

**WORCESTER POLYTECHNIC INSTITUTE**

January 18, 2018

To: The WPI Faculty  
From: Mark Richman  
Secretary of the Faculty

The fifth Faculty meeting of the 2017-2018 academic year will be held on **Thursday, January 18, 2018** at **3:15 pm** in **Olin Hall 107**, with refreshments at 3:00 pm.

- |  |            |
|--|------------|
| 1. Call to Order   | M. Richman |
| <ul style="list-style-type: none"><li>• Approval of the Agenda</li><li>• Consideration of the Consent Agenda<br/>(including Minutes from 12-12-17)</li></ul> |            |
| 2. President's Report  | L. Leshin  |
| 3. Provost's Report  | B. Bursten |
| 4. Committee Business  |            |
| Committee on Financial and Administrative Policy (FAP)   | T. Dominko |
| Committee on Graduate Studies and Research (CGSR)  | K. Troy    |
| <ul style="list-style-type: none"><li>• Motion to revise the Research Development Council</li></ul>  |            |
| 5. Special Report  |            |
| COAP-COG Working Group on Promotion  | S. Roberts |
| <ul style="list-style-type: none"><li>• Setting a Framework for Faculty Mentoring: Update and Discussion</li></ul>   |            |
| 6. Old Business  |            |
| 7. New Business  |            |
| 8. Announcements   |            |
| 9. Adjournment   |            |

**TABLE OF CONTENTS**  
**Faculty Meeting Materials, January 18, 2018**

	Page
1. Faculty Meeting Minutes: December 12, 2017	3
2. Committee Business:	
Committee on Financial and Administrative Policy (FAP):	
- Motion to revise the Research Development Council	7
3. Appendix: Consent Agenda Motions	10
CAO Motions:	
- to add OIE3600 Scripting for Process and Productivity Improvement	11
- to revise the Distribution Requirements for Industrial Engineering majors	13
CGSR Motions:	
- to add ID500 Responsible Conduct of Research	14
- to add BUS 545 Introduction to Health Systems	15
- to add OIE 556 Health Systems Modeling and Improvement	16
- to add FIN 522 Financial Institutions, Markets & Technology	17
- to add OBC 538 Developing Managerial Talent	18
- to add BUS 547 Energy Management	19
- to revise BUS 517 Graduate Qualifying Project in Management	20
- to drop OIE541 Op. Risk Mgmt. and to add OIE542 Risk Mgmt. and Decision Making	21
- to limit the number of credits that can be taken by non-matriculating students in the FSB	22

## WORCESTER POLYTECHNIC INSTITUTE

### Faculty Meeting Minutes, December 12, 2017

#### Summary:

1. Call to Order
2. Announcements
3. President's Report
4. Provost's Report
5. Committee Business: COG, CGSR, COG
6. Adjournment

#### Detail:

##### 1. Call to Order

The fourth Faculty meeting of the 2017-2018 academic year was called to order in Olin Hall 107 by **Prof. Richman** (ME). **Prof. Richman** congratulated all those in attendance as B-term successfully concludes. The meeting agenda and the consent agenda (including the minutes from November 16, 2017 and incorporating one minor change of a course number) were approved.

##### 2. Announcements

**Prof. Humi** (MA), for the Committee on Academic Policy (CAP) urged all faculty members to submit their grades by the deadline of December 20, 2017 at 3pm. The deadline is important because students' grades affect their academic status and academic standing.

##### 3. President's Report

**President Leshin** explained that WPI is keeping abreast of and advocating against the provisions in the proposed new tax bill that would adversely affect higher education. We are also planning in the event of a worst case scenario. In her view, the most detrimental provision in the bill, which is included in the House version but not in the Senate's, is the inclusion of a new tax on graduate student stipends. President Leshin is optimistic that the stipend tax will be removed from the final version of the bill. President Leshin encouraged everyone to use the holiday break to relax and spend time with family and friends.

##### 4. Provost's Report

**Provost Bursten** focused on the importance of campus sustainability. He announced that Prof. Mathisen (CEE) will succeed Prof. Orr (ECE) as WPI's new Director of Sustainability. Provost Bursten urged those in the audience to attend today's Great Problem Seminar Presentations from 1pm to 3pm. The Provost indicated that WPI has improved from #19 nationally to #5 in the ranking of the Institute of International Education in U.S. participation in education abroad. Provost Bursten pointed out that WPI's global program is faculty-driven, whereas most other universities hire third parties to manage the details. Noting that about 970 sophomores have applied for the global program next year, the Provost encouraged additional faculty participation.

##### 5. Committee Business

###### Committee on Governance (COG)

**Prof. Richman** (ME) explained that, in Prof. Gaudette's (BME, Chair of COG) absence, he would represent COG in presenting COG's motion concerning the Research Conduct Policy, and that Prof. Albano (CEE, member of COG) would moderate the discussion. Prof. Richman, for the Committee on Governance (COG), moved that the proposed WPI Policy on Research Conduct (included as Attachment 1 in the distributed materials) replace the current faculty-approved WPI Policy on Research Misconduct (in Part Two, Section 4.G of the Faculty Handbook).

**Prof. Richman** explained the iterative process used to formulate the proposed Research Conduct Policy involving a working group of three faculty members and three trustees, the Committee on Governance, and the faculty community. He outlined the needs addressed by the proposed policy, especially the need to have single policy for the University by reconciling the differences between the research conduct policy approved by the Trustees in December 2013 and the policy approved by the Faculty in January 2014. Prof. Richman also described the four

stages of a research misconduct case if it were to arise under the proposed policy: an initial assessment by the VPR; an inquiry by fact-finders appointed by the VPR; an investigation by a committee appointed by the Secretary of the Faculty and the Chair of the Faculty Review Committee; and an appeal of any sanction or of the findings when a procedural violation were alleged or when the Provost decides that research misconduct has occurred in disagreement with the conclusion of the investigation committee. The process would conclude after any of the first three stages if no finding of possible research misconduct were made at that stage. Finally, Prof. Richman summarized the key modifications that had been incorporated into the proposed policy based on faculty-input received since the November Faculty meeting, including the possibility of appealing the finding of research misconduct on the grounds described above. (See **Addendum #1** on file with these minutes.)

**Prof. Ryder** (BBT) asked who was responsible for enforcing the deadlines throughout the process. **Prof. Richman** deferred to **Mr. Bunis** (Univ. Counsel), who believed that the VPR would be responsible for providing notifications and keeping track of timelines. Prof. Richman pointed out that the individual who most closely plays the role of the Research Integrity Officer is the VPR. Mr. Bunis explained that the assumption in the policy is that the deadlines will be met, and that written notification must be provided by the VPR to the regulators if and when the deadlines are not met. **Prof. Ryder** asked about how the policy would apply to students. Prof. Richman explained that funded student research would fall under this policy; otherwise, the issue is one of academic honesty and would be handled by the Campus Hearing Board.

**VPR Vernescu** spoke in favor of the motion. He indicated that in a review of our policy conducted by the Office of Research Integrity (ORI) over a year ago, several concerns were raised, including that it did not cover students and staff members. The proposed policy will ensure that our federal research funding is not in jeopardy because it satisfies the NIH requirements, which are stricter than all other federal funding agencies.

**Prof. Rundensteiner** (CS) asked whether the legal counsel available to the Respondent would be provided by WPI. **Prof. Richman** explained that the Respondent would be responsible for choosing and paying for his or her own counsel. **Mr. Bunis** (University Counsel) explained the role of the University counsel would not be to give advice to the Respondent. The VPR, on the other hand, would be responsible for overseeing the integrity of the process and informing the participants of how to proceed according to the procedures described.

**Prof. Weekes** (MA) pointed out that the role of the Respondent's legal counsel parallels the involvement of legal counsel used by students involved cases that come to the Campus Hearing Board.

**Prof. Sakulich** (CEE) asked if the role of the VPR was to simply pass on to the Provost the recommendations of the inquiry committee and the investigation committee. **Prof. Richman** explained that at either or both stages, the VPR could disagree with the committee's recommendations.

**Prof. Weathers** (BBT) asked whether we should also include an appeal when the VPR's recommendation (as opposed to the Provost's) was different than the committee's. **Prof. Richman** thought that the relevant disagreement was between the investigation committee and the Provost, who would make the final decision before any appeal were contemplated by the respondent. The motion **passed**.

#### Committee on Graduate Studies and Research (CGSR)

**Prof. Troy** (BME), for the Committee on Graduate Studies and Research (CGSR), moved that several sections of the Graduate Catalog related to Internships be modified (as described in the meeting materials), and that new course designators be added for Master's and Ph.D. internships. She explained that the intention of the motion is to provide a framework for graduate programs to offer internships and to clarify the expectations for the student's internship experience. Departments and programs must "opt in" to offer course designators for internships, and can choose the number of credits awarded for each internship. The motion limits (to 3) the number of internship credits that can count toward degree requirements, requires that students must complete 12 credits of graduate coursework at WPI before taking on an internship, and does not allow TAs to participate in internships during the academic year. Course designators for internships would make it easier to track students who participate. Prof. Troy pointed out that the internships would be subjected to the approval of a departmental designee rather than the student's faculty advisor. The motion also included course descriptions for both Master's (XYZ 5900) and Ph.D. (XYZ 6900) Internship Experiences. (See **Addendum #2** on file with these minutes.)

**Prof. Billiar** (BBT) was concerned that the internship might be considered similar to a project which, in turn, could require more than three credits to complete. **Prof. Troy** thought that off-site projects were different than the internships referred to in the motion. Prof. Billiar was also concerned that requiring students to complete 12 credits before they could participate in an internship would mean that many could not do so even after one full semester. Prof. Troy felt that the 12-credit requirement was needed to assure the internship sponsor that the student had the proper maturity to perform well. Prof. Billiar asked if undergraduate credits that counted toward the graduate degree would be considered part of the 12 credits needed to participate in an internship. Prof. Troy explained that the 12 credits would include such undergraduate credits because they counted toward the graduate degree.

**Prof. Shue** (CS) made a friendly amendment to allow for the possibility of a student doing an internship at their current place of employment if he or she can document that it will provide a new learning experience. **Prof. Troy** accepted the friendly amendment.

**Prof. Gatsonis** (ME) made a friendly amendment to replace "department" or "departmental" with "program" in five places in the language of the motion. **Prof. Troy** accepted the friendly amendment.

**Prof. Ryder** (BBT) asked about how the rule would be handled in a graduate program that currently allows students to complete an internship for six to nine credits. **Prof. Troy** explained that under the proposal, students would register for three credits of internship and separately register for the remaining credits as a project.

**Prof. Christopher** (MA) wanted to make sure that there were separate designations for the Master's and Ph.D. internship courses.

**Prof. Billiar** (BME) moved to amend the main motion by reducing (from 12 to 9) the number of credits required before students could participate in an internship. The motion was seconded.

**Prof. Weathers** (BBT) thought that students should have more than just one semester of 9 credits before they go out to serve as graduate interns. In her view, based on her experience with graduate students, 12 credits was a more reasonable requirement.

**Prof. Gatsonis** (ME) agreed with Prof. Weathers, and pointed out that the 12 credit requirement would typically and appropriately require more than one semester of graduate work before a student should accept an internship. The motion to amend the main motion **failed**.

**Prof. Billiar** (BME) appreciated the need for flexibility, but asked if there were any specific outcomes expected for three credits of an internship. **Prof. Troy** preferred to leave any further specificity to individual programs and emphasized that the proposal was purposely flexible in this sense.

**Prof. Gatsonis** (ME) called the question. The motion was seconded and **passed**. The main motion (as amended) **passed**.

#### Committee on Governance

**Prof. Albano** (CEE), for the Committee on Governance (COG), brought (for discussion only) a motion to modify By-Law Five of the Faculty Handbook to replace the restriction that the Secretary of the Faculty may not serve successive terms with a restriction that the Secretary of the Faculty may not serve more than two successive terms. Prof. Albano emphasized that the proposal maintains the three-year length of the Secretary's term, but would give the Faculty the option through the current two-stage (nomination and election) process to re-elect him or her for a second consecutive term. The number of consecutive terms would be limited to two. This option would allow the faculty to consider the benefits of continuity and past experience. The motion is based on the idea that the Secretary of the Faculty is a leadership position that will benefit from the possibility of a second term by reducing the steep learning curve of the first term, allowing a greater focus on longer term strategic planning, and allowing greater time to develop productive working relationships. Prof. Albano cited several examples in which the Faculty would be better represented by a more experienced Secretary of the Faculty.

**Prof. Cocola** (HUA) pointed out that under the proposal it would be mathematically possible for the Secretary of the Faculty to serve 12 out of 15 years, and he thought in that case the position would be shifted from one of governance to one of management. **Prof. Albano** emphasized that the motion was not for a de facto six-year term. Faculty members would have the option to decide who to elect every three years and could take Prof. Cocola's concern into consideration each time.

**Prof. McNeill** (ECE) clarified that under the proposal there would still be a nomination process and then an election process, and at either stage the Faculty could choose not to select the sitting Secretary of the Faculty. **Prof. Albano** reiterated that the intention of the proposal was not to short circuit that two-stage process every three years, and he pointed out that even if the current Secretary of the Faculty were nominated for a second consecutive term, he or she may choose not to be placed on the final ballot.

**Prof. Sakulich** (CEE) suggested that to avoid confusion, "successive" terms should be replaced by "consecutive" terms in the wording of the motion. **Prof. Albano** agreed.

**Prof. Fehribach** (MA) asked if the motion would apply to the upcoming election if it were approved in January. **Prof. Albano** emphasized that the motion is based on the ideas and benefits he described in his presentation, so that in his view if it were approved it should be implemented immediately. Prof. Fehribach thought that the implementation timeline should be made explicit. Prof. Albano explained that COG was looking for feedback on this question.

#### **6. Adjournment**

Meeting adjourned at 12:21 pm.

#### **Addenda on file with these minutes:**

- 1. Addendum #1 COG Presentation – Research Conduct Policy – December 12 2017**
- 2. Addendum #2 CGSR Presentation – Graduate Internships – December 12 2017**
- 3. Addendum #3 COG Presentation – Motion to Modify By-Law Five – December 12 2017**

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Financial and Administrative Policy Committee (Prof. Dominko, Chair)  
Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to revise the Research Development Council

**Motion:** The Committee on Financial and Administrative Policy and the Committee on Graduate Studies and Research recommend, and I move that the current language describing Research Development Council (in Part Two, Section 5.B of the Faculty Handbook) be replaced by the new description below.

### **Current Description of the Research Development Council**

(From Part Two, Section 5.B of the Faculty Handbook)

#### **5.B. Research Development Council\***

(Approved by the Faculty, May 22, 1986)

##### *Background*

The Research Development Council (RDC) was conceived and approved by faculty vote in 1986 as a way to nurture and develop excellence in research and scholarship among members of the Worcester Polytechnic Institute (WPI) faculty and is the group that provides funding under the Research Advancement Program (RAP). The purpose of the RDC is to provide relatively modest amounts of short-term (normally one year) financial support as "seed" money to faculty members and research teams with an emphasis on those who currently lack external funding. The general goal of the RDC is to assist faculty in acquiring off-campus support for research activity, while the more specific objects are:

1. to foster research programs being developed by newly appointed faculty members;
2. to support researchers and scholars who have not previously been successful in attracting off-campus funding;
3. to foster the development of new research programs by experienced researchers;
4. to support those areas of research and scholarship in which WPI wishes to become especially well-recognized;
5. to support researchers when necessary to maximize the success of their efforts;
6. in general, to promote the preparation and submission of proposals for external funding of scholarship and research, as a means of stimulating this activity; and
7. to review on a regular basis WPI's support for faculty research activity and to recommend changes in policy and practice, where appropriate.

For financial reasons, funding of the RDC was discontinued shortly after it was established until the winter of 1999, when an allocation was made to fund a limited number of programs. Additional funding was then made available for awards to be made for fiscal year 2001 projects and it is expected that annual funding of the RDC will again continue. Funds available at this time must be used for support of the Strategic Initiatives, including the Interdisciplinary Research Areas and increasing the number of Ph.D.'s awarded.

##### *Funding Categories:*

Descriptions of RDC funding categories and organizational composition follow. The full text of the original faculty-approved RDC document provides additional information about funding objectives and other RDC activities/responsibilities. This document is available via the RDC webpages.

Through the RDC, funds are made available in the following categories of research needs:

1. support for travel necessary to negotiate off-campus mechanism) and limited supplies funding to complete proposals for such funding;

2. research initiation support for new researchers;
3. research initiation support for other faculty members developing new areas of expertise;
4. research completion and proposal preparation support;
5. support for other travel and publication expenses;
6. support for equipment repair and maintenance contracts; and
7. support for major equipment acquisition.

In all cases, RDC funding will be limited solely to the amount needed to carry out the research in question and may, if appropriate, include graduate student stipends and limited summer support for faculty members. For certain types of expenses, funding is also available through the Supplemental Research Support (SRS) mechanism.

#### *Organization*

The Research Development Council consists of five established scholars who are actively involved in their own research programs: the Associate Provost (who chairs the Council) and four other members of the WPI faculty. One faculty member is appointed annually by the Associate Provost for a one year term, while the other three will serve rotating three year terms. One of these members is appointed by the Committee on Graduate Studies and Research from the faculty at large. The second member is appointed by an ad hoc group consisting of the heads of the departments of biomedical engineering, chemical engineering, civil and environmental engineering, computer science, electrical and computer engineering, fire protection engineering, management, and mechanical engineering. The third member is appointed by another ad hoc group consisting of the heads of the departments of biology and biotechnology, chemistry, humanities and arts, mathematical sciences, physics, and social science and policy studies. After the initial Council is appointed, the three terms members must draw lots to determine who will serve for one year, two years, or three years. When a faculty member completes a term on the RDC, her or his successor will be appointed by the appropriate committee or ad hoc group. The Director of Research Administration provides the RDC with administrative and staff support.

#### **Proposed Description of the Research Development Council:**

(To be placed in Part Two, Section 5.B of the Faculty Handbook)

#### **5.B. Research Development Council**

##### *Roles and Responsibilities*

The role of the Research Development Council (RDC) is to serve as an advisory board to the Vice Provost for Research (VPR). RDC provides advice and assistance to the VPR on the development of research, research planning, and research policy. The specific roles and responsibilities of the RDC are:

1. Strategic planning to maximize research productivity of faculty and staff and to support highly innovative, transformative research
2. To administer internal review of pre-proposals for limited submission opportunities
3. To administer internal research funding programs
4. To review and recommend updates to the indirect cost return (ICR) reinvestment model as needed
5. To develop yearly RDC budget recommendation, including, but not limited to support of:



- a. repair and maintenance of research instrumentation;
  - b. multi-institutional research initiatives;
  - c. internal research funding programs for all disciplines; and
  - d. cost sharing.
6. To coordinate research infrastructure requests in support of new Faculty recruitment across all disciplines with Department Heads, Deans and the Provost
  7. To make recommendations regarding research infrastructure

### Membership

The Research Development Council consists of the Vice Provost for Research and 8 faculty members with a record of significant scholarly research contributions. Faculty members serve staggered 3-year terms. Any member can be reappointed after a minimum of one year between terms.

- a. One faculty member is appointed by the Dean of Foisie Business School.
- b. Two faculty members are appointed by the Dean of Engineering.
- c. Two faculty members are appointed by the Dean of Arts and Sciences.
- d. One faculty member is appointed annually by the VPR.
- e. One faculty member is appointed by the COG.
- f. One faculty member is appointed by the Committee on Graduate Studies and Research.

Research Solution Institute staff will provide the RDC with administrative and staff support.

### Rationale:

The Research Development Council (RDC) was conceived and approved by faculty vote in 1986 as a way to nurture and develop excellence in research and scholarship among members of the Worcester Polytechnic Institute (WPI) faculty and was the group that oversaw funding under the Research Advancement Program (RAP). The purpose of the RDC was to provide relatively modest amounts of short-term (normally one year) financial support as "seed" money to faculty members and research teams with an emphasis on those who currently lack external funding. For financial reasons, funding of the RDC was discontinued shortly after it was established until the winter of 1999, when an allocation was made to fund a limited number of programs. Additional funding was then made available for awards to be made for fiscal year 2001 projects. The funding was discontinued in 2009.

Research Development Council is composed of Faculty with record of significant research/scholarship accomplishments and plays a pivotal role as an advisory board to the VPR. With the Strategic Plan goal to significantly increase research expenditures, it is critically important that we manage research activities and resources in a more structured manner. In addition to administering internal research funding programs across all disciplines, RDC will be undertaking activities that are currently not addressed adequately, such as limited submission reviews and recommendations, maintenance of research infrastructure and equipment, and coordination of capital requests with existing equipment availability, and other seed funding opportunities.

### Implementation

Immediate, with staggered membership terms to be worked out on appointment.

## **Appendix: Consent Agenda Motions**

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Academic Operations (Prof. Zeng, Chair)

**Re:** Motion to add OIE3600 Scripting for Process and Productivity Improvement

**Motion:** On behalf of the Foisie Business School, the Committee on Academic Operation recommends, and I move that OIE 3600 Scripting for Process and Productivity Improvement, as described below, be added as a new Industrial Engineering course.

### **Proposed Course Description**

OIE3600 Scripting for Process and Productivity Improvement (Cat. I)

This course will train students to think critically about the effective and efficient use of computational tools to enhance everyday organizational performance. Students will learn how to create value through productivity tools that will likely include advanced spreadsheet functionality, regular expressions, macros, and scripting. The course will make use of software including Microsoft Excel with Visual Basic for Applications, Python, and advanced text editors, applied to a variety of domains, to improve students' ability to automate processes and productivity.

Students can receive credits for both OIE 3600 and either CS 2119 or CS 2102 or CS2103. For IE majors, if one of the CS courses previously listed is used as a required programming course, then OIE 3600 can be used as an IE elective.

*Recommended Background:* Some previous exposure to analytical problem solving (such as found in BUS2080 *Data Analysis for Decision Making* or MA2210 *Mathematical Methods in Decision Making*)

**Anticipated Instructor:** Professor Andrew Trapp

### **Rationale:**

Industrial Engineers work in more varied application areas than ever before in an effort to increase value for their organizations. In today's digital world, data is proliferating and tasks are increasingly computer-based. There are increasing demands to perform data-oriented, computational tasks efficiently and effectively. Moreover, the tasks and processes that are encountered are often repetitive in nature, and can benefit from increased productivity and automation. This new course will address these growing market realities and needs; in particular, this course will prepare students to be proficient with the computational and programming tools such as macros and scripting in the everyday workplace. Because of the value and importance of these tools, OIE 3600 will be a required course for Industrial Engineering majors to acquire computer skills; that is, IE majors now can choose from one of the following three courses: CS 2119, CS 2102 and OIE 3600, to meet the requirement.

**Resources Needs:** The course will require no new resources. It will be taught by Prof. Andrew Trapp, who will have additional teaching capacity in AY 2018 – 2019 as a result of his receipt of

tenure and promotion in 2017. A standard lecture hall/classroom is required, with no special equipment. Students will be encouraged to bring a laptop computer to the classroom for computer-based exercises. No library resources are required. The software to be used in this class, such as Python and advanced text editors, are free or open-source.

**Impact on Distribution Requirements and Other:** The only impact on distribution requirement is that the Industrial Engineering majors will have one more option with which to equip themselves with computing skills, in addition to the existing three CS courses (CS 2119, CS 2102, and CS 2103. Note that CS 2103 is new course to be offered starting from AY 2018-19). The distribution requirement change is presented in a separate motion.

**Implementation date:** D-term, AY 2018-19.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Academic Operations (Prof. Zeng, Chair)

**Re:** Motion to revise the Distribution Requirements for Industrial Engineering majors

**Motion:** On behalf of the Foisie Business School, the Committee on Academic Operations recommends, and I move that the Distribution Requirements for Industrial Engineering majors be revised as described below.

**Description of Proposed Revision:**

On p.58, Note 2a of the Undergraduate Catalog (2017-18), with additions underlined.

---

2. Industrial Engineering Topics must include courses in the following three topic areas:

a. The IE Core consists of 9/3 units: OIE 4420 (Practical Optimization) or OIE 3405 (Work Systems and Facility Planning), BUS 2080 (Data Analysis for Decision Making) or MA 2210\* (Mathematical Methods in Decision Making), BUS 3020 (Achieving Effective Operations), CS 2119 (Application Building with Object-Oriented Concepts) or CS 2102 (Object-Oriented Design Concepts) or CS 2103 (Accelerated Object-Oriented Design of Concepts) or OIE 3600 (Scripting for Process and Productivity Improvement), OIE 2850 (Engineering Economics), OIE 3410 (Materials Management in Supply Chains), OIE 3420 (Quality Planning, Design and Control), OIE 3460 (Simulation Modeling and Analysis), and OIE 3510 (Stochastic Models).

\*IE majors cannot receive credit for both BUS 2080 and MA 2210.

---

**Rationale:**

With the approved new course, OIE 3600 – Scripting for Process and Productivity Improvement, the Industrial Engineering majors will have one more option to equip themselves with computing skills to meet the degree requirements, in addition to the existing three CS courses (CS 2119, CS 2102, CS 2103. Note that CS 2103 is a new course to be offered starting from AY 2018-19).

**Implementation Date:** AY 2018-19

**Date:** January 18, 2018  
**To:** WPI Faculty  
**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)  
**Re:** Motion to add ID500 Responsible Conduct of Research

**Motion:** The Committee on Graduate Studies and Research recommends and I move that the course ID500 Responsible Conduct of Research be added

**Proposed Course Title and Description:**

ID500 *Responsible Conduct of Research* (0 credits)

The purpose of this zero credit course is to familiarize pre-doctoral and postdoctoral trainees with basic ethical issues in research confronting scientists and engineers. The course includes five lectures and five student-led discussion sessions on topics such as experimental design best practices, research involving animal subjects, authorship, and research misconduct. Student learning will be assessed through in-class formative assessments as well as small group presentations during the discussion sessions. The course is recommended for all graduate students and postdocs who are engaged in research and will be offered in 2018 and each year thereafter.

*Schedule:* Spring. Lectures on Fridays, Discussion Sessions on Thursdays, both 12-1pm.

**Rationale:**

The Office of Graduate Studies is interested in providing responsible conduct of research (RCR) training to the graduate students and postdocs of WPI to ensure best research practices are being employed by trainees. Additionally, research funders, such as the NIH require an in person RCR course for trainees to satisfy sponsored fellowships and training grants. Currently WPI only provides some RCR training through an online option, the CITI program, as well as through the one credit course, BB551. The latter is limited to a small number of participants, under 15 in 2016. Additionally, BB551 does not cover certain topics, such as human and animal subjects research, that are part of the NIH requirements for RCR instruction. ID500 *Responsible Conduct of Research*, will be open to up to 50 graduate students and postdocs from any discipline each year and fully meets NIH RCR instructional requirements.

This course is a new course at WPI that will be offered by the Office of Graduate Studies. Much of the material it will cover is not offered in any other class at WPI. We wish to introduce it directly into the graduate catalog, not just offer a special topics course. The course number, ID500, uses a course designation that already exists, but has been rarely used. This course designation is appropriate for this course since graduate students from across a number of disciplines will enroll in this course.

**Resource Needs:** A classroom for approximately 50 people will be needed. Rory Flinn, the Director of Graduate Student Professional Development will serve as the course director.

**Implementation Date:** Implementation date for this action is the 2018 academic year.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to add BUS 545 Introduction to Health Systems

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that BUS 545 Introduction to Health Systems, as described below, be added.

**Proposed Course Description:**

**BUS 545 INTRODUCTION TO HEALTH SYSTEMS (3 credits)**

This course introduces students to the structure of health systems (suppliers, providers, and payers), exploring processes, structure, and infrastructure elements. Topics include an overview of care models and processes, health information technologies, privacy and other regulations, and payment mechanisms. The course also explores future visions of health systems, focused around wellness, patient-centeredness, and value, supported by new technologies and care models.

**Rationale:**

This course is a core course in FBS's Health Systems Innovation graduate certificate program, approved by WPI faculty 12/10/13. We have awarded seven HSI certificates to date without specific promotion, largely as a subset of our MS in Operations Analytics & Management (MSOAM) program. We would like to be able to market a Health Systems Innovation concentration within the MSOAM in hopes of attracting additional students from the wide variety of health care providers in our geographic area. Offered spring 2014 with 18 students and spring 2015 with 18 students.

**Resources:** Current faculty already deliver this course in load on an ad hoc basis. No new resources are required.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to add OIE 556 Health Systems Modeling and Improvement

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that OIE 556 Health Systems Modeling and Improvement, as described below, be added.

**Proposed Course Description:**

**OIE 556 HEALTH SYSTEMS MODELING AND IMPROVEMENT (3 credits)**

This course is organized around problem-solving frameworks for designing and improving health systems, exploring specific methodologies and their role in organizational change. Tools and techniques from operations management, industrial engineering, statistics, and management sciences, are used to explore common health systems design and management issues, focusing on data requirements and decision-making. Issues that may be explored include demand forecasting, process design, product design, and staffing and scheduling.

**Rationale:**

This course is a core course in FBS's Health Systems Innovation graduate certificate program, approved by WPI faculty 12/10/13. We have awarded X HSI certificates to date without specific promotion, largely as a subset of our MS in Operations Analytics & Management (MSOAM) program. We would like to be able to market a Health Systems Innovation concentration within the MSOAM in hopes of attracting additional students from the wide variety of health care providers in our geographic area. Offered fall 2104 with eight students and summer 2015 with 14 students.

**Resources:** Current faculty already deliver this course in load on an ad hoc basis. No new resources are required.



**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to add FIN 522 Financial Institutions, Markets & Technology

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that FIN 522 Financial Institutions, Markets & Technology, as described below, be added.

**Proposed Course Description:**

**FIN 522 FINANCIAL INSTITUTIONS, MARKETS & TECHNOLOGY (3 credits)**

This course will examine financial institutions and the relationship between U.S. capital markets and global markets. The class is intended to help students understand the impact of financial intermediaries on the global economy, businesses, and consumers. The course will investigate the organization, structure, and performance of money and capital markets and institutions. The class will examine the major financial management issues confronting financial service firms (depository institutions, insurance companies, investment banks, mutual funds, hedge funds, and pension funds), and it will address the legal, regulatory, financial reform, and risk management issues facing these financial institutions and markets. Finally, the course will address the rapid evolution of the financial sector as a result of technology. We will consider how financial technology (“FinTech”) is being developed by startup technology firms and existing financial institutions may disrupt the financial sector through innovation in digital and electronic currencies, online finance and investment platforms, big data, and digital payment systems (among other topics).

**Rationale:**

This course will be a core course in FBS’s Financial Technology (FinTech) MBA concentration. FinTech is a rapidly growing field in Massachusetts; a Massachusetts 2017 Financial Services Impact Report predicts Massachusetts FinTech innovation will drive the state into a national role as a leader in the B2B-driven “second wave” of FinTech development. The report also identifies the local FinTech ecosystem as the growth engine for the state’s financial services sector, which saw the number of jobs jump from 174,000 in 2015 to 181,000 in 2016, and, according to the most currently available year-end data, average wages increase from \$142,225 in 2014 to \$166,524 in 2015, over 5% each year. FBS is well positioned to capitalize on this growth with our mission of developing innovative leaders who can see opportunity, harness technology and drive change to solve complex human problems, FBS’s newly renovated FinTech Lab (WB228) will be a great venue for FIN522. Offered spring 2017 with 19 students.

**Resources:**

Current faculty already deliver this course in load on an ad hoc basis. No new resources are required.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to add OBC 538 Developing Managerial Talent

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that OBC 538 Developing Managerial Talent, as described below, be added.

**Proposed Course Description:**

**OBC 538 DEVELOPING MANAGERIAL TALENT (3 credits)**

Assessing and developing managerial talent in yourself and others is a key to professional success and can be a source of organizational competitive advantage. This course addresses the Globalizing World and You, and provides students access to the frameworks, tools, and practice necessary to engage in thoughtful self-assessment, constructive feedback acquisition and interpretation, and strategic development planning for themselves as well as for others on their teams and in their organizations. The goals of this course are: a) to help students assess their own managerial abilities, b) to develop plans for securing new knowledge, skills and abilities that will help them in their careers, c) to set goals and agendas for their own development and d) to consider ways to translate this development process to others.

**Rationale:**

We have to date offered this course as a gateway into our cohort MBA program for students seeking to start classes in a non-launch semester (we are currently launching new MBA cohorts in fall only). This allows us to matriculate students in the cohort pipeline a semester prior to launch so they can start making progress toward their MBA while we continue to recruit additional students. The goal is to have, for example, one annual cohort launch with 30 students rather than two annual launches of 15 students each. Having a “Gateway” set of electives will help us avoid the inevitable melt that would occur if we have to tell cohort applicants they cannot commence their program for another 8-12 months. DMT has proven to be a great first course that both gets students excited about the program and provides them with tools they will use throughout their MBA curriculum. Offered spring 2016 with 18 students and fall 2016 with 10 students.

**Resources:** This course is delivered by an adjunct professor at a rate of \$5000 per offering and is factored into our annual adjunct budget.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to add BUS 547 Energy Management

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that BUS 547 Energy Management, as described below, be added.

**Proposed Course Description:**

**BUS 547 ENERGY MANAGEMENT (3 credits)**

This course covers a broad spectrum of energy auditing methods, energy management planning and energy management topics important to future energy professionals, business managers and leaders. The course includes a project that applies energy management concepts to an actual energy audit. The audit project also includes the development of an energy management plan for a selected building making cost-effective recommendations to improve efficiency. Additional topics include: energy management strategies for business, governmental regulations, incentives and resources, European Union energy policies and programs including carbon credits and related markets. Energy efficiency practices as they relate to ISO 50001 Energy Management Systems, the U.S. Green Building Council (USGBC), and Leadership in Energy & Environmental Design (LEED), high performance buildings, data centers, renewable energy sources and smart grid are also studied. Special focus will be on energy management for financial and environmental sustainability benefits from the perspective of CEOs, CFOs, COOs and CSOs.

**Rationale:**

This course has been delivered by CPE as part of the MS in Power Systems Management program. FBS also plans to use this course as part of a new sustainability management concentration we are developing.

**Resources:**

This course is delivered by an adjunct professor at a rate of \$5000 per offering and is factored into our annual adjunct budget.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to revise BUS 517 Graduate Qualifying Project in Management

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that the course description for BUS 517 Graduate Qualifying Project in Management be revised, as described below.

**Current Course Description:**

**BUS 517 GRADUATE QUALIFYING PROJECT IN MANAGEMENT (GQP)**

This course integrates management theory and practice, and incorporates a number of skills and tools acquired in the M.B.A. curriculum. The medium is a major project, often for an external sponsor, that is completed individually or in teams. In addition to a written report, the project will be formally presented to members of the department, outside sponsors and other interested parties. (Prerequisites: ACC 503, BUS 500, BUS 501, ETR 500, FIN 500, FIN 501, MIS 500, MKT 500, OBC 500, OBC 501 and OIE 500 or equivalent content, or instructor consent)

**Proposed Course Description:**

**BUS 570 GRADUATE QUALIFYING PROJECT IN MANAGEMENT (GQP)**

This capstone course integrates management theory and practice, and incorporates a number of skills and tools acquired in the M.B.A. curriculum. The medium is a major team-based project in the form of a corporate venture or green field venture. In addition to a written report, the project is formally presented to a panel of outside experts including serial entrepreneurs and investors. (Prerequisites: ACC 503, BUS 500, BUS 501, ETR 500, FIN 500, FIN 501, MIS 500, MKT 500, OBC 500, OBC 501 and OIE 500 or equivalent content, or instructor consent)

**Rationale:**

The GQP has evolved over the years where now students are largely doing green field ventures that are reviewed by entrepreneurs and investors rather than by sponsoring organizations. Updating description for accuracy.

**Resources:** Current faculty already deliver this course in load on an ad hoc basis. No new resources are required.

**Date:** January 18, 2018  
**To:** WPI Faculty  
**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)  
**Re:** Motion to drop OIE541 Operations Risk Management and to add OIE542 Risk Management and Decision Making

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move to drop OIE541 Operations Risk Management and to add OIE542 Risk Management and Decision Making, as described below.

**Current Course to be dropped:**

**OIE541 Operations Risk Management**

Operations risk management deals with decision making under uncertainty. It is interdisciplinary, drawing upon management science and managerial decision-making, along with material from negotiation and cognitive psychology. Classic methods from decision analysis are first covered and then applied, from the perspective of business process improvement, to a broad set of applications in operations risk management and design including: quality assurance, supply chains, information security, fire protection engineering, environmental management, projects and new products. A course project is required (and chosen by the student according to his/her interest) to develop skills in integrating subjective and objective information in modeling and evaluating risk. (An introductory understanding of statistics is assumed.)

**Proposed Course to be added:**

**OIE542: Risk Management and Decision Making**

Risk management deals with decision making under uncertainty. This course is interdisciplinary in nature, drawing upon management science and managerial decision-making, along with material from negotiation and cognitive psychology. Classic methods from decision analysis are first covered and then applied, from the perspective of business process improvement, to a broad set of applications in risk analysis and management. A variety of exercises are used to help students develop skills in integrating subjective and objective information in modeling and evaluating risk. (An introductory understanding of statistics is assumed.) Students who have taken OIE541 may not receive credit for this course.

**Rationale:**

The OIE faculty group requested these changes. The new course is based on the following. (1) The course content equally applies to project and programs as to operations, and therefore the word “operations” should be removed from the course title; (2) Almost half of the course covers techniques from decision analysis which should be reflected by the course title; and (3) A more descriptive course title may attract more students from other departments and programs.

**Impacts on students:** OIE 542 is a required course for all MSOAM students (replacing OIE541 which was also required for all MSOAM students). A more descriptive course title on their transcript may benefit students in their job searches.

**Resource Requirements:** No additional resources are anticipated.

**Implementation Date:** Academic Year 2018-2019.

**Date:** January 18, 2018

**To:** WPI Faculty

**From:** Committee on Graduate Studies and Research (Prof. Troy, Chair)

**Re:** Motion to limit the number of credits that can be taken by non-matriculating students in the FSB

**Motion:** On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends, and I move that the Foisie School of Business adopts the following rule: *Non-matriculated students may not enroll in more than six credit-hours of graduate course work prior to seeking enrollment in a graduate program.*

**Rationale:**

The Foisie Business School currently has an internal non-matriculated policy allowing students to take two courses (6 credit hours) in our programs prior to seeking enrollment. This is different from the university policy allowing students to take up to four courses as a non-matriculated student prior to seeking enrollment.

In order for the FBS policy to be upheld by the registrar, and to appear in the graduate course catalog, it must first be approved by CGSR.

Currently the FBS admissions office is manually tracking non-matriculated students. By having the policy approved by CGSR we can refer students to the graduate student catalog for the policy details. Additionally we will have the help of the registrar in tracking these students and ensuring they are not able to register for more than two courses as a non-matriculated student.

The rationale behind wanting FBS students to take only six (6) credit-hours or two (2) classes (versus the four classes the university currently allows) is that once a student takes four courses they typically request a GMAT/GRE waiver indicating that they did well in their courses. We have strict GMAT/GRE policies around waivers that abide by AACSB standards. Additionally, we need a high number of students to submit GMAT/GRE scores in order to be competitive in our rankings. And finally, should a student take four classes, do well, and then submit extremely low test scores they run the risk of spending a lot of time and money on four courses and then ultimately being denied from the program.