program. After discussing this with Deans Hall and Rosson, it is our view that we should work together on a joint Masters Degree in Systems Design (perhaps with two or even three options - e.g., one in the engineering design area and another in the human-centered design area) in order to avoid potential issues down the road. This graduate degree might also be considered for both residential and online students (once the residential option is developed) and enable a more symbiotic approach wherein courses and faculty could be leveraged together for the joint good. This might also afford work with other departments across the university who connect to various aspects of design and in turn produce a stronger curriculum wherein courses could be co-developed and cross-listed to utilize various strengths and complementarities as related to design. At this time, this is our position with respect to your program. We cannot support a separate degree in Engineering Design from the College of Engineering as it would be in conflict with the programs / courses we already have in place and new programs we are pursuing in the future that relate to design. I would note that curriculum proposal was not passed by the College of IST in the first place and this is our first chance to provide feedback specifically on the proposal and how it relates to our programs.

Sincerely,

Michael D. McNeese
Dr. Michael D. McNeese
Associate Dean of Research, Graduate Programs, and Academic Affairs
College of Information Sciences and Technology
The Pennsylvania State University
University Park, PA
December 3, 2013

Dr. Michael McNeese  
Associate Dean for Research, Graduate Programs, and Academic Affairs  
College of Information Sciences and Technology  
The Pennsylvania State University  
University Park, PA 16802

Dear Michael:

I write in response to your May 14, 2013 letter in which you summarized your concerns regarding the proposal for the School of Engineering Design, Technology, and Professional Programs (SEDTAPP) to establish a Master of Science in Engineering Design (MS EDSGN) and Master of Engineering in Engineering Design (MENG EDSGN). I extend my apology that the consultation did not occur earlier in the process. From my perspective the discussion Sven Bilén and I had with you and Prof. Madhu Reddy was valuable to us, although it is clear from your follow up letter you still have concerns. I hope that some of the additional information I provide here will assuage your concerns.

You stated that “While we support the general idea of a Masters degree in Design we see that interests, courses, curriculum, and research within the design area are broad at Penn State, and not solely within the realm of engineering.” The proposal does not make any claim or imply that design is exclusive to the disciplines in the College of Engineering. In fact, the faculty tried to convey throughout the proposal that the field of study they propose is engineering design—a field which has emerged over the past several decades, and which our college began to recognize in the 1990s. I will provide a brief history of its emergence in the College of Engineering.

The predecessor to the School of Engineering Design, Technology and Professional Programs (School of Engineering Technology and Commonwealth Engineering) had an emphasis on engineering design dating back to the early 1990s when the College of Engineering was an integral part of a National Science Foundation–funded coalition (known as ECSEL) dedicated to integrate engineering design vertically in the curriculum beginning with the first year. Those efforts continued to grow such that by 2002 SETCE was renamed to include engineering design. Thus the School of Engineering Design, Technology, and Professional Programs was established. For over a decade, the professorial ranks of the engineering design faculty in the school are recognized by their primary titles: assistant professor, associate professor, and professor of engineering design. Even earlier than our efforts, there was national and international recognition of the field of engineering design. For example, the International
Conference on Engineering Design (ICED) held its first biennial conference in 1981, and the *Journal of Engineering Design* was launched in 1990. While design is indeed a broad field, engineering design is distinct and focuses on the processes that engineers use in creating and transforming ideas and concept into a product or system.

We recognize that engineering design is multidisciplinary and does link with other fields, which leads to the collaborations that several of the engineering design faculty have with other disciplines in the College of Engineering (e.g., mechanical engineering, industrial engineering, electrical engineering) and outside the college (e.g., IST and Arts and Architecture). We expect that those collaborations will continue and enable Penn State to be recognized as a leader in multidisciplinary design and all its facets.

You indicate that you cannot support the proposed program because you believe that it is in conflict with existing courses, and programs you may propose in the future, but I ask that you consider that this curriculum is unique and meets a market need with its emphasis on engineering design, while also having some courses that may complement rather than duplicate existing curricula.

Sincerely,

Renata S. Engel
December 6, 2013

New Program: Creation of new graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees (College of Engineering)

Dear Elizabeth Price:

Per your request in the memo dated 5 Feb 2013 from the Subcommittee on New and Revised Programs and Courses, this cover memo outlines our responses. A revised document is provided with added/changed language or clarifications (electronically using track changes).

Memo comments are presented first in quotes with how we addressed them presented following each comment.

“The Subcommittee requests that the proposer seek consultation from the College of Information Sciences and Technology, the College of Arts and Architecture, and the College of Education and include written evidence of consultation, along with responses to any feedback, as part of the proposal document.”

We have sought consultation for the College’s indicated and have placed consultation summaries in the revised proposal. Full consultation is also attached.

“The Subcommittee asks that the proposers provide data in the proposal to benchmark against enrollment numbers in similar programs already in existence at other U.S. institutions (page 8 in the Justification for the Program section, third paragraph).”

This data has been added to the revised proposal.

“The Subcommittee also requests that the proposers elaborate upon the new program’s anticipated effect on faculty workload; although some of the courses have been taught for several years already, a new graduate degree program offering two master’s degrees likely would have additional impact.”

This has been addressed in the revised proposal by stating “. Existing graduate courses are already being offered on a typical rotation by tenure-track engineering design faculty. The School will also be hiring to replace a retiring faculty member and to address growth

College of Engineering
of its programs and these new faculty members will also teach at the graduate level in design. Hence, the School feels that faculty teaching loads due to the graduate program will not unduly increase."

"The course proposer of EDSGN 548 may wish to ...obtain formal consultation via the CSCS from the Smeal College of Business."

This consultation was sought and completed on 3/4/2013 (Russell Barton, Senior Associate Dean).

Please let me know if there are elements that still require some clarification. Thank you for your help in this process.

Sincerely,

Sven Bilén
January 30, 2014

New Program: Creation of new graduate program in Engineering Design, offering the Master of Science (M.S.) and Master of Engineering (M.Eng.) degrees (College of Engineering)

Dear Elizabeth Price:

This memo documents changes to the proposal to address concerns raised by the College of Information Sciences and Technology (IST), as discussed at a meeting held in the Graduate School on 28 January 2104. In attendance were:

Regina Vasilatos-Younken, Interim Dean of the Graduate School
Roxanne Zoschg, Administrative Support Assistant
Renata Engel, Associate Dean for Academic Programs
Sven Bilén, Head of SEDTAPP
Timothy Simpson, Professor of Mechanical and Nuclear Engineering
Michael McNeese, Senior Associate Dean for Research, Graduate Studies and Academic Affairs
Peter Forster, Assistant Dean for Online Programs and Professional Education
Madhu Reddy, Associate Professor of Information Sciences and Technology

The outcome of the meeting was the resolution of several concerns addressed by IST. These concerns have been resolved by 1) adding several IST courses as general electives; 2) adding Sandeep Purao to the list of the program’s graduate faculty and overviewing the process for obtaining affiliate faculty status in engineering design; and 3) clarifying that the engineering design program “breadth” is built upon technical “depth” in engineering. In addition, it was also recommended that we work to strengthen the natural ties between research areas, faculty, and courses.

Specific changes to the proposal are (electronic version uses track changes):

P. 4, par. 2: Added “grounded in engineering or approached from an engineering viewpoint.”

P 6–7: Under general electives, added the text “Electives are to be selected in consultation with the student’s adviser. The courses listed below are examples of appropriate courses. Other courses may be approved in consultation with the advisor.”
Also, included IST 413, IST 520, and IST 521 as general electives. These changes were also updated under the degree requirements and proposed bulletin listing.

P. 9: Clarified that we expect the students to hold B.S. in engineering by adding “Prospective students will be considered who hold a degree in engineering or related field, or equivalent experience.”

P. 11: Added clarification of the engineering nature of the list of multidisciplinary topics: “Engineering design is a collaborative and multidisciplinary activity that includes topics found in the list below. While topics on this list are also likely found in other disciplines, the focus for students enrolled in this program will be to approach them from an engineering perspective. For example, in design cognition, the focus would be on how an engineer acquires design knowledge, perception, intuition, and reasoning. In data driven design, how this design methodology would be employed to solve large scale, complex engineering design problems.”

Please let me know if there are elements that still require some clarification. Thank you for your help in this process.

Sincerely,

Sven Bilén
Hi Elizabeth and Jean,

I’m unable to attend this week’s meeting because of College meetings out of state. IN reading through the course and program proposal comments, I noted so inquiries regarding IST’s consultation. Rather than responding to these inquiries as I see them, it is probably good to simply that IST is supportive of the program following face-to-face consultations.

Thanks, Pete

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