

WORCESTER POLYTECHNIC INSTITUTE

May 8, 2018

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

The ninth Faculty meeting of the 2017-2018 academic year will be held on **Tuesday, May 8, 2018** at **11:00 am** in **Olin Hall 107**, with refreshments at 10:45 am.

1. Call to Order M. Richman
 - Approval of the Agenda
 - Consideration of the Consent Agenda (including Minutes from 4-12-18)
2. Announcements
3. President's Report L. Leshin
4. Provost's Report B. Bursten
5. Committee Business:
 - Committee on Academic Operations (CAO) A. Zeng
 - May 2018 Undergraduate Student Graduation List
 - Committee on Graduate Studies and Research (CGSR) K. Troy
 - May 2018 Graduate Student Graduation List
 - Committee on Governance (COG) M. Richman
 - Motion to approve a new WPI Sexual Misconduct Policy
 - Update on an Interim Faculty Conduct Policy
 - Committee on Appointments and Promotions (COAP) R. Datta
 - Motion to modify the procedure for providing feedback to faculty candidates who are denied promotion
6. Committee Report:
 - Committee on Governance (COG) S. Roberts
 - Committee on Appointments and Promotions (COAP) R. Datta
 - Draft Proposal: Associate Professor Mentoring Program (for discussion, only)
7. Special Report:
 - The Global School @ WPI: Strategies, Synergies and Structures B. Bursten
8. New Business
9. Announcements
10. Adjournment

TABLE OF CONTENTS
Faculty Meeting Materials, May 8, 2018

	Page
1. Faculty Meeting Minutes: April 12, 2018	4
2. Committee Business:	
Committee on Academic Operations (CAO)	
• Motion to approve the May 2018 Undergraduate Student Graduation List (see separate file)	
Committee on Graduate Studies and Research (CGSR)	
• Motion to approve the May 2018 Graduate Student Graduation List (see separate file)	
Committee on Governance (COG):	
• Motion to approve a new WPI Sexual Misconduct Policy	9
• Update on an <u>Interim</u> Faculty Conduct Policy	28
Committee on Appointments and Promotions (COAP)	
• Motion to modify the procedure for providing feedback to faculty candidates who are denied promotion	36
3. Committee Report:	
Committee on Governance (COG)	
Committee on Appointments and Promotions (COAP)	
• Draft Proposal: Associate Professor Mentoring Program	38
- Appendix B: Professional Development Plan (see separate file)	
4. Special Report:	
The Global School @ WPI: Strategies, Synergies and Structures	42
5. Appendix: Consent Agenda Motions	51
COG Motion:	
- to change the myWPI Policy to the Learning Management System Policy	52
CAP-CGSR Joint Motion:	
- to change fall and summer degree requirement deadlines and conferral dates	56
CAO-CAP Joint Motion:	
- to introduce a new <i>Category III</i> course designation	58
- to introduce new <i>Special Topics</i> courses	60
CAO Motions:	
- to add MA 1801 Denksport	63
- to add MA 4895 Differential Geometry	65
- to remove HI 2331 Science, Technology, and Culture in the Early American Republic	68
- to remove HI 2332 History of Modern American Science and Technology	69
- to add HI 2335 Topics in the History of American Science and Technology	70
- to remove HI 2352, HI 2353, HI 2354, and HI 2402	71
- to add HI 2350 Topics in the History of Science	72
- to remove HI 2401 and HI 2403	74
- to add HI 2400 Topics in Environmental History	75
- to add a Cyber Security concentration to the CS major	77

- to remove SD1520: System Dynamics Modeling	79
- to add SD2520: Modeling Economic and Social Systems	80
- to add ECON 2910/ETR 2910 Economics and Entrepreneurship	82
- to modify MA2071 Matrices and Linear Algebra I	84
- to add MA 2072 Accelerated Matrices and Linear Algebra	85
- to modify MA2073 Matrices and Linear Algebra II	87
- to modify the course name of MA4291 Applicable Complex Variables	88
- to add RBE 3100 Social Implications of Robotics	89
- to modify the undergraduate catalog for the addition of RBE 3100	92

CGSR Motions:

- to add ID 527: Fundamentals of Scientific Teaching and Pedagogy	94
- to modify description of Ph.D. degree requirements in Chemistry and Biochemistry	95
- to modify a graduate certificate in Life Science Management	96
- to modify the requirements for the MS degree in Systems Engineering	99
- to add a Ph.D. degree program in Statistics	101
- to remove ACC 503 and add ACC 500 and ACC 502	111
- to remove BUS 501 and add BUS 590	112
- to remove BUS 517 and add BUS 599	113
- to add BUS 595 The Edge of Technology in STEM Industries	114
- to remove FIN 501 and add FIN 504 and ACC 505	115
- to add FIN 503 Financial Decision-Making for Value Creation	117
- to remove OBC 500 and add OBC 505	118
- to remove OBC 501 and add OBC 506	119
- to remove OIE 500 and add OIE 501	120
- to revise the curriculum of the MBA degree program	121
- to add OIE500 as a prerequisite requirement for OIE542 and OIE 554	126
- to add MIS 585 User Experience Design	127
- to update Graduate Business Certificates	129

WORCESTER POLYTECHNIC INSTITUTE

Faculty Meeting Minutes

April 12, 2018

Summary:

1. Call to Order
2. Opening Announcements
3. President's Report
4. Provost's Report
5. Committee Report: COG
6. Committee Business: CTAF; CAP and CGSR; CGSR
7. Closing Announcements
8. Adjournment

Detail:

1. Call to Order

The eighth Faculty meeting of the 2017-2018 academic year was called to order at 3:20 pm in OH 107 by **Prof. Richman** (ME). The meeting agenda was approved as distributed and the consent agenda (including minutes from March 15, 2018) were approved with one item deleted for further consideration by CAO.

2. Opening Announcements

Prof. Richman (ME) reminded all in attendance that the Faculty Honors Convocation and Faculty Achievement Awards Ceremony would be held on Friday, April 27, 2018. He also invited everyone to adjourn to The Quorum directly following today's meeting.

3. President's Report

President Leshin encouraged everyone to participate in commencement activities this year. Marcia McNutt will be the speaker for the graduate commencement ceremony, and Margot Lee Shetterly will be the speaker for the undergraduate commencement. President Leshin introduced Patty Patria as WPI's new CIO and VP of IT. President Leshin also thanked Sia Najafi for his successful work as interim CIO.

President Leshin announced that the Board of Trustees had voted at its March retreat to support a new fundraising campaign. Over the next few months, detailed planning for the campaign will take place. In her central fundraising role, President Leshin will be on campus less frequently throughout the campaign. She explained that for the first few years, the campaign will be in a quiet phase that will indicate what our final fundraising goal should be. To make clear that the campaign is about moving the University forward in more ways than through philanthropy, the fundraising goal will include the revenues we attract through funded research.

President Leshin has just returned from an accreditation visit to Stevens Institute of Technology, and she made the point that learning about other institutions enables us to better evaluate ourselves.

4. Provost's Report

Provost Bursten reviewed the April 3 "Music and the Brain" symposium hosted on campus by Dean King who is working with several others to develop a neuroscience program at WPI. The Provost also described our third annual Advanced Biomanufacturing Symposium held on April 9 and attended by Massachusetts Secretary of Housing and Economic Development Jay Ash, and mentioned that we had also hosted the Commonwealth's Assistant Secretary of Climate Katie Theoharides on the same day. Provost Bursten described the Green Revolving Fund at WPI, in which we invest in efforts that will pay back later in increased sustainability. Next year, \$100K will be devoted to the fund, including \$30K to support a competition for up to three sustainability projects proposed by members of the WPI community. Prof. Mathisen (CEE) can provide further information on the fund and the competition.

Provost Bursten announced that 13 searches for tenured and tenure-track faculty members had been successfully completed. These recruits include seven women, five of whom are in engineering. **Prof. Roberts** (CHE) announced that Prof. Jennifer Wilcox will be returning to WPI as the Endowed Manning Chair in July 2018.

5. Committee Report COG

Prof. Richman (ME), for the Committee on Governance (COG), presented a revised draft of the proposed WPI Sexual Misconduct Policy. He reviewed the process that involved a working group of faculty members and trustees that iterated several times with COG before bringing a first draft to the Faculty in March, and then involved incorporating feedback from the community through further iteration between COG and the working group, and now involves soliciting further feedback from the community. The goal is to bring a final draft for faculty approval at the May 8 Faculty meeting.

Prof. Richman summarized the differences between the current draft and the one shared in March. These included: a clearer definition of sexual misconduct and consent (including a strict prohibition of sexual relationships between employees and undergraduate students); a requirement that supervisors report all violations; the designation of the Ombudspersons as confidential resource advisors; a requirement that the Respondent be consulted during the initial assessment; a clarification of how the pool of possible Judicial Panel members is constituted; examples of possible sanctions; clarifications of how administrators would be treated under the policy; requirements for written documentation at all stages of the process; and inclusion of explicit language concerning conflicts of interest, good faith participation, duties of promptness and confidentiality, and efforts to restore reputations. (See **Addendum #1** on file with these minutes.)

Prof. Gennert (CS) suggested that the list of Title IX Coordinators and Deputy Coordinators be moved to an appendix and/or to the WPI website. He also suggested making an exception for student-employees in the broad prohibition of relationships between employees and undergraduate students. Both Prof. Richman and **David Bunis** (University Counsel) agreed with both suggestions.

Prof. Sanbonmatsu (HUA), speaking from his experience as a current member of the Campus Hearing Board, was concerned that the current training documents given to members of the judicial panel do not include mention of sexual assault and place too high an emphasis on education of the parties as a primary goal of the judicial process. He also wanted the policy to include an explicit statement that the Title IX Coordinator is responsible for appropriate training. In addition, he asked if it were possible to include in the policy an evaluation mechanism that would assess the policy's effectiveness over time. **Melissa Pierce** (Title IX Coordinator, HR) indicated that she would like to modify the current training process. She also indicated that for assessment of the process, careful documentation is kept and both formal and informal climate surveys are conducted. She also indicated that she follows up with victims in sexual misconduct cases about every two months, but is hesitant to raise issues that they may no longer wish to address.

Prof. Hakim (ECE) was concerned that the policy might discourage faculty members from establishing otherwise healthy relationships with students. He was also concerned that the definition of "hostile environment" was too broad because it could be caused by behaviors that did not fall under sexual misconduct. **David Bunis** (University Counsel) clarified that because the policy was limited to sexual misconduct, the term "hostile environment" would have to be caused by such behavior to fall under the policy. Prof. Hakim was also concerned that the policy did not clearly describe the disciplinary action that would result from violations of confidentiality or acts of retaliation, for example. He did not think the policy clearly described the steps that would be taken by the University to restore someone's reputation, or the actions that would be taken if the University failed to do so. He also believed that visitors to the WPI campus should have the right to due process under this policy if they were accused of sexual misconduct. David Bunis explained that under the policy, the expectations of appropriate behavior extended to everyone on campus, including visitors. However, only people affiliated with WPI are entitled to the full process protections included in the policy.

Prof. Richman concluded by explaining that the purpose of waiting until May to vote on the policy was to collect further input so that it could be improved further.

6. Committee Business

CTAF

Prof. Rulfs (BBT), for the Committee on Tenure and Academic Freedom (CTAF), moved that the procedures regarding annual reviews of non-tenured, tenure-track faculty be modified (in the Faculty Handbook, Part Two, Section 1.B.2), as described in the materials distributed. She explained that the intent was to provide more consistency in the annual tenure review process (and, as a result, in the mentoring of tenure-track faculty members) as it is implemented across departments.

Prof. Gericke (CBC) asked if consideration had been given to including peer review of teaching in the annual tenure reviews. **Prof. Rulfs** explained that the motion was intended to clarify the tenure review process and not the tenure review policy.

The motion **passed**.

CAP/CGSR

Prof. Humi (MA), for the Committee on Academic Policy, and **Prof. Troy** (BME), for the Committee on Graduate Studies and Research moved that:

- a) the current form used for the student course report system be modified to a shorter version (included in the distributed meeting materials) with greater options for faculty customization;
- b) the distribution of the forms be entirely electronic beginning in A-term of 2018 for a three-year pilot period; and
- c) both CAP and CGSR be charged with evaluating the success of the pilot during AY 2020-21 and recommending any adjustments in time for implementation in A-term 2021.

Prof. Rulfs, as the Chair of the task force that looked into the on-line course evaluation option, explained that the shorter survey (from 33 questions to 16) would improve the response rate. The recommendation of the task force is to retain the four open response questions and to give instructors the option of adding more questions. The responses to both the open response questions and to the added questions will be made available only to the instructor. There will be a standard one-week long response period that will end at midnight of the last day of the term. It is suggested that class time be set aside to encourage students to complete the evaluations. The newest flexible version of "Class Climate" is the software that can be integrated with Canvas and will be used to collect and analyze the data. Data reported will include appropriate university averages so that the results can be interpreted in proper context, including when used in tenure and promotion deliberations.

Prof. Heilman (CBC) was in favor of moving to online evaluations. He asked about how certain questions were chosen for removal. **Prof. Rulfs** explained that faculty members and students were surveyed, and evaluation questions were retained only if they were viewed as useful by 66 percent (or more) of respondents. But the questions removed in the default form (along with any others) can be added by individual instructors.

Prof. Joanne Whitefleet-Smith (BBT) asked whether the time period for responses could be customized for courses that did not run on a standard term-basis. **Kristin McAdams** (Dir. Acad. Prog.) explained that it was possible to do so.

Prof. Cocola (HUA) thought that for department tenure committees, in particular, eliminating question #14 (about the amount of reading and assigned homework) would make it difficult to interpret the responses to question #26B (about the amount of time spent on class work outside of class). Similarly, eliminating question #24 (i.e. What grade do you think you will receive in this course?) will make it difficult to interpret the responses to question #23 (about the impartiality used in grade determination).

Prof. Boudreau (HUA) moved to amend the motion by adding back questions #14 and #24 to the standard survey. The motion was seconded.

Prof. McNeil (ECE) asked if, when analyzed, the responses to one question could be correlated with the responses to another. **Prof. Rulfs** indicated that it would be possible to do so.

Prof. Gaudette (BME) was in favor of the amendment for the benefit not only of instructors, but also for students who may use the information to select courses. **Prof. Rulfs** pointed out that only 39 percent of the 180 students who responded to the survey thought question #24 was important.

The amendment to the motion (to restore questions #14 and #24) **passed**.

Prof. Billiar (BME) asked if there were data available that suggested that the response rate decreased as the number of questions increased. **Prof. Rulfs** indicated that such evidence was cited in the report of task force included in the meeting materials.

Prof. Sanbonmatsu (HUA) moved that question #26B (about the amount of time spent on class work outside of class) be used as the first question in the default survey, with all other questions to follow in their current order. The motion was seconded. He reasoned that questions having to do with self-reflection should come first in the survey.

Prof. Doyle (SSPS) observed that good survey practice is to pose general questions before specific questions. **Prof. Hansen** (HUA) agreed with Prof Doyle. In his view, the survey is designed properly and explained that he tells students that the only questions that matter to anyone but the instructor are questions #1, #2, and #9.

The motion to make question #26B first on the survey **did not pass**.

Prof. Gaudette (BME) was in favor of the main motion but wanted it to be clear that while 80 percent of the students who responded to the survey were in favor of moving to an online course evaluation system, only about 20 to 25 percent of our students responded to the survey.

Prof. Doyle (SSPS) spoke in support of the motion, but was concerned that – compared to the current paper surveys - there would be far more inconsistency in the process of administering of the online surveys because the efforts and methods that might be used to ensure high response rates, for example, could vary widely from one instructor to another. **Prof. Rulfs** pointed out that in our own pilot program involving the use of online course evaluations, the results indicate that while the response rates declined significantly (roughly from 78 percent to 47 percent), the question-by-question rating averages declined by at most 7 percent. She also pointed out that there is considerable variation in the method of administration of the paper surveys, as well.

Prof McNeil (ECE) observed that the data regarding the response rate will be available when we judge the success of the online evaluation process. **Prof. Rulfs** pointed out that response rates could be monitored by the instructor throughout the week-long response time.

Prof. Rahbar moved to call the question. The motion was seconded and **passed**.
The main motion (amended to include questions #14 and #24) **passed**.

CGSR

Prof. Troy (BME), for the Committee on Graduate Studies and Research, moved that the Academic Standards for graduate students be revised to provide earlier warning to students who are not achieving academically and to ensure that the highest quality graduate students continue studies in our graduate programs, as described in detail in the meeting materials. **Prof. Troy** explained that under our current system, graduate students who have taken 12 or more credits whose GPAs fall below 2.65 may only take courses on a pass/fail basis, have no clear path to improve their academic status, and may not have enough time left to reach the 3.0 GPA required to graduate. The proposed policy places students on academic warning as soon as their GPAs fall below 3.0, and subsequent classifications (satisfactory progress, academic warning, academic probation, or dismissal) are primarily based on changes in the GPA from semester to semester. Students would also be dismissed if they earned a grade lower than C in three or more courses. (See **Addendum #2** on file with these minutes.)

A motion to extend the meeting by five minutes was seconded and **passed**.

Prof. McNeill (ECE) clarified that if the GPA were to remain unchanged from one semester to another, then the student's academic status would not change.

Prof. Demetriou (ME) asked about a hypothetical student who was dismissed for having more than three grades below C, but whose GPA were higher than 3.0. **Prof. Troy** suggested that such a case would be rare and pointed out that such a student could appeal their dismissal.

The motion **passed**.

7. Announcement

Dean Snoddy announced that the deadline to order regalia for commencement was set April 13.

Prof. Richman urged all those in attendance to reconvene at the Quorum for a social break before heading home.

8. Adjournment

Meeting adjourned at 4:55pm.

Respectfully submitted,

Mark Richman
Secretary of the Faculty

Addenda on file with these minutes:

1. **Addendum #1 COG Presentation – Proposed New Sexual Misconduct Policy – April 12 2018**
2. **Addendum #2 CGSR Presentation –Academic Standards for Graduate Students – April 12 2018**

Date: May 8, 2018
To: WPI Faculty
From: Committee on Governance (Prof. Gaudette, Chair)
Re: Motion to adopt a new WPI Sexual Misconduct Policy

Motion: On behalf of the Committee on Governance, I move that the proposed WPI Sexual Misconduct Policy (included as an Attachment to this motion) replace:

- a) the current faculty-approved “WPI Sexual Misconduct Complaint Procedures: Faculty” in Part Two, Section 4.F of the Faculty Handbook; and
- b) the current “Interim WPI Sexual Misconduct Policy,” which is the earlier draft of the proposed policy discussed at the March 15, 2018 Faculty meeting and approved by the Board of Trustees on March 2, 2018.

Rationale:

The main purpose of this motion is to establish a *single* WPI Sexual Misconduct Policy that would apply to all faculty members, staff members, and students. Currently there are three separate policies for these three constituencies.

In addition, the proposed policy brings WPI’s sexual misconduct policies up-to-date in the following ways:

- 1) Provides a current definition for “sexual misconduct” in its varied manifestations;
- 2) Provides a definition of “consent” and includes guidance in determining if consent has been given;
- 3) Clarifies the policy on sexual and romantic relationships with undergraduate students, graduate students and supervisees;
- 4) Clarifies the obligations of WPI employees to report violations of the policy;
- 5) Identifies specific confidential resource advisors who are not required to report violations;
- 6) Describes a mechanism by which violations of the policy may be reported anonymously;
- 7) Relies on *qualified* investigators to carry out impartial fact-finding investigations while remaining neutral with respect to questions of responsibility and sanctions;
- 8) Relies on a Judicial Panel - chosen from a pool of faculty members, staff members, and students *who have previously received appropriate orientation and training* – to resolve questions of responsibility and sanctions;
- 9) Extends to the Complainant an option to appeal the Judicial Panel’s decisions concerning responsibility and/or sanctions.

In the case when the Respondent is a faculty member, there are three significant differences between the procedures described in the proposed procedures and those described in the current faculty-approved procedures:

1) *Investigation:*

In the proposed procedures, the investigation is carried out by a qualified investigator chosen by the Title IX coordinator in collaboration with the Secretary of the Faculty.

By contrast, **in the current faculty-approved procedures**, the investigation is carried out by a committee of five faculty members chosen by the Secretary of the Faculty and the Chair of the Faculty Review Committee (FRC). However those faculty members in all likelihood would have had little or no experience in carrying out such an investigation.

2) Judicial Phase:

In the proposed procedures, the evidence (collected by the investigator) is reviewed, witnesses are questioned, and the decision concerning responsibility and sanctions is made by a five-member Judicial Panel consisting of staff members and at least three faculty members. The faculty members would be chosen from those elected by the faculty to the Campus Hearing Board (CHB), and all members of the Judicial Panel would have previously received appropriate orientation and training.

By contrast, **in the current faculty-approved procedures**, the same committee of five faculty members (described in item #1 directly above) that conducts the investigation (including interviews of witnesses) also decides the questions of responsibility and sanctions. However, after being chosen, the members of the committee who had not yet received previous Title IX training would first need to be trained appropriately. Moreover, the committee's judgment concerning responsibility and sanctions would serve only as recommendations to the Provost, who would make the final determination on these matters.

3) Appeals:

In the proposed procedures, the Judicial Panel's decision concerning responsibility and/or sanctions can be appealed by *either the Complainant or the Respondent for any reason*. The Appellate Officer (when the Respondent is a faculty member) is the Provost. Furthermore, if either the Judicial Panel or the Provost (as the Appellate Officer) recommends either dismissal or suspension, then the Respondent can appeal *both the finding of responsibility and the sanction* to the President. And if the President decides to impose a sanction of dismissal or suspension, then the Respondent can appeal the sanction to the Board of Trustees, which will render a final decision only after obtaining a recommendation from a separate five-member faculty committee chosen by the Chair of the Board and the Secretary of the Faculty.

By contrast, **in the current faculty-approved procedures**, the *Complainant has no right of appeal*. Moreover, the Respondent can *only appeal to the Board of Trustees*, and *the appeal can only be with respect to the sanction* when Provost decides to impose a sanction of dismissal. If four members of the five-member investigation committee disagree with the Provost's sanction, then the appeal is automatic. If the investigation committee agrees with the Provost, then the choice to appeal is made by the Respondent. In either case, unlike in the proposed policy, the Chair of the Board renders a final decision without relying on an additional recommendation from a separate faculty-member committee.

Finally, by having the Faculty approve a sexual misconduct policy that the will also be approved by the WPI Board of Trustees, the proposed policy will automatically reconcile differences that now exist between the policy approved by the Faculty in January 2014 and the policy approved by the Board in December 2013.

Attachment

Note: Text that has been modified or added to the draft discussed at the April 12 Faculty meeting is in track changes.

~~DRAFT~~ WPI SEXUAL MISCONDUCT POLICY¹

Introduction: WPI's Commitment to a Campus Free from Sexual Misconduct

WPI is committed to maintaining a learning and working environment that is free from sexual misconduct, remedying the effects of such misconduct when it occurs, and preventing its re-occurrence. The prohibition of sexual misconduct applies to everyone at WPI, including all faculty members (including academic administrators), staff members (including non-academic administrators), students, trustees, alumni and all visitors to the WPI campus.²

Application of this Policy

This Policy applies whenever sexual misconduct occurs: a) on WPI property; or b) off WPI property if: i) the sexual misconduct was in connection with a WPI or WPI-recognized program or activity; or ii) the sexual misconduct may have the effect of creating a hostile environment for a member of the WPI community.

Definitions

a. Sexual Misconduct

“Sexual misconduct” is prohibited under this Policy. Sexual misconduct is a broad term that includes sexual harassment, sexual assault, sexual exploitation, gender motivated stalking, relationship abuse, engaging in certain inappropriate relationships, and retaliation against a person reporting sexual misconduct or participating in any investigation or proceeding related to this policy, all as defined below. This definition of sexual misconduct includes sexual assault (e.g. rape, fondling, incest, or statutory rape) as defined by the Clery Act, a federal law on campus safety and security. Sexual misconduct can occur between individuals who know each other, individuals who do not know each other, individuals who have an established relationship, and individuals who have previously engaged in consensual sexual activity. Sexual misconduct can be committed by persons of any gender identity, and it can occur between people of the same or different sex. Use of alcohol or other drugs will not excuse any behavior that violates this policy.

1. Sexual Harassment

Sexual Harassment is unwelcome conduct of a sexual nature, including such as ~~unwelcome~~ sexual advances, requests for sexual favors, or other verbal, nonverbal, or physical conduct of a sexual nature, when:

¹ This Policy supersedes all WPI policies dealing with Sexual Misconduct including the “Sexual Misconduct Policy” in the Student Responsibilities and Code of Conduct, the “Sexual Harassment Policy” in the WPI Employee Benefits and Policies Manual, and the “Sexual Harassment Policy” in the Faculty Handbook.

² Probationary staff, part-time employees, visitors, and employees subject to a letter of appointment or a collective bargaining agreement may be subject to a different disciplinary process in accordance with applicable policies and terms of their appointment.

Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or academic standing;

Submission to or rejection of such conduct by an individual is used as the basis for significant employment decisions (such as advancement, performance evaluation, or work schedule) or academic decisions (such as grading or letters of recommendation) affecting that individual;

The conduct is sufficiently severe or pervasive that a reasonable person would consider it intimidating, hostile, or abusive and it adversely affects an individual's educational, work, or living environment.

A partial list of examples of conduct that might be deemed to constitute sexual harassment if sufficiently severe or pervasive include:

Examples of verbal sexual harassment may include unwelcome conduct such as sexual flirtation, advances or propositions or requests for sexual activity or dates; asking about someone else's sexual activities, fantasies, preferences, or history; discussing one's own sexual activities, fantasies, preferences, or history; verbal abuse of a sexual nature; suggestive comments; sexually explicit jokes; turning discussions at work or in the academic environment to sexual topics.

Examples of nonverbal sexual harassment may include unwelcome conduct such as displaying sexual objects, pictures, or other images; invading a person's personal body space, such as standing closer than appropriate or necessary or hovering; displaying or wearing objects or items of clothing which express sexually offensive content; making sexual gestures with hands or body movements; looking at a person in a sexually suggestive or intimidating manner; or delivering unwanted letters, gifts, or other items of a sexual nature.

2. *Sexual Assault*

Sexual assault is any intentional sexual contact or activity that occurs without the consent of any individual involved.

3. *Sexual Exploitation*

Sexual Exploitation is purposefully taking sexual advantage of another person without consent. Examples of sexual exploitation include:

- Sexual voyeurism, such as watching a person undressing, using the bathroom or engaged in sexual activity without the consent of the person observed.
- Taking pictures or video or an audio recording of another person engaging in sexual activity or exceeding the boundaries of consent (such as allowing another person to hide in a closet and observe sexual activity or disseminating sexual pictures without the photographed person's consent).
- Engaging in sexual activity with another person while knowingly infected with human immunodeficiency virus (HIV) or other sexually transmitted disease (STD) without informing the other person of the infection.
- Administering alcohol or drugs (such as "date rape" drugs) to another person without their knowledge or consent.

4. *Gender-motivated Stalking*

Stalking is defined as a pattern of actions or course of conduct directed at a specific person over time that would cause a reasonable person to feel fear. This policy covers those instances where the stalking of a person is motivated by the person's real or perceived gender, sex, or sexual orientation. For the purposes of this definition, "course of conduct" means two or more acts, including, but not limited to, acts in which the stalker directly, indirectly, or through third parties, by any action, method, device, or means, follows, monitors, observes, surveils, threatens, or communicates to or about a person, or interferes with a person's property.

Stalking can take many forms. Examples include, but are not limited to, two or more instances of the following conduct (that also meet the definition of stalking above): following a person; appearing at a person's home, class or work; continuing to contact a person after receiving requests not to; leaving written messages, objects, or unwanted gifts; vandalizing a person's property; photographing a person; and other threatening, intimidating, or intrusive conduct. Stalking may also involve the use of electronic media such as the internet, social networks, blogs, cell phones, texts, or other similar devices (often referred to as cyber-stalking). Such conduct may include, but is not limited to, non-consensual communication, telephone calls, voice messages, emails, texts, letters, notes, gifts, or any other communication that are repeated and undesired.

5. *Relationship Abuse*

Relationship abuse is defined as behavior that serves to exercise control and power in an intimate relationship. The behaviors can be physical, sexual, psychological, verbal and/or emotional. Relationship abuse can occur between current or former intimate partners who have dated, lived together, have a child together, currently reside together on or off campus, or who have otherwise connected through a past or existing relationship. It can occur in opposite-sex and same-sex relationships.

Examples of relationship abuse include but are not limited to: attempting to cause or causing bodily injury by hitting, slapping, punching, hair pulling, kicking, sexual assault and/or other forms of unwanted physical contact that cause harm; knowingly restricting the movements of another person; isolating or confining a person for a period of time; controlling or monitoring behavior; being verbally and/or emotionally abusive; and exhibiting extreme possessiveness or jealousy.

6. *Sexual or Romantic Relationships in the Workplace or Academic Environment* *Inappropriate Relationships*

With undergraduate students. Except in rare and unusual circumstances involving preexisting relationships, sexual and amorous-romantic relationships between WPI employees³ and undergraduate students are inappropriate and are prohibited.

With graduate students. Implicit in the area of professionalism is the recognition by those in positions of authority that in relationships with graduate students there is

³ The term "employees" in this context does not include students who are employed by the University (e.g. TAs, RAs, PLAs, undergraduate Student Assistants, and work-study students).

always an element of power and consent to a romantic relationship that may not be valid where either person in the relationship has direct or indirect power or control over any aspect of the other person's academic or employment environment. Therefore, sexual and romantic relationships between employees and graduate students are prohibited where there is a supervisory relationship between the employee and the graduate student.

With supervisees. It is incumbent upon members of the WPI community to refrain from abusing, and seeming to abuse, the power with which they are entrusted, because relationships between supervisors (including TA's and RA's) and supervisees are fundamentally asymmetric in nature, may be the product of subtle or not-so-subtle coercion, or may lead to favoritism for the subordinate. If a student employee (i.e. TA, RA, PLA, undergraduate student assistant, or work-study student) is assigned to a course and has a preexisting sexual or romantic relationship with one of the enrolled students, he or she is obligated to inform the instructor of the course so that alternative arrangements can be made.

7. Retaliation

Retaliation means any materially adverse action or threat taken or made against an individual, including through third parties and/or legal counsel, for making a report of misconduct or participating in any investigation or proceeding related to this policy. Retaliation includes threatening, intimidating, harassing, or any other conduct that would discourage a reasonable person from engaging in activity protected under this policy, such as seeking services, receiving interim protective measures and accommodations, and/or reporting misconduct. Retaliation includes maliciously and purposefully interfering with, threatening, or damaging the academic and/or professional career of another individual before, during or after the investigation and resolution of a report of misconduct under this policy in response to and/or on account of the report of misconduct. This provision only applies to reports made or information provided in good faith, even if the facts alleged in the report are determined not to be accurate. ~~Any person who retaliates against an individual reporting sexual misconduct, or filing a sexual misconduct complaint, or participating in a sexual misconduct investigation is subject to disciplinary action up to and including expulsion or termination.~~

b. Consent

1. *What is consent?*

Consent is the positive, unambiguous, and voluntary agreement to engage in specific sexual activity throughout a sexual encounter. Consent must be an informed, deliberate and voluntary decision to engage in mutually acceptable sexual activity. It is the responsibility of the person who initiates sexual activity to make sure consent is received from any other person(s) involved. WPI recognizes that there are a wide variety of sexual interactions, that there is no single way to communicate consent, and that context matters. At all times, each party is free to choose where, when, and how they participate in sexual activity. Accordingly, when evaluating whether sexual activity was consensual, WPI will consider the entirety of the sexual interaction and the relevant circumstances.

Consent is active not passive. Individuals should be able to clearly articulate why and how they believed they received consent and what they considered to be indications of consent as they engaged in sexual activity. Consent must be received for each sexual act. It is important to remember:

- Consent to one sexual act does not constitute or imply consent to another act.
- Previous consent does not imply consent to future sexual activity.
- Consent cannot be assumed based on the parties' relationship or sexual history.
- Consent can be withdrawn at any time before or during sexual activity.

2. *What is Not Consent?*

Consent may not be inferred from silence, passivity or a lack of objection. The absence of a negative response, such as silence or a failure to resist, does not equal consent. Some behaviors and comments that do not indicate affirmative consent include but are not limited to:

- "I don't know"
- "Maybe"
- A head shake
- Lack of objection
- Not fighting back
- A verbal "no" that may sound indecisive or insincere

3. *Consent Can Never Be Given By:*

- Someone who is incapacitated. It is a violation of this Policy to engage in sexual activity with a person who an individual knew or should have known was incapacitated. A person can be incapacitated through the use of drugs, alcohol or any other intoxicating substance, medications or when they are unconscious, asleep or otherwise unaware that sexual activity is occurring.
- Someone under the legal age of consent. The legal age of consent in the Commonwealth of Massachusetts is sixteen (16).
- Someone who is mentally disabled or cognitively impaired. It is a violation of this Policy to engage in sexual activity with a person whose mental disability or cognitive impairment renders them incapable of giving consent and the disability/impairment is known or should have been known to the non-disabled sexual partner.

4. *Consent and the Use of Alcohol or Drugs:*

The use of alcohol or drugs does not relieve an individual of the obligation to obtain consent before initiating and/or engaging in sexual activity.

Obligations of Employees to Report Sexual Misconduct

a. Responsible Employees

1. All employees (except Confidential Resource Advisors; identified below) who learn of a violation of this Policy involving students are required to immediately report such information to the Title IX Coordinator or a Deputy Coordinator.

2. All supervisors (except Confidential Resource Advisors) who learn of a violation of this Policy are required to immediately report such information to the Title IX Coordinator or Deputy Coordinator.
3. Employees will receive regular training in their duty to report sexual misconduct.

b. Confidential Resource Advisors

The following employees, who will receive regular training, may serve as confidential advisors for students and are not required to report violations of this Policy:

1. Employees of Student Health Services.
2. Employees of the Student Development and Counseling Center.
3. A chaplain or religious advisor working at WPI.
4. WPI Ombudspersons and any other individual with appropriate training who is specifically appointed by WPI for the purpose of serving as a confidential resource advisor.

Resources Available in Cases of Sexual Misconduct

Anyone who has experienced sexual misconduct or is aware of someone who may have been the victim of sexual misconduct is strongly encouraged to report such misconduct and to take advantage of resources available on campus and in the community.

a. Reporting Sexual Misconduct Immediately After a Sexual Assault

If you or someone you know has recently been assaulted:

- Go to a safe place as soon as you can.
- In an emergency, call campus police at 508-831-5555, or 5555 from a campus phone or via a blue light phone on campus. If it is not an emergency, then call the WPI Police Department at 508-831-5433.
- Seek medical attention. The WPI Student Development and Counseling Center offers counseling appointments to all students. The Emergency Room at UMass Medical Center offers services and support for people who have experienced sexual assault. WPI Police can provide students with an escort to the hospital.
- Try to preserve all physical evidence.
- If you are the victim of a sexual assault, try not to wash your face or hands, bathe, brush your teeth, drink or eat, douche, or change clothes if you can avoid it. If you do change your clothes, put all clothing you were wearing at the time of the assault in individual paper bags (not plastic). It is important to preserve as much evidence as possible should you later decide to press criminal charges.

b. Reporting Sexual Misconduct to the Title IX Coordinator and or Deputy Title IX Coordinators

The Title IX Coordinator plays an integral role in carrying out the University's commitment to provide a positive learning, teaching and working environment free from

sexual misconduct and discrimination. Any student, faculty member, or staff member who has concerns about sexual misconduct is encouraged to seek the assistance of those listed below. They will provide information on resources for assistance and options to address concerns. Those options may vary depending on the nature of the situation, whether the individuals involved are students, faculty, or staff members, the wishes of the individuals involved regarding confidentiality, and whether the individuals involved prefer to proceed formally or informally.

During business hours, anyone who has experienced sexual misconduct or is aware of someone who may have been the victim of sexual misconduct may contact the Title IX Coordinator or any Deputy Title IX Coordinator. Contact information for the Title IX Coordinator and Deputy Coordinators can be found [HERE](#).

c. Reporting Sexual Misconduct Anonymously

If you are concerned about a visitor, student, faculty, or staff member who may have experienced ~~is the victim of~~ a Title IX violation or has may have committed a Title IX violation, you may report the situation anonymously by clicking [HERE](#). In that case, you will not be contacted and will remain anonymous. If you wish, you may include your contact information, so we may contact you if we have additional questions.

NOTE: This is not a system to use for emergencies. In case of an emergency, regardless of time of day, in which someone’s well-being is in jeopardy, please contact Campus Police at +1-508-831-5555.

Initial Steps and Investigation of Reports of Sexual Misconduct

a. Initial Steps

All reports of alleged sexual misconduct will be referred to the Title IX Coordinator. Within five business days of receiving such a report, the Title IX Coordinator or their designee⁴ will take several initial steps. These initial steps will include, but are not limited to, the following:

1. Encouraging the person who has allegedly experienced sexual misconduct (the “Complainant”)⁵ to meet with the Title IX Coordinator to discuss the nature and circumstances of the reported conduct. If the person who has reported the alleged sexual misconduct is not the person who has experienced the sexual misconduct, then the person who has made the report should have the opportunity to meet with the Title IX Coordinator to discuss the nature and circumstances of the reported conduct.
2. Notifying the Complainant about their rights and options under this Sexual Misconduct Policy, including the right to report and the right to decline to report the matter to campus police and/or to local law enforcement, the options for reporting to WPI, and the availability of medical treatment, counseling, and other resources, both on and off campus.

⁴ As necessary and appropriate, the Title IX Coordinator may designate a Deputy Title IX Coordinator or another qualified person to assume the Title IX Coordinator’s responsibilities under this Policy.

⁵ Throughout this Policy, the term “Complainant” refers to the person who experienced sexual misconduct regardless of who reported the misconduct.

3. Meeting with the person who has allegedly committed sexual misconduct (the “Respondent”) to explain the allegation and to get their version of events, and providing that person with the option and adequate opportunity to provide a written response to the allegations. The Respondent should be notified about their rights under this Sexual Misconduct Policy, and about the availability of counseling and other on- and off-campus resources.
4. If the Complainant requests that the process not move forward, the Title IX Coordinator will weigh that request against WPI’s obligation to address any risk of harm to the Complainant or other individuals in the community, and the nature of the incident or conduct at issue. If, following the receipt of an alleged violation of this Policy, the person who allegedly experienced sexual misconduct declines to participate in the investigation or resolution process or requests that the process not proceed, the Title IX Coordinator may decide to close the investigation or choose to continue the process without the person’s participation.
5. Assessing the reported conduct to determine whether the circumstances warrant appropriate interim measures including, but not limited to, no-contact orders, interim suspension of a student, deadline extensions, reassignment of housing, or placing an employee on paid leave prior to completing an investigation. Failure to comply with an interim measure may lead to additional disciplinary action.
6. Assessing whether the behavior alleged constitutes a violation of this Policy and is sufficiently credible and specific so that potential evidence of such misconduct may be identified. If the Title IX Coordinator determines that the reported conduct would not trigger this Policy, they will advise both the Complainant and the Respondent in writing, and based on the information gathered may also refer the reported conduct to the appropriate administrator or department for handling consistent with any other applicable policy. If the Title IX Coordinator determines that the reported conduct does fall under this Policy, then the case will proceed to the Investigation Phase, as described below.

b. The Investigation Phase

1. *Notice of an Investigation:* If it is determined that an investigation is required, the Title IX Coordinator will send a written notice to the Complainant (or “party”) and to the Respondent (or “party”) (collectively, the “parties”). The notice will include a sufficiently detailed description of the allegations, the portions of this Policy that are alleged to have been violated, and any interim measures in place about which either party should be made aware. This written notice does not constitute a finding or a determination of responsibility.

The notice will also state that if either party requires any kind of accommodation due to disability pursuant to the ADA or Section 504 of the Rehabilitation Act, it is the responsibility of that party to make the Title IX Coordinator aware of the need for an accommodation. The Title IX Coordinator will work with each of the parties and as applicable, Office of Disability Services (for students) and/or the 504 Coordinator (for employees) to ensure that appropriate accommodations are available.

2. *Information about Advisors:* Each party may have a single advisor present during any investigative proceeding, including any related meeting, interview, or hearing. Any person may serve as an advisor, including an attorney. Each party must provide the name and contact information of their advisor to the Title IX Coordinator within five business days of receiving notice of an investigation. Advisors may communicate with their advisee but may not speak or otherwise communicate on behalf of a party. Advisors are subject to the same confidentiality obligations applicable to others in attendance.
3. *Designation of Role of the Investigator:* The Title IX Coordinator ~~shall~~ will designate at least one unbiased, qualified investigator(s)⁶ to conduct a prompt, fair, and impartial investigation of the reported conduct and prepare a report of investigative findings (the “Investigative Report”).⁷ More than one investigator may be ~~assigned~~ designated or the investigation may be conducted by the Title IX Coordinator. Investigator(s) need not be employees of WPI. The Title IX Coordinator will provide each of the parties with the name of the Investigator(s). As soon as possible, but no later than three (3) calendar days after delivery of the identity of the Investigator(s), the parties should inform the Title IX Coordinator (in writing) of any potential conflicts of interest about the selected Investigator(s). The Title IX Coordinator will consider the nature of the potential conflict and determine if a change is necessary.⁸ The Title IX Coordinator’s decision (in appropriate collaboration with the Secretary of the Faculty, as described in footnote 9) regarding any conflicts regarding the investigator(s) is final.
4. *Nature of the Investigation:* The investigation will include separate interviews with the Complainant (unless that person chooses not to participate in the investigation), the Respondent, and any witnesses whom the Investigator(s) believe will provide necessary and relevant information. The investigation will include the review of documentation or other items relevant to the reported conduct.
5. *Identification of Potential Witnesses and Documentation:* The parties will have the opportunity to provide the Investigator(s) with written notice of the names and contact information of potential witnesses with whom they would like the Investigator(s) to speak together with a brief explanation of how the persons, documents, and/or items are relevant to the reported conduct. The parties may also provide the Investigator(s) with any documentation or other items or questions they would like to be considered or posed to any witness or the other party. The

⁶ The investigator shall be deemed “qualified” if the individual has received training in conducting Title IX investigations and has the requisite professional experience to conduct the investigation.

⁷ If the Respondent is a faculty member, the Title IX Coordinator will collaborate with the Secretary of the Faculty, in appointing the Investigator and in rendering a decision regarding any potential conflicts of interest involving the investigator.

⁸ If the Respondent is a faculty member, the Title IX Coordinator will collaborate with the Secretary of the Faculty in making a decision about whether or not to disqualify an Investigator when the faculty member objects based on a potential conflict of interest. If a party raises an objection based on a potential conflict of interest involving the Title IX Coordinator serving as investigator, the role of the Title IX Coordinator in deciding about whether a conflict exists, and whether another investigator should be designated, will be assumed by the President.

Investigator(s) will exercise discretion in determining what information and questions to consider and which potential witnesses will be interviewed.

6. *Participation in the Investigation:* Participation in the process (by providing information to the Investigator(s), responding to questions from the Investigator(s), responding to information provided by a party or a witness, etc.) is not required, but the Investigation will proceed even if a party or witness declines to participate. During the investigation, the parties will have an equal opportunity to participate. If a party initially declines but then later in the Investigation decides to participate, the Investigator(s) may consider that timing when determining the credibility of the information/evidence offered and the weight to give that information/evidence.
7. *Investigation Prohibitions:* The Investigator(s) will not gather or consider information related to either party's sexual history with other persons except as relevant to the alleged violation, as determined in the sole discretion of the Investigator(s).
8. *Coordination with Law Enforcement:* The Investigator or designee may contact any law enforcement agency that is conducting its own investigation to inform them that a WPI investigation is also in progress; to ascertain the status of the criminal investigation; and to determine the extent to which any evidence collected by law enforcement may be available to WPI in its investigation. At the request of law enforcement, the Investigator may delay the investigation temporarily while an external law enforcement agency is gathering evidence. The Investigator will generally resume the investigation when notified that law enforcement has completed the evidence-gathering stage of its criminal investigation.

c. Optional Informal Resolution Procedure

At any time prior to convening a Judicial Panel (defined below), a Party may contact the Title IX Coordinator to request an informal resolution of a complaint. All parties and the Title IX Coordinator must agree to informal resolution for this option to be used. If the Title IX Coordinator determines that informal resolution is appropriate, the Title IX Coordinator will attempt to reach a resolution. The allegation will be deemed resolved when the parties expressly agree to an outcome that is acceptable to them and is approved by the Title IX Coordinator in consultation with other appropriate administrators.

Procedures Following the Investigative Phase of a Title IX Investigation

- a. **The Investigative Report.** After the Investigation Phase, the Investigator(s) will deliver an Investigative Report to the Title IX Coordinator. The Investigative Report should include a description of the alleged sexual misconduct, and a summary of the information presented during the Investigation Phase including a section where the Investigator(s) point out relevant consistencies or inconsistencies (if any) between different sources of information. The Investigative Report will not include a recommendation or a determination as to whether a party has violated the Sexual Misconduct Policy or what sanctions may be appropriate. These determinations will be made by the Judicial Panel, as described below.

- b. **Review by the Parties.** Within five (5) business days of receiving the Investigative Report, the Title IX Coordinator will provide each party with a copy of the Investigative Report. Each party will have an opportunity to submit written comments to the Title IX Coordinator about the Investigative Report within five (5) business days of receiving the report. The time to submit written comments may be extended if the Title IX Coordinator concludes, in his/her sole discretion, that additional time is warranted. After reviewing the submissions, if any, from the parties, the Title IX Coordinator may determine that additional investigation is required, in which case the Investigator will supplement the Investigative Report and submit a final Investigative Report to the Title IX Coordinator. Any submissions made by either party, as well as any other documentation deemed relevant by the Investigator(s), will be attached to the Investigative Report. Within three (3) business days of receiving the final Investigative Report, the Title IX Coordinator will provide each party with a copy of the final Investigative Report.
- c. **Convening the Judicial Panel.** The Title IX Coordinator will convene a five-member Judicial Panel (the “Judicial Panel”) from a previously established pool of WPI faculty members elected by the Faculty to the Campus Hearing Board, staff members and students trained to decide sexual misconduct cases. The process for selecting staff members and students for the pool and the training process for all members of the pool is set by the Title IX Coordinator in collaboration with the Dean of Students Office, the Secretary of the Faculty, and the Human Resources Department. Students will only serve on panels where the Respondent is a student. If the Respondent is a student, the Judicial Panel should include a student member unless either party elects not to have a student serve on the Judicial Panel. If the Respondent is a faculty member, the Judicial Panel should include at least three faculty members. If the Respondent is a staff member, the Judicial Panel should include at least three staff members. The Title IX Coordinator will provide the parties with the names of the persons assigned as the Judicial Panel members for their case. As soon as possible, but no later than three (3) business days after delivery of the identity of the assigned Judicial Panel members, the parties should inform the Title IX Coordinator in writing of any conflicts of interest regarding the members assigned to the Judicial Panel. If a conflict of interest is raised regarding any of the individuals assigned to the Judicial Panel, the Title IX Coordinator will consider the nature of the conflict and determine if different individuals should be assigned to the Judicial Panel. The Title IX Coordinator should consult with other WPI personnel (and shall collaborate with the Secretary of the Faculty in the case of any conflict of interest raised by a faculty member who is a party in the case or with respect to a proposed Judicial Panel member who is a faculty member) to assess any conflicts of interest. The Title IX Coordinator’s decision (in appropriate collaboration with the Secretary of the Faculty) regarding any conflicts is final. The Title IX Coordinator will then submit the Investigative Report to the Judicial Panel members who will set a schedule for the Judicial Panel to convene a hearing or hearings.

d. Training Members of the Judicial Panel

Proper training is a vital aspect of the integrity of the judicial process. Therefore, all members of the Judicial Panel shall receive appropriate orientation and training, in keeping with applicable law and national best practices. Training and orientation shall be overseen and approved by the Title IX Coordinator.

e. **Role and Responsibilities of the Judicial Panel.** The Judicial Panel will obtain the Investigative Report from the Title IX Coordinator and convene to review the Investigative Report. The Judicial Panel, in its discretion, may request the Investigator(s) to attend a Judicial Panel meeting and answer questions. The Judicial Panel, in its discretion, may request the Investigator(s) to conduct additional investigation on specific points. The Judicial Panel must request the parties that participated in the investigation to appear and answer questions posed by the Judicial Panel. In addition, the Judicial Panel, in its discretion, may request to speak with any individual identified in the Investigative Report as well as any other individual with relevant information including individuals identified by the parties.

In general, a Complainant, witness, or Respondent who had the opportunity to participate during the Investigation but elected not to participate will not be permitted to participate verbally in the hearing or submit documents prior to the hearing. The Judicial Panel may permit a Complainant, witness, or Respondent who did not participate in the Investigation to participate in the hearing upon a showing of good cause. Exceptions of this nature are expected to be rare. The possibility of a law enforcement investigation or criminal court proceedings will generally not be considered good cause for an exception. In general, documents that have not been submitted during the Investigation may not be presented to the Judicial Panel, although the Judicial Panel may permit documents to be submitted that were not part of the Investigation upon a showing of good cause. The Judicial Panel may, however, consider the fact that the documents were not provided during the Investigation when determining the credibility of the information/evidence offered and the weight to give that evidence.

The Judicial Panel will decide by majority vote whether the Respondent is responsible for violating the Sexual Misconduct Policy, whether sanctions are appropriate and, if so, what those sanctions shall be. The Judicial Panel should state the basis for such decisions in a document maintained with records relating to the case.

e. **Standard of Proof.** All findings and determinations of responsibility and sanctions will be made using a preponderance of the evidence standard. This standard requires the determination of whether it is more likely than not that a fact exists or a violation of the Sexual Misconduct Policy occurred.

f. **Rights of the Parties.** Throughout the process, the parties shall have:

- the presumption of innocence;
- the opportunity to present evidence and respond to allegations of sexual misconduct;
- the opportunity to present a defense; and
- the opportunity to offer witnesses to be interviewed by the Investigator and questioned by the Judicial Panel. Neither party will be permitted to question or cross-examine the other party during any hearing held by the Judicial Panel.

g. **Sanctions.** A finding of responsibility for Sexual Misconduct can result in a wide range of sanctions, depending on the circumstances of a particular case. When the Respondent is a student, examples of sanctions include community service, counseling, probation, suspension from residence hall, suspension from the university for one or more terms,

expulsion from WPI. When the Respondent is a staff member or a faculty member, examples of sanctions include community service, counseling, probation, reassignment of duties, suspension with pay, suspension without pay, and termination of employment at WPI. In deciding an appropriate sanction, the Judicial Panel shall consider the following factors:

- the nature and circumstances of the misconduct;
- the impact of the misconduct on the person who experienced Sexual Misconduct;
- the disciplinary history of the Respondent;
- any other mitigating or aggravating circumstances in order to reach a fair and appropriate resolution in each case.

Notification of Decision

Upon reaching a determination of responsibility by majority vote, the Judicial Panel will provide a written notification of its decision to the Title IX Coordinator. The written notification will consist of a statement of the allegations, the Judicial Panel's factual findings, a decision as to whether the Respondent committed Sexual Misconduct, any sanction, and the rationale for these decisions. This written document shall be maintained with records relating to the case.

The Title IX Coordinator will forward to the parties simultaneously (i) the Judicial Panel's written notification described above; and (ii) the procedures for either party to appeal. The Title IX Coordinator will also inform other WPI officials as necessary and appropriate.

Appeals⁹

All appeals (in Section "a" below) and special appeals (in Section "b" below) should be delivered to the Title IX Coordinator who will transmit the appeal to the appropriate Appellate Officer.

a. Appeals Available to Either Party

Within seven (7) business days following the delivery of the notice of the Judicial Panel's determination of responsibility and sanction, either Party may appeal the decision and/or sanction to the appropriate Appellate Officer. If the Respondent is a student, the Appellate Officer is the Vice President for Student Affairs. If the Respondent is a faculty member, the Appellate Officer is the Provost (unless the Respondent is a full-time faculty member who the Judicial Panel has determined should be dismissed or suspended, in which case Section b. below applies). If the Respondent is a staff member, the Appellate Officer is the Vice President of Talent and Chief Diversity Officer.

If potential bias or conflict of interest is raised by either party regarding the Appellate Officer, the President will consider the nature of the potential bias or conflict (and, before deciding the matter, shall collaborate on the matter with the Secretary of the Faculty in the case of any conflict of interest raised by a party who is a faculty member) to assess any conflicts of interest and determine if a different individual should be assigned the role of

⁹All Appellate Officers, including the President and Board Chair, will receive Title IX training.

Appellate Officer. The Appellate Officer shall not be involved in the appeal until the President has resolved any questions of conflict of interest.

The party submitting the appeal must set forth in detail the grounds for appeal and must identify or attach all materials to be considered in the appeal process. The Title IX Coordinator will provide a copy of the appeal submitted by one party to the other party, and the other party may submit any additional materials that they wish to have considered in the appeal process within seven (7) business days of receipt of the appeal.

Within 14 business days after receiving an appeal (including additional materials, if any), the Appellate Officer will decide the merits of the appeal. In deciding the appeal, the Appellate Officer should review evidence considered by the Judicial Panel and may also consult with the Investigator(s), the Judicial Panel, or any other individual that the Appellate Officer deems appropriate.¹⁰ In a case where the Appellate Officer overturns a decision of the Judicial Panel, the Appellate Officer shall first consult with the Investigator(s), the Judicial Panel, and any other individual that the Appellate Officer deems appropriate.

Sanctions may be imposed, in full or in part, while an appeal is pending.

The decisions concerning responsibility and sanction, if any, and reasoning of the Appellate Officer(s) will be provided in a written document and will be final, except for circumstances that permit a Special Appeal, as described below. The written document shall be maintained with records relating to the case.

The Appellate Officer will forward the written document to the Title IX Coordinator, and the Title IX Coordinator will inform the parties simultaneously of the outcome of the appeal by forwarding to them the Appellate Officer's written document.

b. Special Appeals with respect to a Respondent who is a Full-Time Faculty Member Involving a Recommended Sanction of Dismissal or Suspension

The following appeal process applies in two cases:

1. As the sole method of appeal of a determination by a Judicial Panel that a Respondent who is a full-time faculty member should be dismissed or suspended; and
2. As an appeal of a determination by the Appellate Officer that a Respondent who is a full-time faculty member should be dismissed or suspended when that determination was made on appeal of a Judicial Panel's decision not to impose such sanctions on the Respondent.

Such appeals appeal will be subject to the following procedure:

The Respondent may appeal (both the finding of responsibility and the sanction) to the President within fourteen days after the Title IX Officer notifies the Respondent of the imposition of the sanction by the Judicial Panel or within fourteen days after the Appellate

¹⁰ Because the President may have a role in the appellate process involving full time faculty members facing suspension or dismissal, the appellate officer shall not communicate with the President regarding a full-time faculty member's appeal.

Officer imposes a sanction of suspension or dismissal on the first appeal. The appeal to the President should state why the Respondent believes the determination of responsibility and/or the sanctions were inappropriate. The appeal must also set forth in detail the grounds for appeal and must identify or attach all materials to be considered in the appeal process. The Title IX Coordinator will provide a copy of the appeal to the Complainant (if that person has not declined to participate in the investigative and judicial case). The Complainant may submit a response to the Title IX Coordinator within five days of receiving a copy of the appeal. The Title IX Coordinator will forward that response to the President.

Before the President decides the appeal, the President should consult with the previous Appellate Officer (if there were one) and the Secretary of the Faculty. The President should issue a decision within thirty days of receiving the appeal. If the decision will take longer than thirty days, the President should inform the parties of the additional time necessary to render a decision. The decisions concerning responsibility and sanction, if any, and reasoning of the President will be provided in a written document. The written document shall be maintained with records relating to the case.

The President will forward the written document to the Title IX Coordinator, and the Title IX Coordinator will inform the parties simultaneously of the outcome of the appeal by forwarding to them the President's written document.

If the President decides to impose a sanction of dismissal or suspension, the Respondent may appeal the sanction to the Board of Trustees within fourteen days after the Respondent is notified of the President's decision. If the Respondent appeals to the Board, the Chair of the Board, in collaboration with the Secretary of the Faculty, shall appoint a committee of five faculty members who will make a recommendation regarding the sanction imposed. The faculty committee will have access to all written reports and materials relevant to the case. The faculty committee will summarize the basis for its recommendation in a written report to the Board Chair within thirty days. The Board Chair should issue a written decision within thirty days of receiving the faculty committee's report. If the decision will take longer than thirty days, the Board Chair should inform the parties of the additional time necessary to render a decision. The decision and reasoning of the Board Chair will be provided in a written document. The written document shall be maintained with records relating to the case. The Board Chair will forward the written decision document to the Title IX Coordinator, and the Title IX Coordinator will inform the parties simultaneously of the outcome of the appeal by forwarding to them the Board Chair's written document.

The Board Chair's decision shall be final.

Timeframe for Completing the Investigation and Disciplinary Process

WPI will endeavor to complete the investigation and disciplinary Judicial Panel process, if any, within sixty (60) days of the delivery of the written notice of investigation to the parties. This period does not include the time for any appeal. Timeframes set forth in this Policy may be extended for good cause. WPI's overarching goal is that the process should be prompt, fair, and impartial.

Additional Matters

- a. **No Conflicts of Interest.** To the maximum extent practicable, steps should be taken to ensure an impartial and unbiased process, including participation of persons (including investigators) who: (1) have sufficient qualifications and training to carry out a thorough evaluation of the relevant information; and (2) have no unresolved personal, professional, or financial conflicts of interest with those involved with the inquiry or investigation that could affect their ability to be objective reviewers.

In cases where the Title IX Coordinator has a conflict of interest, a Deputy Title IX Coordinator appointed by the President will serve in the Title IX Coordinator's role. In cases where the Appellate Officer has a conflict of interest, the President shall appoint another Appellate Officer.. In cases where allegations of Sexual Misconduct have been brought against the Title IX Coordinator, the Vice President for Talent/Chief Diversity Officer, the Provost, or the President, then the process outlined in this policy will be adjusted accordingly to avoid any conflicts of interest. Except in cases involving the President, the President shall resolve any questions of bias or conflict of interest. The President's decision on such questions shall be final.

- b. **Duty of Honesty.** Any person who knowingly makes a false statement – either explicitly or by omission – in connection with any part of the process ~~may will~~ be subject to separate disciplinary action. A false or unfounded report of misconduct determined by WPI to have been made in bad faith and dishonesty is a serious offense. Such offenses ~~may will~~ themselves be investigated under the appropriate WPI policy -and may lead to disciplinary action, up to and including termination of employment or other affiliation with WPI. A report made in good faith is not considered false merely because the evidence does not ultimately support the allegation of violation of the Policy.
- c. **Good Faith Participation by the Parties and Witnesses.** The investigation is a neutral fact-gathering process. Although participation in the process (providing information to the Investigator(s), responding to questions from the Investigator(s), responding to information provided by a party or a witness, etc.) is not required, the Complainant, the Respondent, and all witnesses are expected to participate in good faith in the process set forth in this Policy, and they may be required by WPI to attend meetings related to the process. Any person who knowingly interferes with the reporting, investigation, or resolution of matters under this Policy may be subject to separate and/or additional disciplinary action
- d. **Duties of Promptness and Care.** Proceedings concerning Sexual Misconduct often raise difficult issues for those making the allegations, for those who are the subject of the allegations, and for those responsible for reviewing the allegations. Review of the allegations should therefore be conducted promptly and with care and sensitivity.

- e. **Duty of Confidentiality.** The University will administer any complaint of sexual misconduct using the process described in this Policy while providing the utmost degree of privacy and confidentiality possible under the circumstances of each matter and as permitted by law. All participants in the review process under this Policy are expected to maintain confidentiality to protect the privacy of all involved, to the extent possible and as permitted by law. Participants should keep in mind the affect that allegations can have on reputations, even if the allegations are not sustained by the proceedings. Thus, only those people with a need to know should be informed of a complaint. Any participant in the process set forth in this Policy who violates their duty of confidentiality may be subject to discipline under the appropriate WPI policy.
- f. **Recording the Proceedings.** The parties are not permitted to make video, audio, or other electronic, photographic, or digital recordings of any meetings or proceedings held under the Sexual Misconduct Policy or these procedures or the Investigative Phase. The Title IX Coordinator may make exceptions to this prohibition in limited circumstances if he or she concludes, in his or her sole discretion, that a recording is warranted, and upon written request of the party seeking the recording that explains the need for the recording.
- g. **Record Keeping.** The Title IX Coordinator should receive and maintain all records relating to proceedings under this Policy including all notices to and from the parties, all reports of Investigators, all decisions by a Judicial Panel, all appeals by the parties, and all decisions by Appellate Officers and others involved in the appeals process under this Policy.
- h. **Special Measures.** If there is no finding of Sexual Misconduct, the University should make all reasonable and practical efforts if requested and as appropriate, should be made as appropriate to protect and restore the reputation of the Respondent. All reasonable and practical efforts should be made to protect or restore the position and reputation of any complainant, witness or other participant in the case, and to counter potential or actual retaliation against these individuals. Any such concerns by the Respondent should be directed to the Title IX coordinator for follow up with other administrators as appropriate.
- i. **Information about Title IX.** Such information, including about filing a complaint with the Department of Education related to this Policy, may be obtained from the Office of Civil Rights at the United States Department of Education, 400 Maryland Avenue, SW Washington, DC 20202-1100; 800-421-3481 TDD: 800-877-8339; OCR@ed.gov.
- j. More information about Title IX at WPI may be found at <https://www.wpi.edu/offices/title-ix>.
- k. Evaluation. The Title IX Coordinator shall annually evaluate the effectiveness of the Policy with respect to meeting the needs of Complainants and Respondents during the process.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Governance (Prof. Gaudette, Chair)
Re: Interim Policy on Faculty Conduct

The policy attached below will be approved as an interim policy by the WPI Board of Trustees at the May 10-11, 2018 Board Meeting. It will be brought for information purposes only at the May 8, 2018 Faculty meeting.

The expectation is that next fall the Faculty will approve a revised Faculty Conduct Policy that the WPI Board will approve in December 2018. The interim Policy (below) will be in effect between the time the Board approves the interim policy on May 10-11, 2018 until it approves a revised faculty-approved by December 2018.

Differences between this interim policy and the Faculty Conduct Policy (in the Faculty Handbook, Part One, Appendix A, Section C, and also in Part Two, Section 1.E) approved by the Faculty on February 27, 2014 are denoted as follows: added text is in **bold underlined italics** and deleted text is ~~struck through~~.

WORCESTER POLYTECHNIC INSTITUTE **INTERIM POLICY ON FACULTY CONDUCT**

1. Introduction and Applicability

Members of the WPI faculty have traditionally conducted themselves in accordance with high standards of professional performance, ethical behavior and personal conduct. Nonetheless, from time to time it may be necessary to take action with respect to a faculty member who engages in conduct incompatible with the responsibilities of faculty membership or who fails to meet reasonable standards of performance or behavior. In recognition of this need, WPI has developed the following policy to respond to allegations of misconduct and to inform members of the community of the appropriate channels for bringing such matters to the attention of the University. This policy applies to tenured, tenure-track, and continuing non-tenure track members of the WPI faculty.¹¹

2. Definitions

a. *Complainant.* The individual, department or entity bringing forth an allegation of misconduct.

¹¹ This policy replaces and supersedes the prior policy entitled "**Worcester Polytechnic Institute Faculty Conduct Policy**" **approved by the Faculty on February 27, 2014.** "~~Policy and Procedure for Removal of Tenured Faculty Member for Cause~~" adopted in 1969. The procedures outlined herein apply to conduct predating the implementation date unless a proceeding has already been commenced under the old policy. All faculty members and instructional staff not covered by this policy should consult the Work Behavior/Discipline section of the Human Resources [Employee Benefits and Policies Manual](#).

- b. *Respondent.* The individual against whom an allegation of misconduct is made.
- c. *Grounds for use of this policy.* Standards for faculty conduct are derived from tradition and evolve with contemporary practice. The circumstances that may lead to disciplinary action cannot be anticipated in precise terms and thus grounds for discipline of faculty members are not made the subject of a precise or comprehensive statement. Generally, grounds or cause for discipline include but are not limited to: (a) neglect of duty, (b) personal misconduct¹² or neglect of standards expected in the WPI community¹³; (c) research misconduct¹⁴; (d) harassment¹⁵; (e) violation of WPI policies or rules¹⁶; (f) violation of federal, state or local laws relating to educational institutions; (g) conduct occurring outside the faculty member's scope of employment which affects or prevents the faculty member's ability to effectively perform his/her duties or which significantly damages the University's reputation or mission. In some instances a single instance of unacceptable activity by a faculty member may be severe enough to warrant discipline, including dismissal. In other instances a pattern of activity or the continued pursuit of unacceptable activity may warrant such discipline.

3. Sanctions

As with the definition of misconduct, it is not feasible or wise to automatically assign a specific sanction to particular misconduct. Generally, sanctions should be commensurate with the seriousness of the misconduct or cause. Seriousness, and thus the sanction, may be affected by the persistence of behavior in the face of prior warnings, counseling or sanction as well as the egregiousness of a particular action. Disciplinary actions fall into two categories:

Major sanctions include, but are not limited to, dismissal and/or removal of tenure, suspension without pay, reduction in academic rank, and public censure. A major sanction may not be imposed without following the investigatory process outlined below.

Minor sanctions are penalties less serious than a major sanction and include, but are not limited to, verbal or written reprimand, denial of eligibility for merit salary increase, and suspension with pay. Minor sanctions may be imposed administratively.

¹² Examples could include workplace violence; falsification of credentials; misuse of University resources or facilities; or refusal to perform reasonable, assigned duties.

¹³ See, for example, not limitation, the [AAUP Statement on Professional Ethics](#).

¹⁴ Discipline relating to research misconduct is handled pursuant to the WPI Policy on Research Conduct.

¹⁵ Discipline relating to sexual misconduct and sexual harassment is handled pursuant to the WPI Sexual Misconduct and Complaint Procedures: Faculty Policy, which has superseded and replaced the Sexual Harassment Policy in the Faculty Handbook. Discipline relating to harassment and/or discrimination in violation of other WPI policies or laws is handled under this policy.

¹⁶ See, for example, not limitation, the Faculty Handbook and listing of [University Policies](#).

Should the Respondent disagree with an imposed minor sanction, the Respondent can request in writing a full inquiry within 5 business days of being notified of the minor sanction.

The referral of a faculty member to the Employee Assistance Program, training, counseling, or coaching is not considered a disciplinary sanction under this policy.

4. Initial Inquiry

- a. In all situations, complaints or allegations of misconduct should be made in writing to the appropriate Dean.^{17,18}
- b. Complaints or allegations of misconduct are not subject to investigation if the alleged misconduct occurred more than six years prior to the date the allegation or complaint was received by the Dean.
- c. Within five business days of receiving an allegation of misconduct, the Dean will determine whether the behavior alleged meets the definition of misconduct and is sufficiently credible and specific so that potential evidence of such misconduct may be identified. If the behavior meets the definition of misconduct and is sufficiently credible and specific, the Dean shall forward a copy of the complaint or allegation to the person named therein (“Respondent”) along with a copy of this policy. The Dean shall, at the same time, forward a copy of the allegation to the Respondent’s department head or other immediate supervisor and immediately arrange to take all appropriate actions to obtain and secure all records and evidence needed to conduct the misconduct proceeding. Respondent shall have an opportunity to respond in writing to the Dean to any allegations raised. Responses must be received by the Dean within ten business days following the Respondent’s receipt of the allegation. Upon reasonable request, the Dean may choose to grant additional time. After considering the information provided by the Respondent, the Dean will reassess the credibility of the allegation. If the behavior meets the definition of misconduct and the allegation is sufficiently credible and specific an inquiry will be conducted. Otherwise the Dean will notify the Respondent in writing that the matter is dismissed.

At any time, the Respondent may meet with the Dean and Provost to mutually resolve the issues raised by the complaint or allegation. If the parties cannot agree on a settlement of the issues, the proceedings outlined in this policy shall continue.

- d. If the Dean determines that an initial inquiry will be performed, then the Dean, in consultation with the department head and, if the Dean deems appropriate, the

¹⁷ The appropriate Dean would be based on the home department of the faculty member named in the allegation. Complaints may be brought by an individual, a department, or the administration (“Complainant”).

¹⁸ If the Complainant is a Dean or the Provost, the Secretary of the Faculty shall perform the role of Dean in the initial inquiry. If the Respondent is a Dean or Provost then the President shall perform the role of the Dean in the initial inquiry.

Vice President of Human Resources, and/or such other persons as the Dean decides would be helpful to the inquiry process shall form a committee of three tenured faculty members. This “Inquiry Committee” will undertake an initial review of the evidence and may interview Respondent, complainant and other relevant witnesses, all on an individual basis.

- i. During the inquiry period, the identities of all parties involved will be held in confidence to the maximum extent that an effective inquiry allows.
 - ii. The entire inquiry process must be completed within sixty calendar days of the formation of the Inquiry Committee, unless the Dean determines, for good cause shown and documented on the record, that circumstances warrant a longer period.
- e. Based on the information gathered, the Inquiry Committee shall prepare a written preliminary report. The Dean and Respondent shall be provided a copy of the preliminary report. The Respondent will be provided an opportunity to respond or comment within ten business days.

After evaluating all of the information, the Inquiry Committee shall determine if there is substance to the complaint or allegations of misconduct and prepare a final report that includes any comments provided by the Respondent. The final report will be delivered to the Respondent and the Provost.

- f. If the Inquiry Committee determines that there is not substance to the allegations, ~~then the Provost will notify the Respondent in writing that the matter is dismissed.~~ **then the Committee should inform the Provost of its decision in writing. When the allegations are within the faculty’s area of primary responsibility (i.e. curriculum, subject matter and methods of instruction, research and those aspects of student life which relate to the educational process), the Provost should normally accept the Inquiry Committee’s decision. In rare instances and for compelling reasons, however, the Provost may reject the Inquiry Committee’s determination, in which case the Provost should state the reasons for the decision in a written document to be shared with the Inquiry Committee and the Respondent.**
- g. If the ~~Inquiry Committee~~ **Provost** determines that there is substance to the allegations of misconduct and ~~the Provost~~ decides that major sanctions are not supported, then minor sanctions may be imposed administratively after first providing the Respondent an opportunity to respond to the Provost. In this case, the Provost will determine the appropriate minor sanction only after reviewing and considering the response received from Respondent. Should the Respondent disagree with an imposed minor sanction, the Respondent can request in writing a formal investigation within 5 business days of being notified of the minor sanction.

- h. If the ~~Inquiry Committee~~ **Provost** determines that there is substance to the allegations of misconduct and ~~the Provost~~ determines that major sanctions might be appropriate then a formal investigation is warranted.
- i. No action shall be taken against the Respondent as a result of misconduct allegations prior to the conclusion of the appropriate investigation, unless it is determined that the presence of that person on campus or in class poses an immediate threat of physical or psychological harm to others. A suspension on this basis shall not result in a reduction of salary while an investigation is pending.

5. Procedures for Formal Investigations

- a. If a formal investigation is warranted, it shall begin within twenty-one (21) days of the conclusion of the initial inquiry. Before the investigation begins, the Provost shall notify the Respondent and Dean in writing that a formal investigation is in order.¹⁹
- b. All parties involved in a formal investigation and any subsequent proceedings shall, to the extent possible, endeavor to maintain confidentiality regarding the allegations, evidence, proceedings, and use care in balancing the need for disclosure and the privacy interests of the persons involved.
- c. The Provost will request the Secretary of the Faculty (SOF) and Chair of the Faculty Review Committee (FRC) to appoint a fact-finding committee (“the Committee”) of five elected FRC members who are unbiased in the investigation. (If there not 5 unbiased elected FRC members, then the SOF and FRC chair will appoint the required number of unbiased tenured faculty from outside the FRC. If the Respondent or Complainant is either the SOF or FRC chair, then the other will appoint the committee.) The Committee shall elect its own chair who shall be responsible for determining the manner in which the witness interviews and other procedures will be conducted by the Committee. The investigation will be completed within 120 days of the Committee’s formation, subject to external factors such as the availability of the parties, Committee members, witnesses and other evidence, and whether proceedings concerning the same allegations are pending in another forum.
- d. The Committee will be provided with all necessary information about the complaint or allegation and empowered to review relevant documents and interview witnesses. The Committee shall also interview Respondent, complainant and any other persons who have been identified as having relevant material information regarding the investigation. The Committee may seek assistance from WPI counsel in conducting its investigation and, as referenced earlier, from the Vice President of Human Resources.

¹⁹ If the Complainant or Respondent is the Dean or Provost, the President shall perform the roles of the Provost and Dean in the formal investigation..

- e. The Committee will pursue all significant issues and leads developed during the investigation, including evidence of additional instances of misconduct. The Committee will give Respondent written notice of new instances or allegations of misconduct not addressed during the inquiry or in the initial notice of investigation within a reasonable amount of time of deciding to pursue such allegations.
- f. The Committee will maintain records of its fact-finding proceedings, including copies of materials submitted by all parties, documentary evidence considered by the Committee, and a written record or summary of its witness interviews.
- g. Respondent may exercise the following rights during the investigation of the Committee:
 - 1. Respondent may have an advisor or legal counsel to assist or support them through the Committee investigation process.
 - 2. Respondent may challenge the composition of the Committee, if s/he believes that one or more of its members is biased.²⁰ The remaining members of the Committee shall determine whether bias exists and otherwise act to ensure its own credibility. The Committee shall request that the Chair of the FRC and the Secretary of the Faculty replace a committee member when appropriate.
 - 3. At the request of the Respondent, the Committee shall use its authority to obtain documents and evidence to interview witnesses who have information relevant to the defense of Respondent.
 - 4. Respondent is entitled to a presumption of innocence and need not prove his or her innocence to the Committee and to the Provost.
 - 5. Respondent shall have the opportunity to present a defense to the Committee, to present witnesses for interview by the Committee, and to respond to all allegations of misconduct.
 - 6. Respondent shall receive a copy of the draft report of the Committee and shall have an opportunity to provide a written response to such report. Respondent shall receive a copy of the final report at the time it is provided to the Provost.
- h. Once the investigation is completed, the Committee will prepare a written investigation report (the “Report”) offering a judgment based on the evidence provided as to whether the Respondent has committed misconduct, and if so its level of severity, and summarizing the facts and analysis that support that conclusion addressing the merits of any reasonable explanation or defense

²⁰ “Biased” in this context means a person(s) who has unresolved personal, professional, or financial conflicts of interest with Respondent.

provided by Respondent, and including the vote of the Committee. Findings of misconduct shall be made if a majority of the members of the Committee agree that such findings are supported by a preponderance of evidence.²¹ If the Committee determines Respondent is guilty of misconduct, it shall also recommend disciplinary actions. If the disciplinary action includes termination and/or removal of tenure, it must be by agreement of four or more of the Committee members. The Report should normally be prepared within fifteen (15) days of conclusion of the evidentiary phase of the investigation.

6. Final Findings

- a. The Committee will provide Respondent with a draft copy of the Report prior to the time it is presented to the Provost.²² Within 15 days of receipt of the Report, the Respondent may file an appeal or objection to the Report. Such appeals or objections must be in writing and state the reasons therefor. The Committee will prepare a Final Report that considers and includes the appeal(s) or objection(s) and any changes in the Committee's vote, finding, and recommendation.
- b. The Committee shall transmit the Final Report to the Provost and to the Respondent. The action of the Committee shall either be sustained by the Provost or the case returned to the Committee with the Provost's objections specified in writing. If the case is returned, the Committee shall reconsider, taking account of the stated objections and receiving new evidence as necessary. The Committee shall frame its reconsideration and communicate it in the same manner as before, including any change in the Committee's vote, finding, and recommendation. Only after study of the new report, and after consultation with the relevant Dean and Department Head, should the Provost make a final decision.
- c. If at least four members of the committee voted that the respondent did not commit misconduct, but the Provost decides on a finding of a guilt, then at most a minor sanction may be imposed.
- d. If the Provost decides that termination and/or removal of tenure is appropriate, but if four members of the Committee do not support the decision, then both the Provost's written recommendation and the Committee's report will be submitted to the Board of Trustees for its decision. In this case, the Board will provide both the Respondent and the Complainant with 10 days to submit any additional relevant information. The Board will then review all materials received and any other relevant material submissions or information which the Board, in its discretion, may solicit from the Respondent or Complainant, or the Provost. The Board will relay its decision to the Provost who will inform the Respondent. This shall be the final decision on the part of the University.

²¹ "Preponderance of evidence" as applied to the Committee's and Respondent's (defense's) burdens of proof means proof by information that, compared with that opposing it, leads to the conclusion that the fact at issue is more probably true than not.

²² See footnote 9.

- e. The Provost shall promptly notify Respondent in writing of the decision on misconduct and, if applicable, disciplinary action. This decision shall be final, subject to a limited right of appeal to the Board of Trustees as described below.

7. Review of Disciplinary Actions by the Board of Trustees²³

If both the Committee and Provost recommend termination and removal of tenure, the respondent may appeal the disciplinary action, not the underlying finding of misconduct, to the Board of Trustees (“the Board”). Such appeal must be in writing, must state the reasons for appeal, and must be presented to the Board within ten (10) days of the date of Respondent’s receipt of notice of such disciplinary action. Thereafter, the Provost shall promptly transmit the final investigation report and his/her written recommendation to the Board of Trustees. The Board shall review the reasons for appeal, the final investigation report, the Provost’s written recommendation, and any submission made by the Respondent relevant to the appeal, and may seek additional submissions or information from Respondent or the Provost. The Board shall notify both Respondent and the Provost of its decision, which shall be the final decision on the part of the University.

8. Special Measures

Should the procedure followed under this policy lead to a finding of no misconduct by the Respondent, the party or parties who conducted the initial inquiry or formal investigation shall, as appropriate, undertake a good faith effort to restore the reputation of the Respondent. Reasonable efforts will also be taken to protect the standing of the individual(s) who raised the issue of possible misconduct, unless the inquiry or investigation reveals that such individual(s) acted in bad faith, in which case appropriate disciplinary actions may be taken.

²³ This Review is extended only to cases involving a tenured faculty member.

Date: May 8, 2018

To: WPI Faculty

From: Committee on Appointments and Promotions (Prof. Datta, Chair)

Re: Motion to modify the procedure for providing feedback to faculty candidates who are denied promotion

Motion: The Committee on Appointments and Promotions (COAP) recommends and I move that the procedures (described in the Faculty Handbook, Part Two, Section 1.D.2.5) for providing written feedback to faculty candidates who have been denied promotion be modified so that the letter come only from the Dean and the Provost, with the Joint Promotion Committee's recommendation letter attached as an Appendix, as described below.

Description of the proposed modifications: (with deleted text ~~struck through~~ and added text in *bold italics*):

1. POLICIES REGARDING THE STATUS OF FACULTY

D. Promotion*

D.2.5. Review by the Joint Promotion Committee, Dean, and Provost

The Joint Promotion Committee reviews a nomination for promotion in order to make a recommendation to the appropriate Dean and the Provost.

In Term A and Term B of the academic year of the promotion review, the Joint Promotion Committee meets to consider the merits of the nomination for promotion. The Joint Committee reviews the complete promotion dossier (described in section D.1.3) including the letters of appraisal from Professional Associates and External Reviewers. The welfare of the candidate must be protected by all members of the Joint Committee by observing strict rules of confidentiality during all phases of the promotion review. When all the members of the Joint Promotion Committee agree that there has been sufficient discussion, a vote is taken by the six voting members of the Joint Committee for or against promotion (no abstentions) by means of a secret ballot, with the majority ruling. By the end of Term B, the Joint Committee forwards to the Dean and the Provost a letter conveying the result of its vote as a unitary recommendation for or against promotion and summarizing the salient reasons for its recommendation.

The Provost reviews each case and consults with the Dean and the President. Subsequently, the Provost may ask to meet with the Joint Committee to discuss any of its recommendations, and must meet with the Joint Committee in the case of potential disagreement. Lastly, the Provost sends to the Board of Trustees the names of candidates for whom promotion is recommended. The Provost will inform the candidate of the Board's decision.

In the event of a negative decision on promotion, a ~~joint~~ letter to the candidate discussing the strengths and weaknesses of the case for promotion will be written by ~~the Joint Promotion Committee~~, the Dean, and the Provost, *with the Joint Promotion Committee's recommendation letter attached as an Appendix*. The purpose ~~of this letter~~ is to provide constructive advice to the candidate so that they may address any deficiencies and resubmit the case for promotion

consideration in the future. The candidate may meet with the Provost, Dean, or the Nominator to discuss this ~~letter~~ *information*.

If a candidate for promotion wishes to appeal a negative decision, faculty grievance procedures are available to the extent provided by a Faculty Review Committee (Bylaw One, IX).

Rationale:

1. In case of a disagreement between the COAP and the Provost on a given case, the Provost's decision is the final one, and it is then difficult to write a "joint" letter from COAP and the Provost.
2. To enhance the transparency of the promotion process.
3. To ensure a complete feedback so that the candidate may appropriately address any shortcomings for future promotion evaluations.

There are no corresponding procedures/requirements for NTT promotions in the Faculty Handbook, but it is recommended that the same procedure be followed to provide feedback in the event of a negative decision.

Note: This proposal will be brought for discussion (only) to the May 8, 2018 Faculty meeting.

DRAFT Proposal:
Associate Professor Mentoring Program

May 8, 2018

Preface: As a follow-up to the 2015 Report of the Task Force on Academic Promotion, the Committee on Appointments and Promotions (COAP) and the Committee on Governance (COG) established a *Working Group on Promotion* to address three specific and important changes in the Faculty Handbook pertaining to academic promotions. The charge given to this Working Group was to draft proposals to the WPI Faculty to achieve the following:

1. Ensure that Tenured (TT) and Continuing Non-Tenure Track (NTT) faculty members in all departments have opportunities to receive mentoring for professional development and nomination for promotion (the Department Tenure Committees are responsible for mentoring TT Faculty).
2. Revise the procedures and criteria used for the review of promotion cases for NTT faculty members.
3. Revise the policies used for the appointment and reappointment of Professors of Practice.

The intentions in this proposal directly address point 1 and are to establish a process for collegial mentoring, to further clarify the promotion process, and to enhance the overall environment for the professional development of all full-time faculty members at WPI. The membership of the Working Group represents a variety of constituencies, including associate and full professors, women and men, department heads, tenured and non-tenure track faculty. It also includes representation from COAP and COG (membership in Appendix A).

This document presents a proposal for associate professors (TT and NTT) in all departments to be provided the opportunity for professional development in the form of mentoring as they prepare for nomination for promotion. This proposal is aimed at associate professors; however, upon implementation, feedback and adaptation, the ultimate goal is to adopt this approach for full professors as well.

Introduction: Through its many deliberations, the *Faculty Advocacy, Mentoring and Engagement* team (formerly known as the Mentoring Group on Promotion) proposes the following: professional planning documents, a defined mentoring process, and a rationale for helping all associate professors better achieve their professional goals.

1. **Professional Development and the Role of Faculty Mentoring.**

Each faculty member, academic department, and the University as a whole has a stake in the professional development of all faculty members. Therefore, each of these entities shares responsibility in ensuring that such development takes place. Strategic professional development opportunities will empower faculty to engage in career planning, seek productive collaborations and build communities to accelerate and promote their work. Mentoring is a key component of faculty professional development²⁴. Hence, to foster continuing professional development and promotion in academic rank, all tenured associate professors and full-time associate non-tenure track faculty members shall be encouraged to establish a

²⁴ For the purpose of this proposal, mentoring is defined as *a process where an experienced faculty member serves as a guide to an individual with lesser experience for the purposes of socializing them to disciplinary norms, fostering their acquisition of institutional and scholarly knowledge, providing professional opportunities, and personal and/or professional support (from Lechuga, V., Higher Education, 2014, 68(6), 909-926.*

Mentoring Team for their personalized professional development. (Note: the Department Tenure Committee serves this role for probationary faculty).

2. Mentoring Team Makeup and Training.

The individual seeking mentorship will choose a Mentoring Team consisting of two faculty members chosen by the individual faculty member as mentors. Associate professors are encouraged to also include their respective department head as part of their Mentoring Team as a third member, when appropriate and to strengthen their relationship with their department head. Each Mentoring Team member (including department heads) will undergo training, as described below. Faculty members are free to change their selected mentors as their professional interests and goals evolve.

Mentoring Team members will be selected by individual faculty based on their mentoring needs. It is anticipated that most Mentoring Team members will be at a higher rank (e.g., full professor); however, individual faculty members are encouraged to choose those members who they feel will best serve as mentors. Associate professors are encouraged to discuss their Mentoring Team member choice with trusted colleagues. Once mentors are chosen, they will undergo mentorship training (see below).

3. Purpose of Mentoring Team Model and Frequency of Interaction.

The purpose of the Mentoring Team is to assist individual faculty members in their professional development, to help them reflect on their longer-term accomplishments and future goals, and to receive feedback from respected colleagues in a confidential and collegial setting²⁵.

Tenured associate professors, full-time associate teaching professors, and full-time associate research professors are encouraged to meet with their Mentoring Team every two years²⁶. In addition, Mentoring Team members are expected to meet regularly (ranging from once per month to twice per year) with faculty on an individual basis where meetings may involve informal conversations about professional development, a discussion of the faculty member's Professional Development Plan (PDP) (see Appendix B for an example), or a more formal assessment of the faculty member's readiness for promotion in rank.

It is expected that Mentoring Team members will advise on the criteria for promotion in academic rank and potentially serve as members of the Joint Promotion Committee. Meetings with the Mentoring Team are not to be considered performance reviews; they are not a substitute for annual meetings with department heads or for regular consultation with other mentors. Rather, Mentoring Team meetings held at regular intervals are intended to facilitate continued professional development and promotion. The results of Mentoring Team meetings are advisory and will be shared exclusively with the faculty member.

4. Administration.

The proposed Associate Professor Mentoring Program will be administered through the Morgan Center (pending outcome of the Annual Planning and Budget Process request, which seeks to expand the Morgan Center to include faculty development), where the current "Mentoring Program for New WPI Faculty" is housed. Periodic program assessment will be administered through the Morgan Center.

²⁵ All parties in the mentoring relationship should set up their own criteria of what information should remain confidential or private and what information can be shared with others. Establishing guidelines for confidentiality will not only help all parties understand what information can and cannot be shared, but it will also help build trust amongst all parties. Breaking confidentiality is acceptable in situations of the disclosure of illegal behavior or harm to one's self or harm to others.

²⁶ The tone of the Mentoring Team meetings should be collegial with the point to help the mentee grow and thrive. The purpose of the meetings is not necessarily to praise or to critique.

5. Mentorship Training.

Training of mentors will consist of three components: 1) understanding and proper interpretation of WPI's promotion criteria (for both TT and NTT faculty), 2) being an effective mentor through use of Professional Development Plans (PDPs; Appendix B), and 3) handling implicit bias²⁷. Training is administered through the Morgan Center and offered biannually to a cohort of identified Mentoring Team members. Training is designed, customized, delivered and refined to meet program needs. In addition, this training is required of the Provost, deans, department heads and program directors.

6. Mentoring Team Meeting and Reporting.

Mentoring Team meetings will be devoted to discussions of the professional development of the faculty member (using the PDP, where appropriate) and serve as a group mentoring experience. If desired, the faculty member may draft a summary of the meeting and ask the Mentoring Team to verify that they agree with the contents of the drafted summary. This summary of the meeting is only for their personal communication and will not be shared with anyone else unless agreed to by all parties. The Mentoring Team meeting should normally take place before the end of D-term in the year the meeting occurs.

For all faculty members choosing to establish a Mentoring Team, they should address career goals, align those goals with the criteria for promotion, and set objectives or milestones that they intend to achieve (using the PDP, where appropriate). Faculty should also maintain annual updates to two forms of vitae: 1) following the more detailed requirements of COAP (organization and categories available from Faculty Governance), and 2) one that is more appropriate for sharing with the faculty member's outside professional community.

The Morgan Center will maintain a record of the Mentoring Team members for each faculty member (along with completed training dates). The faculty members participating in the program as mentees and the content of the meetings will be confidential.

Rationale:

The University has an essential role in professional development and promotion, yet at WPI they have largely abdicated this responsibility for mid-career TT faculty and for NTT faculty. The Task Force on Academic Promotion found that at WPI only Computer Science had a departmental promotion committee and procedure for tenured faculty that could be recommended. In the COACHE survey²⁸, the lowest rated response by associate professors and women to any question in the survey was:

Q130B: There is effective mentoring of tenured associate professors in my department.

Associate professors responses:

Strongly + somewhat agree: WPI: 6%; compared to Peers: 14%; and All: 15%

Women faculty responses:

Strongly + somewhat agree: WPI: 0%; Peers: 24%; All: 20% [*NB: 0% is not a typo*]

In addition, 71% of associate professors and 85% of women responded that having a mentor outside the institution was either important or very important (Q120C). Indeed, all faculty would benefit from developing mentoring relationships with faculty who are *in* their field but *outside* WPI.

This proposal is directed at creating a supportive environment for the professional advancement of full-time associate professors. In addition to promoting the professional development of individual faculty

²⁷ Implicit biases are unconscious thoughts that are automatically activated without conscious awareness that can inadvertently influence thoughts, decisions, and behaviors. Implicit biases are pervasive, but they do not necessarily align with explicit beliefs, biases, or motivations.

²⁸ Collaborative on Academic Careers in Higher Education faculty satisfaction survey.

members, the Mentoring Teams will also contribute to an environment of open information exchange on promotion criteria. The expected consequences are increased numbers of faculty who advance in rank and increased faculty satisfaction with the promotion process.

This proposal presents a flexible Mentoring Team model for both TT and NTT faculty that includes two mentors chosen by the individual faculty member (along with the suggested option of also adding the department head). The ability to identify mentors to participate in the committee will be beneficial for faculty involved in interdisciplinary endeavors in either teaching or scholarship/creativity. The Mentoring Team will be charged with playing an advisory role that is similar to the mentoring provided by the DTC to probationary faculty. The added bonus to the proposed structure is that the Mentoring Team members could serve as a nominator and/or advocate when the individual faculty member is ready and seeks promotion.

Mentoring Team meetings are neither performance reviews nor a substitute for annual meetings with a department head; however, the annual performance review meetings with the department head should be informed by the faculty member's Professional Development Plan (PDP). Consequently, this proposal encourages faculty to include department heads as members of their Mentoring Team. In addition to creating a link between faculty development and departmental operations, the inclusion of department heads on Mentoring Teams is also expected to promote information exchange across departments and divisions, which may lead to more uniform mentorship activities and practices across WPI. If the department head currently does not meet annually with faculty in a particular department, then it is the responsibility of the appropriate divisional dean to ensure that annual reviews and individual meetings with department heads take place.

In addition, it will be the Provost's responsibility to hold deans and department heads accountable for their roles in faculty mentoring and professional development (e.g., on performance evaluations).

Resources Needed:

It is expected that the Provost's Office will provide the Morgan Center with administrative and financial support for the proposed Associate Professor Mentoring Program, including the following: 1) personnel support to administer the program, maintain records, consult with faculty and perform periodic assessments, 2) funding for workshops to assist faculty in preparing Professional Development Plans, 3) funding for mentor training (PDP development and implementation, procedures and criteria for promotion, and handling implicit bias) for all relevant personnel.

Appendix A – Working Group Membership

Len Albano (Assoc. Prof., CEE; COG)
Ulrike Brisson (Assoc. Teaching Prof., HUA)
Destin Heilman (Assoc. Teaching Prof., CBC)
Susan Roberts (Full Prof. and DH, CHE; COG)
Jeanine Skorinko (Assoc. Prof., SSPS)
David Spanagel (Assoc. Prof., HUA; COG)
Pam Weathers (Full Prof., BBT; COAP)
Sharon Wulf (Prof. of Practice, BUS)

Appendix B – see Professional Development Plan document

Note: This report will be brought for discussion (only) to the May 8, 2018 Faculty meeting.

The Global School @ WPI: Strategies, Synergies and Structures

Project-based learning is the heart of WPI, where theory, practice and impact all intersect. For fifty years, WPI has created innovative global projects, great problems seminars, and academic programs in which students and faculty open their hearts and broaden their minds by engaging with communities around the world. WPI's strategic plan enhances this legacy and elevates our impact with commitments to Global Projects for All, the Center for Project-Based Learning and Global Partnerships. Previously, these efforts operated independently. The Global School @ WPI brings initiatives together to create new synergies and advance the university toward becoming the premier global polytechnic.

Vision: The Global School @ WPI will dramatically increase WPI's ability to address critical global challenges through knowledge generation and collaborations across the entire campus and the wider academy, and with communities and organizations around the world. The GS@WPI will integrate, synthesize and amplify global programs and community-engaged partnerships:

- **The Global School will integrate WPI's educational programs** in a global network of knowledge at the intersection of global problems, grand challenges, and technology.
- **The School will integrate existing global programs** in the Interdisciplinary and Global Studies Division, Great Problems Seminars, International and Global Studies, and area studies expertise in strategic regions (such as China, Latin America, Western Europe).
- The School will **enhance existing programs** by strengthening links to majors and minors so that students make more intentional connections across global seminars, courses, and projects.
- The School will **create new opportunities in research and teaching on cross-disciplinary global themes** and **elevate the visibility and impact of WPI's global networks** through the Global Impact Lab and Office of Global Partnerships.
- The School will **actively collaborate with other departments and programs** at WPI to involve faculty from across the University in the Global Projects Program and Great Problems Seminars and facilitate new opportunities for global MQPs and graduate programs.
- The integrative synergies of this School will play **a critical role in achieving the goals of WPI's strategic plan:** Global projects for all, Major and a Mission, Center for Project-Based Learning, Global Partnerships, and the Global Impact Lab in the Foisie Innovation Studio.

This document summarizes the strategies, synergies, and structures required to realize this vision. The Global Impact Division Implementation Advisory Group (GIDIAG) recommends that this new unit become the **Global School**. A brief note on the keywords in this name:

- **School.** A school is an academic unit (e.g. School of Business); a division is administrative (e.g. Division of Talent and Inclusion). *Interdisciplinary and Global Studies Division* was aptly named when it provided administrative support for projects but had no faculty of its own; now the IGSD has 15 full-time faculty. Combined with faculty in Great Problems Seminars and other programs, this is an academic, not administrative unit. In addition, being a school will enhance the external and internal visibility of our signature project-based programs.
- **Global.** Every academic program at WPI strives to have a global impact. While the name of the school is subject to change, this unit brings together multiple global initiatives and its core programs actively seek engagement with diverse global communities for education and research.

Strategies of Insight, Innovation, and Impact for Global Challenges

The core strategy of the School is to **engage partners in global and local communities with insight, innovation, and impact to meet the global challenges of the 21st century**. The Global Projects Program (GPP) and the Great Problem Seminars (GPS) apply WPI's culture of multidisciplinary collaboration and pedagogy of project-based learning to "global and local" challenges with local, regional, state, national or global communities. Insight, innovation, and impact refer to the continuum of collaborative partnerships for the mutually beneficial exchange of knowledge and resources. Community-based research and education enhance student learning, address critical societal issues, prepare educated citizens, and contribute to the public good.

Insight refers to knowledge creation and exchange about critical global challenges: how they arise and vary through time and place, and reflect social and environmental process or divergent cultural and theoretical perspectives. Student insight emerges through exposure to global problems, perspectives, and experiences through various conceptual and area lenses in WPI's curriculum, both on campus and off. Moreover, WPI faculty research fuels insights into global-local dynamics, creating synergies for the curriculum and project work.

Innovation refers to "collaborative creativity" through which faculty, students, and diverse stakeholders plan and advance new ways of meeting global challenges in local places, whether at the scale of the organization, neighborhood, community, city, state, or nation.

Impact refers to a wide range of positive outcomes that emerge from mutually beneficial WPI-partner collaborations. Impacts are multi-directional. WPI students gain global insight and competency through their opportunity to work with faculty and community stakeholders on critical issues. WPI students and faculty aim to foster positive outcomes through projects and research, most immediately and often most powerfully among the most invested partners and sponsors. They also aim to foster "extended impacts" to others, whether nearby communities or more distant communities of academics, professionals, or others with shared interest.

Assets Involved

Existing assets that could come under the umbrella of the school:

- Interdisciplinary and Global Studies Division (IGSD) and Global Projects Program (GPP)
- Great Problems Seminar Program (GPS)
- International and Global Studies Major and Minor Program
- Global Health Minor Program
- Humanitarian Engineering course
- Global area groupings, such as the China Hub
- Thematic groupings such social justice
- Global Impact Lab
- Office of Global Partnerships

Assets that could collaborate with the new division, but remain in their current organizational structure:

- Foisie Business School
- Engineering
- Arts and Sciences
- Environmental and Sustainability Studies

- Sustainability Engineering Minor
- Individual courses and project advising that contain global content
- Grand Challenges Scholars Program
- International Students Office
- Center for Project-Based Learning

Future Potential Programs

In the future, the Global School could increase WPI's visibility and enhance its educational impact with new academic programs that align with WPI's strategic areas of growth. Once the School is established, WPI could leverage its assets by adding potential new undergraduate and graduate degree or non-degree programs, in such areas as:

- Global Public Health
- Global and Environmental Sustainability
- Global and Local Economic Development
- Global Social Justice and Civic Engagement
- Global Public Safety
- Global Urbanization
- Global/Community Engagement (potentially as a graduate program)
- Pedagogy & Research: Project-Based Learning
- Teaching degree/certification program
-

The new School would foster collaboration with faculty in other schools at WPI on such programs. New programs would require additional tenure-track faculty to provide program leadership. Potential collaboration in teaching and scholarship enabled by bringing together faculty in the new School will strengthen the case for tenured faculty positions in other areas of WPI as well as in the School. The School will also position WPI to sponsor cross-cutting and cutting-edge research through the establishment of strategic working groups that focus on areas identified by WPI as strategic areas of growth.

Synergies of the Global School

The Global School will promote new synergies at WPI by bringing existing programs together and by creating opportunities for new programs that will improve student learning, provide enhanced opportunities for scholarship, and elevate the University's global impact. These opportunities include:

1. Creating a **Global Network of Knowledge** by :
 - a. integrating global themes into research,
 - b. generating knowledge and understanding of the local context of global challenges,
 - c. creating synergies between scholars with area expertise and those working on global challenges (on campus or on site) where the behavior of those areas are of global significance, and
 - d. leveraging research and knowledge generation to fuel project work and collaborations with community partners, governments, corporations, and other stakeholders.
2. **Facilitating research collaborations on campus and with global partners** to coordinate strategic research themes with strategic areas of engagement, including multidisciplinary topical themes, area expertise, and STEM approaches associated with global challenges.
3. **Integrating unifying themes of research and engagement through** teaching and project work. Channel strategic areas of research and global engagement into WPI's global curriculum.
4. **Engaging the global on campus by** recognizing learning opportunities for students and faculty from across the globe, and to better support international students and international learning communities.
5. **Leveraging WPI's grand challenges orientation** embedded in GPS and GPP and interdisciplinary majors and minors to create, more broadly, opportunities to combine the global scope of problems with local depth, knowledge, and context embedded in HUA, SSPS, and other departments, creating a hybrid approach. The new School, engaged with WPI's existing structures, could allow WPI to create a new model that incorporates both local depth and global breadth for grand challenges and STEM-based global education and research.
6. **Supporting "Major and a Mission"** by helping students more clearly, intentionally, and strategically link learning courses in GPS, HUA, SSPS, as well as IQP and MQP projects.
7. **Integrating more thoroughly curricular elements and student opportunities to pursue global challenges** through efforts such as:
 - a. Strengthening **linkages with existing interdisciplinary majors or minors** at WPI including International and Global Studies, Global Public Health, Environmental and Sustainability Studies, Sustainability Engineering, Humanitarian Engineering
 - b. Creating **new innovative global courses or programs** in areas such as social welfare and justice, human security, urban development and smart cities, sustainable resources, museum studies, disabilities and society

- c. Expanding **opportunities for student reflection and integrative learning after projects**. The developmental reentry programs currently sponsored by the IGSD could be coordinated with the academic reentry programs offered by International and Global Studies
 - d. Exploring new models for offering **credit for Great Problems Seminars**. Students are often frustrated that the academic credit for these seminars does not “count” in their degree program. This School could explore options to address this concern.
 - e. Enhancing global project advising by **linking IQPs with MQPs and research efforts** with global implications
 - f. Facilitating the development of **global programs in business, engineering, and arts and sciences**, which could include course content, MQPs or graduate programs.
 - g. Strategically **coordinating the learning outcomes of GPS and IQP** as well as other degree requirements
8. **Implementing innovative and comprehensive assessment mechanisms of global learning and engagement** to improve or expand programs and provide better guidance and advice to students.
 9. **Hosting, enhancing and creating more exchange programs** to further develop the global community on campus and the opportunities for intellectual and cultural exchange. This would be a central role for the Office of Global Partnerships.
 10. **Creating an interdisciplinary center for visiting scholars and practitioners** focused on global challenges and project-based learning, allowing faculty, students, and programs from across the university access to global challenge dialogue, collaboration, and research exchange.
 - a. **Leveraging WPI’s partnership with project sponsors** to the benefit multiple programs at WPI. For example, WPI’s partnership with Martín Burt and Fundación Paraguaya (which incorporates GPS, GPP and a student club) could be replicated with other global project sponsors or community partners.
 - b. The **Global Impact Lab would host Global Impact Fellows** including visiting scholars, community practitioners, and full-time faculty from any school, department or program at WPI to disseminate the scholarship of WPI’s global network of knowledge.
 11. Producing a **scholarly journal devoted to Project-Based Learning, Global Research, and Community Engagement** sponsored by the Global Impact Lab and/or the Center for Project-Based Learning.
 12. **Creating a world-class online, curated “Library of Global Community Engagement”** to include supportive learning tools and modules to be used by students, faculty, and community groups.

Structure of the Global School

To achieve these synergies, GIDIAG envisions a Global School with a structure that:

- **Enhances the Great Problems Seminars (GPS) and Global Projects Programs (GPP)** led by the insight of an experienced and passionate faculty and staff
- **Develops innovative undergraduate and graduate programs** including existing majors and minors and the opportunity for potential new degree programs in the future
- **Collaborates and experiments across WPI** with all other programs, departments, and schools
- **Engages global and local communities in research, scholarship and partnerships** with the Global Impact Lab and Office of Global Partnerships

At present, **neither the GPP nor GPS offers degree programs or a curriculum beyond multiple versions of a first-year seminar or a required third-year project.** As a result, the core faculty include almost no tenured or tenure-track faculty. The integrative synergies described above will enhance the GPS and GPP, enable students and faculty to pursue interdisciplinary scholarship, and provide new opportunities that are less likely if these programs continue to function in isolation. Therefore, **GIDIAG recommends the Global School have an integrative structure to achieve integrative synergies.**

GIDIAG discussed multiple scenarios with varying levels of integration, including:

1. **Integrate GPS and IGSD faculty into a global school** along with faculty in humanitarian engineering currently funded by the KEEN program. The new school would operate as a single school with multiple programs. The dean or an associate dean would serve as the department head. Program directors would provide leadership for program committees for GPS, GPP and other initiatives.
2. **Incorporate GPS and IGSD faculty into distinct departments within the global school.** Five GPS faculty would become their own academic department with a department head. This would continue the structure in Undergraduate Studies but move the unit into the global school. In this scenario, the IGSD also would be an academic department with a separate department head.

In both scenarios, changing the name of the IGSD would be the main change in the faculty handbook.

The **benefits of integration and synergy**—improved student learning, enhanced faculty scholarship, deeper community partnerships, augmented faculty resources, the possibility of tenured positions, and elevated profile for WPI—are most likely to be realized by bringing these and related programs together in the same unit (scenario 1). Separate departments could create internal silos within the global school and inhibit synergy. The Foisie Business School and departments such as HUA or SSPS—and the IGSD itself—all provide examples of a single unit with multiple programs.

The **Global Projects Program and Great Problems Seminars should have program committees led by program directors.** Program committees will maintain the identity and cohesion of these programs while creating flexibility for faculty to develop an integrative and collaborative curriculum. Synergies of the global school require versatility among faculty and collaboration among academic leadership. Effective management of these programs involves extensive interaction with faculty and departments outside the school.

GIDIAG unanimously agrees that the synergies and structures of the Global School cannot achieve their full potential without additional tenure-track faculty. Further, the Global School must receive

additional resources and tenured faculty in order for WPI to achieve its goal that a majority of teaching be provided by tenured/tenure-track faculty. At present, quite the opposite is true for these programs. Only two faculty members appointed to IGSD or GPS have tenure (Jiusto, Vaz). GIDIAG strongly recommends that **existing faculty in the new school be permitted to apply for tenure track positions**. We are looking to grow the school by adding tenure-track lines, not by converting lines. If internal candidates apply and are not selected, they will not lose their current positions.

As undergraduate enrollments have grown, **WPI has increasingly relied on non-tenure-track faculty in the programs that form the core of the global school**. The Global School is a once-in-a-generation opportunity for WPI to remedy this situation and to amplify the impact of our world-renowned programs in project-based learning. **Additional tenured/tenure-track faculty** will enable the global school to strengthen our projects, enhance collaboration with other departments, and build majors and minors and new graduate programs.

Tenure exists in academic departments so that tenured faculty can provide leadership and continuity for academic programs. The **synergies of the global school require a commitment to tenured/tenure-track faculty, and an integrative structure is the most likely to promote these synergies as well as the development of academic programs that warrant a commitment to tenured faculty**.

Thus, **GIDIAG recommends that the IGSD be reconstituted as the Global School**. Faculty currently associated with Undergraduate Studies (including GPS and KEEN-funded faculty) would be integrated into this School. During a transition period, associate deans or program directors would continue to be responsible for the Global Project Programs and for the Great Problems Seminars, with additional responsibilities depending on their respective strengths. The Executive Director of Global Operations, Director of the Global Lab, and Director of Global Partnerships would report to the Dean. An external advisory board of alumni and experts would advise the Dean on strategic opportunities, and an internal faculty advisory council of representatives from the School would provide a robust mechanism for shared governance.

To maintain the excellence of our current programs and to achieve new synergies, **the new School requires integrative structures and a significant number of new tenure-track faculty**. The committee's discussions highlighted—and feedback at listening sessions has reaffirmed—that our current programs are strong and that the new School offers very exciting new opportunities. With support for new tenured/tenure-track faculty positions, the Global School will provide the strategy, synergy, and structure for WPI to elevate its impact as the premier global polytechnic.

Frequently Asked Questions

Are we “solving a problem” or reaching for an opportunity?

This restructuring is about seizing an opportunity not solving a problem. The GPP and GPS are strong, vibrant, even award-winning programs. This proposal brings together our distinctive project-based programs in order to elevate them internally and externally. The School consolidates and strengthens our efforts in the global arena and provides a voice (the dean) and a platform (the School) to amplify and extend WPI’s impact in these areas. It provides additional global opportunities and resources for students and faculty – both within the School and across the campus. The School will make it possible for WPI to do MORE in the global arena.

Do we need a new dean to do this?

The Dean is not new, but rather the evolution of the Dean of IGSD to the Dean of the Global School. The responsibilities of this Dean will include not only the Global Projects Program but also the Great Problem Seminars, Global Lab, and Global Partnerships. The Dean will work collaboratively with the faculty in these programs, with the leaders in Arts and Sciences, Business, and Engineering at WPI, and with external constituencies, including alumni and potential donors. Newer programs (such as the global lab and global partnerships) will require new personnel. New programs and offices cannot be added to the responsibilities of an existing Dean, if WPI is to meet its commitment for “global projects for all.” Expanding the Global Projects Program requires the attention of an Associate Dean or Director working closely with the Dean. The synergies of this School will not be achieved by asking more of the already busy personnel in existing programs.

How can we have a school that consists overwhelmingly of non-tenure track faculty?

The Global School requires additional tenure-track faculty to support the intellectual mission of the School and to build potential new programs. The administration has committed to providing new tenure-track lines. Further, the President and Provost recognize and support the work that current faculty in IGSD, GPS, and related areas have done in developing our widely-recognized and successful programs. Existing non-tenure-track faculty in the School should be able to apply for tenure-track positions. In addition, the Global School will provide new opportunities for existing faculty to build upon their teaching and research profiles through new programs and courses. These opportunities for professional development—especially through the Global Lab—will enhance the standing of non-tenure-track faculty both inside and outside of WPI.

How will this benefit our students?

WPI is currently working on adding a global competency to our learning outcomes because we believe that this is an important component of a 21st century education. Globally aware graduates are well prepared for lives of meaningful personal, professional and civic contributions in a diverse and interdependent world. This new School emphasizes the global in our programs and will provide new opportunities (courses, modules, re-entry seminars, etc.) for both students and faculty to infuse curricula with significant global content. The Global Lab will provide new opportunities to create synergy among projects across our global network and to enhance the ability of our students to achieve our learning outcomes. Global Partnerships will work with departments and programs to develop new global opportunities beyond our IQP program.

Won't this cost money? How will it be paid for?

Yes, there will be new expenses associated with these changes, but WPI has long been planning to allocate resources to many of these global initiatives as part of the strategic plan. In addition, President Leshin reports that the vision of synergies and strategies developed by our advisory group has generated great interest among alumni and friends. Plans for the School will be shared in WPI's upcoming fundraising campaign and the Dean of this School will play a critical role in fund-raising to support the initiatives of the School.

Will faculty outside this new school still be able to contribute to GPP and GPS?

ABSOLUTELY. The GPP and GPS have been successful in large part because of the participation of faculty from across the campus. We will continue to depend upon and encourage the extensive and active participation of faculty from across campus to maintain and grow these programs. In particular, with our strategic goal of "global projects for all," the engagement of members of the faculty across the breadth of WPI is more important than ever.

Authorship

This report was prepared by the Global Impact Division Implementation Advisory Group (GIDIAG) in consultation with Provost Bursten and President Leshin
(GIDIAG): Kent Rissmiller (co-chair) Kris Wobbe (co-chair), Kris Boudreau, Dominic Golding, Peter Hansen, Scott Jiusto, Reinhold Ludwig, Anne Ogilvie, Geoff Pfeifer, Jennifer Rudolph, Aaron Sakulich, Ingrid Shockey, Lisa Stoddard

March 30, 2018

Appendix: Consent Agenda Motions

Date: May 8, 2018

To: WPI Faculty

From: Committee on Governance (Prof. Gaudette, Chair)

Committee on Information Technology Policy (Prof. G. Salazar, Chair)

Re: Motion to change the myWPI Policy to the Learning Management System Policy

Motion: The Committee on Governance (COG) moves that the existing myWPI policy be renamed to the Learning Management System policy and that the current language describing the policy be revised, as described below.

Description of the Proposed Modifications to the myWPI policy: (with added text in **bold** and deleted text ~~struck through~~)

myWPI Learning Management System Policy

Purpose

~~myWPI is the centrally~~ **University-supported Learning Management System (LMS)** at WPI (~~currently running Blackboard~~) **is currently Canvas by Instructure.** These policies are **This policy is** intended to ensure the integrity of the data contained within the **University-supported LMS** and comply with existing WPI policies related to intellectual property as well as state and federal laws such as FERPA. The following policy was approved by the WPI Faculty on ~~January 15, 2015.~~

Scope

This policy applies to all instructors, students, staff and others who use the ~~myWPI system~~ **University-supported LMS** for academic coursework. The “managing unit” for ~~myWPI the~~ **University-supported LMS** is Information Technology Services, specifically the Academic Technology Center ~~and Hosting, Enterprise and Support Services team.~~

Policy

- 1) ~~myWPI~~ **The LMS Use and Operation**
 - a) Use of ~~myWPI the~~ **LMS** is optional and is not required by instructors.
 - b) All courses with a ~~CRN in Banner~~ **course registration number in the student information system (SIS)** automatically have ~~myWPI~~ **LMS** sites created for them. Sites for projects categorized as 'IQP', 'MQP', 'PQP', 'ISP', 'SUFF', 'ISG', 'THES', 'DR', 'PHD' in ~~Banner~~ **the SIS** are not automatically created though they can be requested by filling out the [myWPI Project Group LMS Activation form](#).
 - c) Students will only see the ~~myWPI~~ **LMS** course site after it is ~~enabled~~ **published** by the instructor.
 - d) All users of ~~myWPI the~~ **LMS** must adhere to the [WPI Acceptable Use Policy](#).
 - e) Each user is responsible for the accuracy, integrity and legality of the content that he or she uploads to ~~myWPI the~~ **LMS**.
- 2) **User Management and Access**
 - a) The WPI user account provides access to ~~myWPI the~~ **LMS** for all instructors, students and staff.

- i) Consortium students officially enrolled in WPI courses have a WPI user account.
 - ii) Students who are making up an Incomplete, but are not presently enrolled in any courses (thus their account has been deactivated) must work with the Registrar to reactivate their status.
 - b) Roles available in ~~myWPI~~ **the LMS** are defined [here](#) (Link to ~~myWPI~~ **the LMS** Policy Definition).
 - c) The “~~instructor~~ **teacher**” role in ~~myWPI~~ **the LMS** courses corresponds directly with the Instructor of Record as assigned by the Registrar’s Office.
 - i) Instructors shall be allowed to have a test student account.
 - d) If the gradebook function is being used, students who are officially enrolled in a course may not have a role in that same ~~myWPI~~ **LMS** course site that enables their access to the course site gradebook.
 - e) Students who are auditing a course must officially register the audit through the Registrar’s Office. Their ~~myWPI~~ **LMS** site enrollment will then come through automatically via the ~~audit registration in Banner SIS~~.
 - f) Access to course site content is limited only to those officially enrolled in or teaching the course, unless access to the site is permitted by the Instructor, or their designee (e.g., a TA for the course). To facilitate this, an e-mail request to myhelp@wpi.edu ~~canvashelp@wpi.edu~~ is required and must include the name and e-mail address of the designee and the duration of that status. Available levels of [access](#) are described [here](#) (Link to ~~myWPI~~**the LMS** Policy Definition).
 - g) Guest Accounts can be created for testing purposes or for users who are not otherwise authorized to have official WPI computing accounts or have no need for WPI resources accessed by a WPI computing account. To facilitate this, an e-mail request to ~~myhelp@wpi.edu~~ canvashelp@wpi.edu is required and must include the name and e-mail address of the person that needs a guest account, the course number, and the course role access level they need.
 - h) Students may be restricted from accessing the LMS due to academic or financial holds. In such cases, the restriction may be overridden by the managing unit at the sole direction of the Registrar.
- 3) Content Management and Access
- a) The [WPI Intellectual Property Policy](#) dictates the ownership of teaching and other course materials.
 - b) The term “course site” is defined [here](#) (Link to ~~myWPI~~ **LMS** Policy Definition).
 - c) Course Site Size Limitation: the default course site size limit is 1 gigabyte ~~which may be increased on an annual basis~~. This ~~includes~~ **does not include** student assignments and discussion board attachments. Course quotas can be increased on a per-course basis as needed by submitting a written request to myhelp@wpi.edu ~~canvashelp@wpi.edu~~.
 - i) Large documents that are reused from year-to-year ~~will be posted in the Blackboard Content System server~~ **should be posted in the user account-level Files area** and linked within course sites. These files will not use up course quotas. The managing unit will assist with posting multimedia files to the streaming media server.
 - ii) In master courses with multiple sections, the default 1GB size limit includes all sections. The managing unit will monitor quotas for large-enrollment or master

- courses and increase as needed.
- d) Course Retention: Course sites will be maintained for ~~two~~ **six** academic years, ~~or the two most recent offerings in the case of Category II sites,~~ on the active database server. ~~Full copies of older course sites will be archived to a storage server by the managing unit.~~
 - i) ~~All course sites older than the two most recent offerings can be restored at any time by request of the instructor. Expected turnaround time for re-enabling course sites older than two years is approximately two business days.~~
 - ii) ~~Archived~~ **Concluded** courses include student assignments.
 - iii) Course retention policies will be re-evaluated any time a significant version change of the current LMS is installed or a different LMS is selected by the LMS Evaluation Subcommittee convened by the Academic Computing Policy Working Group (ACPWG).
 - e) Copying Course Materials: Instructors using ~~myWPI~~ **the LMS** must use the new course shell created each term. Instructors are able to copy materials from one course to another as long as the older course is still available on the ~~myWPI~~ **LMS** server by using the ~~“Copy Materials into Existing Course”~~ **“Import Content into this Course”** or **“Export/Import Course Content”** features. ~~If the older course site is not available and is one of the two most recent offerings of the course, the instructor of record may request that the site be reopened by sending a written request to myhelp@wpi.edu.~~
 - f) ~~myWPI~~ **The LMS** system administrators may use the ~~“emulator”~~ **“become” emulator** tool which allows them to enter any username and emulate that individual for troubleshooting purposes. This use is covered under the [WPI Code of Conduct for IT Administrators](#).
- 4) System Maintenance, Outages and Upgrades
- a) The managing unit will notify users of any planned outages of ~~myWPI~~ **the LMS** that occur outside of the posted weekly downtime.
 - b) The managing unit will respond to unplanned outages to provide **updates concerning** the resumption of services as quickly as possible.
 - c) The managing unit will oversee ~~the implementation of~~ **communication efforts to announce** upgrades, ~~patches and services packs~~ **and bug fixes when appropriate (e.g. when a bug is resolved or when there is a significant change to how a tool or feature is accessed/used).**

Review

CITP will periodically review this policy.

Links to Related University Policies

[Acceptable Use Policy](#)

[Federal Family Educational Rights & Privacy Act Compliance Statement](#)

[Intellectual Property Policy](#)

Contact: Comments or questions, email myhelp@wpi.edu, canvashelp@wpi.edu

Rationale:

The use of Blackboard as our learning management system will end on June 30th, 2017. We need to update the myWPI policy to reflect the change to a cloud-based system with different

language for its features and functionality. Policy related to retention of course sites is also updated to adapt to recommended cloud storage best practices and align with accreditation requirements. Because we do not anticipate that Canvas will be referred to as “myWPI” we are replacing references to myWPI with “the LMS.”

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Policy (Prof. Humi, Chair)
 Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to change fall and summer degree requirement deadlines and conferral dates

Motion: The Committee on Academic Policy and Committee on Graduate Studies and Research recommends, and I move, to change requirement deadlines and degree conferral dates (date on diploma) for students completing requirements in a summer or fall semester as follows:

Semester of Completion	Deadline for completion of requirements	Degree conferral date
Summer	Last day of Summer semester/E2	September 1
Fall	Last day of Fall semester/B-term	December 30
Spring*	Last day of Spring semester/D-term for courses; Thursday prior to last day of semester/D-term for eCDRs/ETDs	May XX

*The dates for spring semester completers would remain unchanged from current practice.

Rationale:

Currently, students who complete requirements in a summer semester don't have degrees conferred until early October, and students who complete requirements in a fall semester don't have degrees conferred until late February. Changing the deadline and deferral dates (as described above) will benefit the majority of students completing in these semesters, as they do not have to wait so long for their degrees to be conferred. The late degree conferrals conflict with typical graduate school application deadlines, and also prevent students from adding the degree earned to their resumes for a minimum of one-and-a-half months after they have completed their requirements.

In addition, WPI is currently out of compliance with degree completion reporting to the federal government. Because the conferrals are so late, students are first counted as "withdrawn" because they are no longer enrolled but not yet graduated. The graduation status is reported more than 45 days after the last date of attendance (last day of the previous semester), which can result in the graduation status never being properly communicated to the student's lenders.

Because the conferral dates are so late, some students also take advantage of the extra time to complete their remaining requirements, running very late into the next term. This presents an extra work load for the faculty, and, because the students are not enrolled for the new term, a liability for the University because they are not enrolled students but are still accessing resources and perhaps continuing work that could present some risk to them and the institution. Students who finish in spring semesters (May) cannot be afforded the same extra time to complete requirements in order to graduate on the designated May conferral date, creating an inequity among students.

It is also advantageous that these “off-cycle” completions have consistent deadlines and conferral dates for student, faculty, and institutional planning purposes. This is a common tenet at other universities for the off-cycle degree completion dates. Because there are no commencement ceremonies associated with them, choosing dates that coincide with the academic calendar provides consistency and sets expectations for students well in advance. We would also post these dates in the academic calendar. Currently the dates for October and February conferrals are not included.

While all the original reasons for the current dates are unknown, one reason was that the Registrar’s staff was too busy with manual registration in the first few weeks of the fall and spring semesters to make time for degree-completion confirmations. With on-line registration, this is no longer an impediment.

The Committee on Academic Operations, the current and the incoming Secretaries of the Faculty, General Counsel, and the Registrar were consulted regarding this change.

Benefits:

- Graduation dates align with the academic calendar; faculty members advising degree candidates can close out the semester in a timely fashion, before moving on to the next.
- Most students receive their degrees in a much more timely fashion, enabling continued education or employment to proceed.
- WPI is in compliance with federal graduation reporting requirements.
- Elements of risk introduced by students continuing work on campus but not enrolled are mitigated.

Implementation:

- Registrar staff time – registrar staff were consulted about this change, and are in favor and willing to do the extra work that would take place at the beginning of the fall and spring semesters in order to benefit the students.
- Faculty vote on graduates –
 - For fall graduates, the graduation list would be approved at the December Faculty meeting, pending final verification of grades/requirements by Registrar, as is done for the May vote.
 - For summer graduates, the final confirmed graduation list would be approved at the September Faculty meeting. This meeting will take place within the first two weeks of the Fall semester/A-term, before the end of add/drop, to facilitate the appropriate status reporting.
- Board vote on graduates –
 - As Secretary of the Corporation, General Counsel will secure the approval of the Board following the Faculty vote.
- It is acceptable in regards to enrollment/graduation reporting that the votes take place shortly after the official conferral date, so long as the student records are updated within the add/drop period.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Committee on Academic Policy (Prof. Humi, Chair)
Re: Motion to introduce a new *Category III* course designation

Motion: On behalf of the Committee on Operations and the Committee on Academic Policy, I move that a new *Category III* course category be established for undergraduate courses, as described below.

Description of the Proposed Category III Course:

A *Category III* course will appear in the undergraduate catalog and departments/programs will be free to schedule these courses as needed. Departments/Programs wishing to propose new courses designated as Category III or to reclassify existing courses as Category III must use the standard procedures for such changes.

On page 124 of the undergraduate catalog, in the section titled, "COURSE DESCRIPTIONS", the following changes (additions are underlined, and removed text is ~~crossed-out~~) are made to the subsection "COURSE CATEGORIES":

For purposes of planning programs of study, courses at WPI are divided into ~~two~~ three categories.

-- Category I (Cat. I)

These courses cover core material of interest to large numbers of students. Category I courses are offered at least once a year.

-- Category II (Cat. II)

Category II courses are ~~usually~~ offered at least every other year.

-- Category III (Cat. III)

Category III courses are offered at the discretion of the department/program.

Rationale:

Cat. II: The minor edit to Category II reflects the practice for Cat. II offerings – these courses are offered at least every other year, and faculty and students interpret the category in this fashion. Removing the "usually" clarifies the intention of the category.

Cat. III: Recently, there has been increased interest in offering special topics classes at the undergraduate level. As an example, special topics in Psychology at the 1000, 2000, 3000, and 4000 level were recently approved and appear in the 2018-2019 catalog (pg. 193-194). One of the challenges to approving these courses is that they are intended to be non-regular offerings and neither of our current course categories (Cat I, Cat II) are appropriate.

This motion creates a special *Cat III* category to provide departments and programs a more flexible frequency of scheduling. Creation of Cat III courses will follow the same process as all courses by submitting a proposal to CAO. Similarly, if a department/program wishes to change the category of a course (from I or II to III, or from III to I or II), this must be done by motion to CAO, a change to a more frequent offering needs further approval by the University Faculty. Departments or programs wishing to

convert existing *Cat I* or *Cat II* courses to *Cat III* must evaluate the impact on the student population, as this has the potential to impact students' progress to graduation.

Cat III courses are meant to be courses of opportunity. No department/program shall have degree requirements that specifically identify a *Cat III* course by number. This is essentially the same long-standing policy in place for experimental courses.

A list of *Cat III* courses to be offered in the up-coming year will be generated by the Registrar's office in spring (in early D term) for CAO to review and monitor the offerings of these courses.

Implementation Date: Academic Year 2018 – 2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Committee on Academic Policy (Prof. Humi, Chair)
Re: Motion to introduce new *Special Topics* courses

Motion: The Committee on Academic Operations and the Committee on Academic Policy recommend and I move that the following guidelines be adopted for offering special topics courses at the undergraduate level, as well as for the initial creation of such courses if a department/program does not already have such a course.

Description of Proposed Guidelines:

This motion provides guidelines for offering special topics courses at the undergraduate level, as well as for the initial creation of such courses if a department/program does not already have one.

Special topics courses designated as *Cat III* may appear in the undergraduate catalog and departments/programs will be free to schedule these courses as needed.

A special topics course will have a designated course number and students may take repeated offerings of the course provided the topic is different. The name of these courses in the catalog will be Special Topics. On student transcripts, the course name will appear with a "ST:" prefix and a custom course name, such as "ST: Custom Name" (ex. PSY 2800 ST: COMIC HEROS & VILLIANS).

The description of each Special Topics course shall read as follows:

SUBJ NUM. Special Topics

Cat III

These courses cover areas that are not covered by regular <DEPT> course offerings. Exact course descriptions are disseminated by <DEPT> well in advance of the offering.

Each department/program may create special topics courses in a given subject at an appropriate level (i.e., 1000-, 2000-, 3000-, or 4000-level) with maximum 1/3 unit. If a department/program does not already have a special topics course number(s), they should submit a motion to CAO using the template on the CAO website and following the guidelines in this motion. Special topics courses will appear in the undergraduate catalog, grouped towards the end of the course descriptions as found in section 3 of the catalog. This is distinctly different from experimental courses which are not listed in the catalog.

Once the course is approved, individual offerings of the special topics courses must be reviewed and approved by the core Department/Program faculty group, and the department/program scheduler should work with the Registrar's Office to schedule the section. The section(s) will be published in the online course listings and the student registration system, and will be available for registration. Departments/Programs must also provide a course description for the section, which should include any recommended background for that topic (if none, specify none), and will appear in the registration system. No special topics undergraduate course shall require students to receive faculty approval for registration, in keeping with current practice in undergraduate course offerings.

If a Special Topic course on a particular topic under Cat III has been offered twice in the past 5 years and needs to be offered again, the relevant Department Head/Program Director must submit a request to

CAO for approval to offer it again. If a department/program wishes to convert a special topics course offering to be a permanent course (after it has been first taught), then a motion should be sent to CAO. In these motions, the course description must clearly state that credit should not be allowed both for the designated special topics course offering and the permanent course. Departments/programs should continue to develop experimental courses as part of the normal process for creating permanent courses; it is not expected that special topics courses become permanent courses.

A department/program can only create one special topics course number for a given subject at a given level, for example, one 3000-level and one 4000-level special topics course number. There can be different offerings at the same course level carrying the same number and differentiated by a section number. These special topics courses can be used to satisfy degree requirements for any minor or major where that requirement is determined by the department/program, subject, and level of the course.

Rationale:

There is demonstrated interest in having special topics classes at the undergraduate level. In the 2017-2018 undergraduate catalog, consider the following:

- ISU ME. SPECIAL TOPICS (p. 186)
- Cat I MA 4891. TOPICS IN MATHEMATICS (p. 183)
- Cat II MA 4892. TOPICS IN ACTUARIAL MATHEMATICS (p. 183)
- Cat II GOV 1320. TOPICS IN INTERNATIONAL POLITICS (p. 195)

Additionally, special topics in Psychology at the 1000, 2000, 3000, and 4000 level were recently approved and appear in the 2018-2019 catalog (p. 193-194):

Psychology Special Topics Courses

PSY 1800. SPECIAL TOPICS IN PSYCHOLOGICAL SCIENCE. Cat II (Credits will be assigned by the instructor ranging from 1/6-1/3 unit)

This course provides an opportunity for students with little to no background in psychological science to learn about a special topic within Psychological Science. This course may be repeated for different topics.

PSY 2800. SPECIAL TOPICS IN PSYCHOLOGICAL SCIENCE. Cat II (Credits will be assigned by the instructor ranging from 1/6-1/3 unit)

This course provides an opportunity for students with some background and interest in psychological science to learn about a special topic within Psychological Science. Recommended background: An introductory background in psychological science (PSY 1400, PSY1401, PSY 1402, or equivalent). This course may be repeated for different topics.

PSY 3800. SPECIAL TOPICS IN PSYCHOLOGICAL SCIENCE. Cat II (Credits will be assigned by the instructor ranging from 1/6-1/3 unit)

This course provides an opportunity for students with a solid background and interest in psychological science to learn about a special topic within Psychological Science. Recommended background: one 2000-level Psychological Science courses (or equivalent). This course may be repeated for different topics.

PSY 4800. SPECIAL TOPICS IN PSYCHOLOGICAL SCIENCE. Cat II (Credits will be assigned by the instructor ranging from 1/6-1/3 unit)

This course provides an opportunity for students with a strong background and interest in psychological science to learn about a special topic within Psychological Science.

Recommended background: two 2000 and/or 3000 level Psychological Science courses.

This course may be repeated for different topics.

These courses are designated as either *Cat I* (offered every year), *Cat II* (offered at least every other year). To allow for more infrequent scheduling, this motion utilizes the *Cat III* category to allow departments more flexibility in their offerings. The motion does not change the category of the courses listed above.

At the graduate level, there are many special topics courses and there are established operational rules (e.g. number of times same topic can be offered, catalog listings). As there are already special topics being offered by some departments at the undergraduate level and additional special topic courses were recently approved, this motion serves to establish parameters appropriate to undergraduate study.

At the graduate level, there are many special topics courses (e.g. MFE 594. Special Topics) that require the consent of the instructor for registration. While this restriction is appropriate at the graduate level, no special topics undergraduate course should require students to receive faculty approval for registration, in keeping with current practice for undergraduate courses and the spirit of the WPI Plan.

Implementation Date: Academic Year 2018 – 2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. A. Zeng, Chair)
Re: Motion to add MA 1801 Denksport

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Academic Operations recommends and I move that MA1801, Denksport as described below, be added.

Proposed Course Description:

MA1801 Denksport Cat. I (1/12 unit)

Problem solving is a fundamental mathematical skill. In this course students will be exposed to problems coming from a wide range of mathematical disciplines; and will work together in a collaborative environment to explore potential solutions. Discussion problems may be inspired by the research of faculty leading the discussion, by past mathematical competitions (such as the Putnam Competition) or elsewhere. This course meets once per week, with an emphasis on discussion and exploration of problems. There will be no exam and no assigned homework. Grading is by participation only. This course may be taken multiple times; content will vary depending on the speakers. Grading for this course will be on a Pass/NR basis.

Recommended background: Curiosity about Mathematics

Anticipated Instructor: Faculty members of the Mathematical Sciences department will alternate in moderating problem sessions on a voluntary basis. One faculty member per term will serve as coordinator. This is an uncompensated out-of-load activity for both instructors and coordinators.

Preferred term: A, B, C, and D-term (this course will be offered every term)

Rationale:

This course will create an active learning environment and build community in the Mathematical Sciences Department. Through the exposure to almost all instructors and subsequently a large variety of topics, students will be enabled to synthesize their mathematical knowledge.

Denksport will also serve the function of the weekly tea/coffee hour, common in many math departments, in a more substantial vertically integrated fashion. Assigning a minimal amount of credit for undergraduates to the activity and stressing that passing the course means regular attendance should insure undergraduate participation. The hope is that also graduate student participation and faculty participation will become regular. Each faculty member or graduate student will contribute one hour per year or every other year and create problems with solutions for that session. By compiling a document detailing problems/solutions discussed each week, our department could establish its identity and share its diversity with past/future students and colleagues.

Denksport was offered during A and B term 2017:

1. ***Student feedback:*** Here are, verbatim, some of the written statements from course evaluations.
 - This course created an intellectual challenge that I don't see in any of my other courses.
 - I liked that different professors came in to present problems in their specialties.
 - An awesome way to expand your mind and interest in math!
 - Although it was sometimes difficult to follow, I enjoyed the experience.

- The level of math may have been way above my skills, but I learned a lot, especially when the instructors encouraged students to start problems on their own.
- I really liked the varied material, I learned from several topics, difficult material, things I did not know.
- The course was very informative on interesting material covered.

2. Outcomes from questions 1, 2, 9, and 26b of course evaluations:

A-term (3 respondents): Q1 4.67, Q2 5, Q9 5, Q 26b 2 0hrs; 1 1-5hrs

B-term (6 respondents): Q1 4.67, Q2 4.33, Q9 4.17, Q26b 5 0hrs; 1 1-5hrs

Note that the low answers in question 26b are by design of the course. Moreover, while there was only one scheduled hour per week, but all students stayed for another hour of discussions after the scheduled class time.

3. Instructor feedback and reflections: The active learning experience was enjoyable and idea exchange took place from faculty to student, student to faculty, student to student and faculty to faculty. The posters created for A-term weekly announcements, as well as problem solutions for the B-term sessions will be an attractive feature of the Mathematical Sciences Department's web-page.

It was wonderful to see more than 100% attendance, during B-term attendance was 200% (as also many students not signed up joined the class). Moreover, an all-time high of 14 students took part in the Putnam competition and 8 of them received a positive score (the median score is 0).

4. Population numbers: In both A and B term 2017 there were 7 registered students. However, quite a few more students attended. During each class 2-5 faculty and 7-15 students were present.

Resource Needs: Resources needed to deliver this course include the following:

- Instructor: Faculty members of the Mathematical Sciences department will alternate in moderating problem sessions on a voluntary basis. One faculty member per term will serve as coordinator. This is an uncompensated out-of-load activity for both, instructors and coordinators.
- Classroom: One classroom fitting 36 people equipped with a blackboard in Stratton Hall is needed for 2h/week.
- Laboratory: N/A
- Library resources: N/A
- Information Technology: N/A

Impact on Distribution Requirements and Other Courses: This course will affect the distribution requirements only insofar as it can be counted as 1/12 unit to the total 7 units Mathematical Sciences requirement in the Mathematical Sciences or Actuarial Mathematics majors (as well as free elective). Other departments will be informed about the availability of this course to determine if and how it can count towards their mathematics requirement.

Implementation Date: Implementation date for this action is the 2018-2019 Academic year.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. A. Zeng, Chair)
Re: Motion to add MA 4895 Differential Geometry

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Academic Operation recommends and I move that MA 4895 Differential Geometry, as described below, be added.

Proposed Course Description:

MA 4895 Differential Geometry (Cat. II)

The course gives an introduction to differential geometry with a focus on Riemannian geometry. Starting with the geometry of curves and surfaces in the three-dimensional Euclidean space and Riemannian metrics in 2 and higher dimensions, the course introduces the first fundamental form, tangent bundles, vector fields, distance functions and geodesics, followed by covariant derivatives and second fundamental form. The proof of Gauss's Theorema Egregium is highlighted. Additional topics are by instructor's discretion. Students may not receive credit for both MA 489X and MA 4895.

Recommended background: Advanced Linear Algebra and Real Analysis (e.g., MA 2073 Theoretical Linear Algebra and MA 3831 Principles of Real Analysis, or equivalent)

Anticipated Instructor: L. Capogna and M. Humi will be the primary instructors, but many members of the Mathematical Sciences Department can teach the course

Preferred term: D-term 2018/19 and in alternating years thereafter

Rationale:

Differential Geometry is an exciting and elegant discipline which has ample applications in science, engineering and pure mathematics. The proposed course offers an introduction to the fields of differential geometry and Riemannian manifolds. These are subjects which are central both in mathematics (one of the seven Millenium problems for whose solution the Clay Institute promised a \$1-million dollars prize was the Poincaré conjecture, which after being open for a century was finally proved 15 years ago) and in applications to other sciences (especially physics, since general relativity is built on the language of Riemannian geometry, and so are string theory and YangMills/Gauge theory). Yet, unlike virtually any respectable mathematics program in the US, there is no course at WPI about this subject, neither at the graduate nor at the undergraduate level. The proposed course aims at filling this gap in our educational offerings.

This course was run twice as an experimental course, In D-term 2013 (instructor Humi) and D-term 2015 (instructor Capogna):

1. Student feedback: Here are, verbatim, some of the written statements from course evaluations.

- LIKE about this course
 - Phenomenal subject
 - Prof. Humi gives clear explanations and does his best to ensure we understand.
 - Material was interesting.
 - Nice intro to advanced math. – Very helpful instructor.
- DISKLIKE about this course
 - The course was a bit too abstract, but this is not the professors fault.
 - What are the real world applications?
 - Not enough time to digest
- Not long enough
-

- Ideas for IMPROVEMENT:
 - The second half of the course is much more interesting/relevant than the first. Further, the first half is not applicable to the second. "Modern" methods deserve a full course, while index shuffling is a strictly worse method.
 - The historic route is not the most didactic.
 - More homework, more organized homework schedule.

2. Outcomes from questions 1, 2, 9, and 26b of course evaluations:

D-term 2013 (12 respondents): Q1 4.42, Q2 4.58, Q9 4.67, Q 26b 6 1-5hr/wk; 6 6-10hr/wk,

D-term 2015 (9 respondents): Q1 4.13, Q2 4.33, Q9 4.00, Q26b 1 1-5hr/wk; 4 6-10hr/wk; 3 11-15hr/wk; 1 16-20hr/wk.

3. Instructors feedback and reflections: In both offerings there was a mixed audience of undergraduates and graduate students (from several departments, but notably from math and physics). The first instance of the experimental course had also two faculty from physics sitting in the class. In both cases such was the interest that several ISP requests followed up for years after the offering of the experimental course. From the students evaluation comments we gather that the course was well received.

The slight tension in the first offering between a coordinate-based and coordinate-free version has been resolved in the second offering using a more intrinsic approach. To allow also for an extrinsic and computational perspective, we suggest to add to the course a conference of 1h/week.

We feel that the sizable graduate students' audience we had in the past, would translate into a positive experience for graduate students registered in the class. Consequently we are looking for ways to integrate a graduate component into the course (this will also have the side effect that the class size will increase).

4. Population numbers: D-term 2013: 18; D-term 2015: 11. Additionally, many graduate students and some faculty members audited the course.

Implementation Date: Implementation date for this action is the 2018-2019 Academic year.

Resource Needs: Resources needed to deliver this course, include the following:

- Instructor: L. Capogna and M. Humi will be the primary instructors, but many members of the MA Dept. can teach the course. New hires in the recent years make the offering of this course possible.
- Classroom: One classroom fitting 35 people equipped with class capture equipment, preferably in Stratton Hall is needed for 4h/week for class and 1h/week conference.
- Laboratory: Occasional use of the computer lab SH 003 for conferences
- Library resources: N/A; Information Technology: N/A

Impact on Distribution Requirements and Other Courses: This course will affect the distribution requirements only insofar as it can be counted as 1/3 unit to the total 7 units Mathematical Sciences requirement in the Mathematical Sciences or Actuarial Mathematics majors, in particular also to the 7/3 units requirement of courses of 3000 level and above for the Mathematical Sciences Major. The eligibility of this course to mathematics requirements of other departments has to be determined by the respective departments.

This course should be listed as "Course of Interest" for the "Computational and Applied Analysis" project area (p. 93 in the 2017/18 catalog).

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to remove HI 2331 Science, Technology, and Culture in the Early American Republic

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move that HI 2331 Science, Technology, and Culture in the Early American Republic be removed.

Rationale:

In a simultaneous motion, HUA proposes that HI 2331 be subsumed along with HI 2332 into a new topics course HI 2335. The existing chronology of HI 2331 no longer corresponds with established scholarship, particularly the use of 1865 as an arbitrary dividing point. While 1865 does mark the end of the Civil War and slavery in the United States, it does not mark a significant break in the history of science and technology.

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. HUA is simultaneously proposing the creation of a new topics course subsuming HI 2331. This course is not a prerequisite for other HUA courses or minors, nor will the new HI 2335.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to remove HI 2332 History of Modern American Science and Technology

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move, that HI 2332 History of Modern American Science and Technology be removed.

Rationale:

In a simultaneous motion, HUA proposes that HI 2332 be subsumed along with HI 2331 into a new topics course HI 2335. The existing chronology of HI 2332 beginning in 1865 and ending in the present has become unmanageable.

The removing of HI 2332 and the simultaneous creation of a new topics course (HI 2335) will offer more flexibility to effectively craft HI 2335 sections with more meaningful chronologies for the early, industrial, and post-industrial eras of American science and technology. Further, at a time when alternative teaching or administrative assignments frequently draw history faculty from their established courses, this revision would allow stand-in instructors greater autonomy in establishing the chronological emphasis of their sections.

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. HUA is simultaneously proposing the creation of a new topics course subsuming HI 2332. This course is not a prerequisite for other HUA courses or minors, nor will the new HI 2335.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add HI 2335 Topics in the History of American Science and Technology

Motions: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move that a topics course HI 2335 Topics in the History of American Science and Technology, as described below, be added to the catalog.

Proposed Course Description:

HI 2335. TOPICS IN THE HISTORY OF AMERICAN SCIENCE AND TECHNOLOGY (*Cat. I*)

This course surveys the interplay of science, technology and culture in American national development. Emphasis is placed upon building chronological narratives while attending to the themes, approaches, and sources historians use to explore Americans' enthusiastic but sometimes controversial embrace of science and technology. Chronologies and themes will vary across sections covering topics such as Science, Technology and Culture in Early America; Science, Technology in Industrializing America; Science and Technology in Post-1945 America; and Technology and Culture in the Rise of Urban America. This course may be repeated for different topics. No prior coursework or background in the history of science and technology is required.

Anticipated Instructors: Constance Clark, Joseph Cullon, David Spanagel and other interested faculty

Expected Enrollment and Intended Audiences: 50 per section; HUA Majors/Minors; HUA Requirement (Breadth/Depth); Free Elective

Rationale:

The current chronologies of the courses being subsumed (HI 2331 and HI 2332) no longer correspond with established scholarship, particularly the use of 1865 as an arbitrary dividing point. While 1865 does mark the end of the Civil War and slavery in the United States, it does not mark a significant break in the history of science and technology. Rather, it artificially divides the era of industrial and railroad expansion. Further, coverage of post-1945 technological and scientific development is sometimes sacrificed by beginning the second half of the two-course survey with Darwin's *Origins of Species* (1859) transcontinental railroad (1869), the telephone (1876), and Pearl Street Station (1882). The proposed revision offers more flexibility to effectively craft HI 2335 sections with more meaningful chronologies for the early, industrial, and post-industrial eras of American science and technology. Further, at a time when alternative teaching or administrative assignments frequently draw history faculty from their established courses, this revision would allow stand-in instructors greater autonomy in establishing the chronological emphasis of their sections. Thus, the revision also would allow the instructor autonomy to connect their other teaching initiatives and research enterprise. The history faculty will ensure that different sections have enough difference to warrant credit for more than one topic.

Resources Needs: None

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. Currently both HI 2331 and HI 2332 are capped at 50 and have been consistently fully or over enrolled for over the last four years. Neither of the courses being replaced served as a prerequisite for other HUA courses or minors, nor will the new HI 2335.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to remove HI 2352, HI 2353, HI 2354, and HI 2402

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move that HI 2352 History of the Exact Sciences, HI 2353 History of the Life Sciences, HI 2354 History of the Physical Sciences, and HI 2402 History of Evolutionary Thought be removed.

Rationale:

In a simultaneous motion, HUA proposed that HI 2352, HI 2353, HI 2354, and HI 2402 be subsumed into a new topics course HI 2350. The move toward a topics framework for the History of Science offerings will allow instructors flexibility to pursue new lines of inquiry and emphasis corresponding with the bleeding of the exact, physical, life and evolutionary sciences into one another over the modern era.

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. HUA has historically offered a total of two sections per year in the history of science sequence (HI 2352, HI 2353, HI 2354 and HI 2402) being subsumed and anticipates continuing offering two sections of HI 2350 annually. Currently all four courses in the history of science sequence (HI 2352, HI 2353, HI 2354 and HI 2402) are capped at 50 with enrollments varying consistently from 19 (Exact Sciences) to 50 (Life Sciences) and averaging in the high near 40. None of the courses being replaced serve as a prerequisite for other HUA courses or minors, nor will the new HI 2350.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add HI 2350 Topics in the History of Science

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move that the course HI 2350 Topics in the History of Science, as described below, be added.

Proposed Course Description:

HI 2350. TOPICS IN THE HISTORY OF SCIENCE (*Cat. I*)

This course surveys the major developments, research enterprise, controversies and cultural contexts of particular scientific fields while also engaging students in examining the questions, methods and sources that inform the history of science. Sections will vary in topic, focusing on the history of a subset selected from among the following fields: astronomy, cosmology, mathematics, biology, medicine, ecology, evolutionary ideas, the earth sciences, chemistry, physics, or the human sciences. This course may be repeated for different topics. No prior coursework or background in the history of science is required.

Anticipated Instructors: Constance Clark, Joseph Cullon, David Spanagel and other interested faculty

Expected Enrollment: 25-55 per section

Intended Audiences: HUA Majors/Minors; HUA Requirement (Breadth/Depth); Free Elective

Rationale:

This course subsumes the following courses:

HI 2352. HISTORY OF THE EXACT SCIENCES. *Cat. II*

HI 2353. HISTORY OF THE LIFE SCIENCES. *Cat. II*

HI 2354. HISTORY OF THE PHYSICAL SCIENCES. *Cat. II*

HI 2402. HISTORY OF EVOLUTIONARY THOUGHT. *Cat. II*

Like the courses being subsumed, the proposed topics course retains an emphasis on surveying the evolution and revolutions within scientific disciplines as research methods mature, new paradigms advance, and fields of inquiry splinter into more specialized subfields. While each course in the old sequence offers flexibility in choosing content, the boundaries separating the exact, physical, life and evolutionary sciences are growing more porous over time. Breaking down the boundaries will allow instructors to pursue new lines of inquiry and emphasis corresponding with the bleeding of the exact, physical, life and evolutionary sciences into one another over the modern era. The contraction also promises an expansion, allowing instructors to pursue topics outside the current four categories (e.g., exact, physical, life and evolutionary sciences), such as the human, medical, or earth sciences. Further, at a time when alternative teaching or administrative assignments frequently draw history faculty from their established courses, this revision would allow stand-in instructors greater flexibility in establishing the thematic emphasis of their sections. Thus, the revision also would allow the instructor autonomy to connect their other teaching initiatives and research enterprise. The history faculty will ensure that different sections have enough difference to warrant credit for more than one topic.

Resources Needs: None

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. HUA has historically offered a total of two sections per year in the history of science sequence (HI 2352, HI 2353, HI 2354 and HI 2402) being subsumed and anticipates continuing offering two sections of HI 2350 annually. Currently all four courses in the history of science sequence (HI 2352, HI 2353, HI 2354 and HI 2402) are capped at 50 with enrollments varying consistently from 19 (Exact Sciences) to 50 (Life Sciences) and averaging in the high near 40. None of the courses being replaced serve as a prerequisite for other HUA courses or minors, nor will the new HI 2350.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to remove HI 2401 and HI 2403

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move that HI 2401 U.S. Environmental History and HI 2403 Global Environmental History be removed.

Rationale:

HUA seeks to replace HI 2401 and HI 2403 with HI 2400, a topics course, which will allow faculty the flexibility to develop alternating sections corresponding with trends in established scholarship and promoting regional (i.e., North American, Latin American or other geographic appellations) and transregional (i.e., Global) approaches. Thus, the contraction opens an opportunity for expansion, granting for faculty the flexibility to develop sections aligned with established and new geographic foci of their research and Global Project Center advising.

Impact on Distribution Requirements and Other Courses: There is no anticipated impact as HUA is simultaneously proposing adding a topics course (HI 2400) to replace HI 2401. HUA has historically offered one section per year in environmental history alternating between United States (2401) and Global approaches (HI 2403) and anticipates continuing offering one section of HI 2400. Currently both HI 2401 and HI 2403 are capped at 50 with enrollments varying from 34 to 50 (with an average of 45) over the last four years. None of the courses being replaced serve as a prerequisite for other HUA courses or minors, nor will the new HI 2400. In addition, this will not impact minors, which list HI 2401 or 2403 as recommended courses, as regular, alternating sections will continue to be offered annually.

Implementation Date: AY 2018-2019

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add HI 2400 Topics in Environmental History

Motion: On behalf of the Humanities & Arts Department, the Committee on Academic Operations recommends and I move, that the course HI 2400 Topics in Environmental History, as described below, be added.

Proposed Course Description:

HI 2400. TOPICS IN ENVIRONMENTAL HISTORY (*Cat. I*)

This course surveys the methods and sources that historians adopt to answer three questions central to environmental history: How have constantly changing natural environments shaped the patterns of human life in different regions? How have different human cultures perceived and attached meanings to the natural and built worlds around them, and how have those attitudes shaped their social, economic political, and cultural lives? Finally, how have people altered the world around them, and what have been the consequences of change for natural and human communities alike? Sections will vary in content and emphases alternating between North American, regional, or global approaches. This course may be repeated for different topics. No prior coursework or background in environmental history is required.

Anticipated Instructors: Constance Clark, Joseph Cullon, Parker Everett, David Spanagel and other interested faculty

Expected Enrollment: 35-50 per section

Intended Audiences: HUA Majors/Minors; HUA Requirement (Breadth/Depth); Free Elective; Minors in Sustainability Engineering and Global Public Health; Major/Minors in Environmental and Sustainability Studies and International and Global Studies.

Rationale:

This course subsumes the following two courses:

HI 2401. UNITED STATES ENVIRONMENTAL HISTORY. *Cat. II*

HI 2403. GLOBAL ENVIRONMENTAL HISTORY. *Cat. II*

Increasingly, environmental historians recognize that the nation-state, like the United States, is no longer a sufficient category of analysis for exploring environmental changes that refuse to recognize political borders (e.g., climate change, extinction, air pollution, etc.). Hence, this revision would correspond with the trend in established scholarship and promote regional (i.e., North American, Latin American or other geographic appellations) and transregional (i.e., Global) approaches to the field's three central questions. Thus, the contraction opens an opportunity for expansion, granting faculty the flexibility to develop sections aligned with established and new geographic foci of their research and Global Project Center advising. The history faculty will ensure that different sections have enough difference to warrant credit for more than one topic.

Implementation Date: AY 2018-2019

Resources Needs: None

Impact on Distribution Requirements and Other Courses: There is no anticipated impact. HUA has historically offered one section per year in environmental history alternating between United States (2401) and Global approaches (HI 2403) and anticipates continuing offering one section of HI 2400 annually. Currently both HI 2401 and HI 2403 are capped at 50 with enrollments varying from 34 to 50 (with an average of 45) over the last four years. None of the courses being replaced serve as a prerequisite for other HUA courses or minors, nor will the new HI 2400. In addition, this will not impact minors, which list HI 2401 or 2403 as recommended courses, as regular, alternating sections will continue to be offered annually.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add a Cyber Security concentration to the CS major

Motion: On behalf of the Computer Science Department, the Committee on Academic Operations recommends and I move that a Cyber Security concentration be added to the CS major, as described below.

Description of the Proposed Cyber Security Concentration:

General Requirements for the CS major and for concentrations within the major:

The distribution requirements of the CS major require all students to complete 6 units from Computer Science, including the MQP, with requirements from certain areas (Systems, Theory and Languages, Design, and Social Implications), with at least 5/3 units from 4000-level or graduate courses. Additional requirements include study in Mathematics and Basic Science and/or Engineering as well as restrictions against counting certain courses targeted at non-majors.

The Computer Science major currently does not have any concentrations designated.

Students taking the proposed Cyber Security concentration would be required to complete a security-focused MQP and select 2 units of security-relevant courses from within the existing CS distribution requirements.

Proposed Catalog Revisions

It is proposed that the above revisions to the CS major be formally documented by the following amendments to the language in WPI's undergraduate catalog. Additions are indicated in underlined italics (with deleted text indicated by ~~strikethroughs~~).

CS CONCENTRATIONS

Students pursuing the CS major may, at their option, choose to focus in the following topic of concentration:

- Cyber Security

Cyber Security Concentration

Students taking the Cyber Security Concentration must:

1. Satisfy 2/3 units in core Cyber Security classes from:
 - a. Software Security Engineering (CS 4401)
 - b. Tools and Techniques in Computer Network Security (CS 4404)
 - c. Introduction to Cryptography and Communication Security (CS 4801/ECE 4802)
 - d. Other Cyber Security-specific courses subject to program approval
2. Satisfy 1/3 units in courses discussing societal impacts of security from one of:
 - a. Cyberlaw and Policy (GOV 2314)
 - b. Social Implication of Information Processing (CS 3043)
 - c. Other Cyber Security-related societal impacts courses subject to program approval

3. Satisfy 3/3 units in additional courses from:
 - a. Operating Systems (CS 3013)
 - b. Computer Networks (CS 3516)
 - c. Advanced Computer Networks (CS 4516)
 - d. Distributed Computing Systems (CS 4513)
 - e. Mobile and Ubiquitous Computing (CS 4518)
 - f. Any of the core Cyber Security courses listed above that are not used to meet the core requirement
 - g. Other Cyber-Security-related courses subject to program approval
4. Complete a Cyber Security-related Major Qualifying Project, subject to program approval

Graduate courses may be counted towards the Cyber Security concentration at the discretion of the program.

Rationale:

Students majoring in Computer Science already can gain a deep understanding of Cyber Security and the challenges of defending software and hardware systems. However, without a formal designation as part of their education, these students may be at a disadvantage when seeking employment in the industry, or particularly, in the federal government. WPI currently has a \$4.4 million scholarship grant to train students in Cyber Security and prepare them for federal agency positions. While graduate CS students can specialize in security, we lack such designations for undergraduates.

Cyber security has been identified as a focus area in WPI's Strategic Plan. Hiring within the Computer Science department in recent years has increased the number of faculty able to teach courses relevant to this concentration.

The Computer Science Department voted to approve this concentration on April 10, 2018.

Resource Impact: The proposed revisions to the CS major require no change in current Cyber Security or CS faculty count or physical/administrative resources since all the relevant courses are already offered on a regular basis and will continue to serve the same number of students. Further, course scheduling can accommodate all intended course offerings with enough flexibility to meet programmatic goals and respond to student demand.

With recent faculty hires within the CS Department, the Department has the necessary resources to advise the MQPs required to complete this concentration.

Implementation Date: The proposed implementation date is AY2019-2020.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to remove SD1520: System Dynamics Modeling

Motion: On behalf of the SSPS department, the Committee on Academic Operation recommends and I move that the course SD1520: System Dynamics Modeling be removed.

Current title, description and course offering schedule:

SD1520: System Dynamics Modeling (Category I)

The purpose of this course is to prepare students to produce original system dynamics computer simulation models of economic and social systems. Models of this type can be used to examine the possible impacts of policy changes and technological innovations on socioeconomic systems. The curriculum in this course is divided into three distinct parts. First, a detailed examination of the steps of the system dynamics modeling process: problem identification (including data collection), feedback structure conceptualization, model formulation, model testing and analysis, model documentation and presentation, and policy implementation. Second, a survey of the "nuts and bolts" of continuous simulation modeling: information and material delays, time constants, the use of noise and numerical integration techniques, control theory heuristics, and software details (both simulation and model presentation and documentation software). Third, a step-by-step, in-class production of a model, involving the construction, testing, and assembly of subsectors. Students will be required to complete modeling assignments working in groups and take in-class quizzes on modeling issues. Recommended background: SD 1510, or permission of instructor.

Rationale:

This course is being replaced with SD2520: Modeling Economic and Social Systems, as described in a separate and concurrent motion to the CAO. It has become clear that even though the purpose of the course is to cover models of economic and social systems, SD1520 must repeat fundamental system dynamics concepts already covered in SD1510: Introduction to System Dynamics, and SS1505: Games for Understanding Complexity, so that all students enrolled in the course are able to follow its content. This limits coverage of the intended agenda. Now that we have two courses (SD1510 and SS1505) that expose students to fundamentals of system dynamics modeling with different approaches, deleting SD1520 and adding SD2520, which recommends SD1510 or SS1505 as the prior background, will allow the instructor to focus on modeling social and economic systems, rather than the basics of system dynamics modeling.

Impacts on students: SD1520 will be replaced by SD2520, which will complement SS1505 and SD1510. All system dynamics courses are offered by the SSPS department as courses for meeting the university's social science requirement and as part of our minor in system dynamics. They are also available to other majors as electives.

Resource Needs:

N.A.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add SD2520: Modeling Economic and Social Systems

Motion: On behalf of the Social Sciences and Policy Studies Department, the Committee on Academic Operation recommends and I move that the course SD2520: Modeling Economic and Social Systems as described below be added.

Proposed title, description, and course offering:

SD2520: Modeling Economic and Social Systems (Category II)

The purpose of this course is to prepare students to construct original system dynamics computer simulation models of economic and social systems from real world situations. They are coached to experiment with these models to understand unintended consequences of policy and to design effective policy interventions. Such a modeling process can be used to examine the possible impacts of policy changes and technological innovations on socioeconomic systems. The curriculum in this course covers a detailed examination of the steps of the system dynamics modeling process: problem identification (including data collection and analysis), feedback structure conceptualization, model formulation, model testing and analysis, model documentation and presentation, and policy implementation, illustrated by examples from business, economy and social systems. This course together with either SS1505 or SD1510 can provide the basic background for the students to use system dynamics in their IQP/MQP projects. Students will not be granted credit for both SD1520 and SD2520.

Recommended background: Fundamental systems thinking concepts as presented in SS1505, SD1510, or permission of the instructor.

Rationale:

This course will replace SD1520: System Dynamics Modeling that is being deleted, as described in a separate and concurrent motion to the CAO. It has become clear that even though the purpose of SD1520 is to cover models of economic and social systems, the course must repeat fundamental system dynamics concepts already covered in SD1510: Introduction to System Dynamics, and SS1505: Games for Understanding Complexity, so that all students enrolled in the course are able to follow its content. This limits coverage of the intended agenda in SD1520. Now that we have two courses (SD1510 and SS1505) that expose students to fundamentals of system dynamics modeling using different approaches, deleting SD1520 and adding SD2520, which recommends SD1510 or SS1505 as the prior background, will allow the instructor to focus on modeling social and economic systems, rather than the basics of system dynamics modeling. The title of SD2520: Modeling Economic and Social Systems is aligned with the specific modeling agendas that it covers.

Students will be advised to take SS1505 or SD1510 before taking SD2520. SD2520 can be taken towards satisfying the university's social science requirement, and it can be taken as an elective for a variety of majors and minors in engineering and sciences. Students will not be granted credit for both SD1520 and SD2520.

Impacts on students: SD2520 complements SS1505 and SD1510, which are offered by the SSPS department as courses for meeting the university's social science requirement and as part of our minor in system dynamics. SD2520 will also be available to other majors as an elective.

Resource Needs: No new resources are needed as the course will replace SD1520, which has been taught using our existing faculty resources. The course SD1520 is currently taught by Professor Khalid Saeed, who will continue teaching it as SD2520. An AV equipped classroom will be used as for course SD1520. The course requires use of *ithink/ Stella* software which are available on WPI network servers and are used for our other graduate and undergraduate system dynamics courses. Current number of software licenses on WPI network is 50, which is adequate for the foreseeable future.

Implementation: To be first offered in B-19 and every two years thereafter.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add ECON 2910/ETR 2910 Economics and Entrepreneurship

Motion: On behalf of the Foisie School of Business and the Social Sciences and Policy Studies Department, the Committee on Academic Operations recommends and I move that ECON 2910/ETR 2910 Economics and Entrepreneurship, as described below, be added as a permanent course.

Proposed Course Description:

ECON 2910/ETR 2910 *Economics and Entrepreneurship* (Category I).

This course is designed to provide an introduction to economics, an introduction to entrepreneurship, and an understanding of the linkages between economics and entrepreneurship. Students will apply these concepts to the assessment of opportunities that might arise from participation in WPI projects.

Students will engage in exploring how economics and entrepreneurship can inform opportunity assessment within an ambiguous and uncertain context. These decisions are always made with incomplete information and there is typically no single correct answer but rather multiple possible answers -- each with pluses and minuses.

Recommended background: None

Students may not earn credits for both ECON 2910/ETR 2910 and ECON 291X/ETR 291X

Anticipated Instructor: Professor Frank Hoy and Professor Oleg Pavlov

Rationale:

This course is an innovative response to WPI's Innovation & Entrepreneurship Pillar. By taking this course, the students will satisfy one of their social science requirements and at the same time be given an opportunity to consider entrepreneurship as a career option.

This course is designed to be a natural complement to WPI's project-based learning. It will introduce students to the economic and entrepreneurial concepts and frameworks related to the launching of a new venture. Students will be able to use the material in the course to bring to market ideas developed in GPS, IQP, MQP, a project embedded in a course, or an independent study.

The proposed course is a complement to ETR 1100, which covers a broader range of issues than the course proposed here. ETR 3633 focuses on a different topic – entrepreneurial selling. All our other undergraduate ETR courses (ETR 3920, ETR 3910 and ETR 4930) have business courses as recommended background.

This course will also complement the current economics offerings in the SSPS department. It will show the practical importance of the economic theory. The objectives of the course are well aligned with WPI's present goal of extending entrepreneurship education across campus.

This course was successfully offered as ECON 291X/ETR 291X in B '16 to a class of 26 students and in B'17 to 16 students. It was well received by students in these two experimental offerings.

Student Feedback:

1. Student feedback: A student in ETR 3633 this term says he signed up because of what he learned in ETR 291X in the fall of '16.
2. Feedback from course evaluations, quotes from students, reflecting their learning experience:
 - “Course topic very interesting professors promoted class discussions”
 - “Loved the interaction with entrepreneurs and applying it with real life cases”
 - “Prof. Hoy was a great teacher throughout the term and was extremely engaging. I have sparked an interest in entrepreneurship”
3. Outcomes from questions 1, 2, 9, and 26 of course evaluations (Hoy/Pavlov):

2016-17	18/16 resp.	1) 3.67/4.00	2) 4.06/4.13	9) 3.44/3.67	26B) 1-5 hrs./1-5 hrs.
2017-18	13/14 resp.	1) 4.62/4.57	2) 4.71/4.62	9) 4.71/4.46	26B) 1-5 hrs./1-5 hrs.
4. Instructor feedback and reflections: Profs Hoy and Pavlov enjoyed the course on the first round, but felt they could improve on helping students achieve the learning objectives. The last course offering demonstrated this improvement. Prof. Hoy will continue to focus on communicating the interrelationships of economics and entrepreneurship, and feels encouraged by student feedback on course experience.
5. Population numbers:

B '16	ECON 291X = 18	&	ETR291X = 8	Total 26
B '17	ECON 291X = 10	&	ETR291X = 6	Total 16

Resource Requirements: Professor Frank Hoy & Professor Oleg Pavlov already teach ECON 291X/ETR 291X *Economics and Entrepreneurship* annually as part of their regular load. A standard lecture hall/classroom is required, with no special equipment. No additional resources will be required.

Impact on Distribution Requirements and Other Courses:

1. Any WPI undergraduate student may take this course
 - a. As a free elective (ECON or ETR)
 - b. As a social science course (ECON)
 - c. As an entrepreneurship course (ETR) for RBE majors
 - d. As a business course (ETR)
2. BU, MGE, and MIS majors may also use this course to fulfill a Breadth Elective.
3. This course will be an additional option in the ETR minor.

There is no impact on other programs' distribution requirements.

Implementation Date: AY 2018-2019.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to modify MA2071 Matrices and Linear Algebra I

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Academic Operation recommends and I move that the course description for MA2071 Matrices and Linear Algebra I be modified as described below.

Current title, description and course offering schedule:

MA 2071: MATRICES AND LINEAR ALGEBRA I (Cat. I)

This course provides a study of computational techniques of matrix algebra and an introduction to vector spaces. Topics covered include: matrix algebra, systems of linear equations, eigenvalues and eigenvectors, least squares, vector spaces, inner products, and introduction to numerical techniques, and applications of linear algebra. Recommended background: None.

Proposed title, description, and course offering:

MA 2071: MATRICES AND LINEAR ALGEBRA I (Cat. I)

This course provides an introduction to the theory and techniques of matrix algebra and linear algebra. Topics covered include: operations on matrices, systems of linear equations, linear transformations, determinants, eigenvalues and eigenvectors, least squares, vector spaces, inner products, introduction to numerical techniques, and applications of linear algebra. Credit may not be earned for this course and MA 2072.

Recommended background: None, although basic knowledge of equations for planes and lines in space would be helpful.

Preferred term: A, B, C, D

Rationale:

The motion makes minor revisions to the description of MA2071 in the course catalogue as part of a review of undergraduate linear algebra offerings at WPI; and to better align the catalogue description with the material covered in the class. The description is updated also to reflect the introduction of MA2072.

The introduction of MA2072 is intended to reflect established practice in the department of offering an accelerated introduction to Linear Algebra in C term. In the past, this was taught under the course code MA2071. This update is intended to better reflect Linear Algebra offerings at WPI. Apart from changes resulting from the introduction of MA2072, revisions are minor, reflecting the material actually covered in the course.

Impacts on students: The catalogue will better reflect the content of the course, and of linear algebra offerings at WPI. There will be no impact on the material covered in MA2071. Students will have the option of an accelerated version of this course, MA2072.

Resource Needs: Total resource allocations for MA2071 and MA2072 will be unchanged, these changes are intended to better align the course catalogue with offerings at WPI. Relabelling of courses means that two fewer sections of MA2071 will be offered each C term, but these will be replaced by two sections of MA2072.

Implementation Date: The implementation date for this action is the 2018-2019.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add MA 2072 Accelerated Matrices and Linear Algebra

Motion: On behalf of Department of Mathematical Sciences, the Committee on Academic Operation recommends and I move that the course MA 2072 Accelerated Matrices and Linear Algebra, as described below, be added.

Proposed Course Description:

MA 2072. ACCELERATED MATRICES AND LINEAR ALGEBRA I (Cat. I)

This course provides an accelerated introduction to the theory and techniques of matrix algebra and linear algebra, aimed at Mathematical Sciences majors and others interested in advanced concepts of linear algebra. Topics covered include: matrix algebra, systems of linear equations, linear transformations, determinants, eigenvalues and eigenvectors, the method of least squares, vector spaces, inner products, non-square matrices and singular value decompositions. Students will be exposed to computational and numerical techniques, and to applications of linear algebra, particularly to Data Science. Credit may not be earned for this course and MA 2071.

Recommended background: Basic knowledge of matrix algebra

Preferred term: C

Anticipated Instructor: Most members of the Mathematical Sciences faculty can teach this course.

Rationale:

An accelerated version of MA 2071 was offered informally for many years by W. Farr and P. Christopher in C term, with enrollment restricted to freshmen who took an accelerated version of MA 2051 in B term. There have typically been two sections, with a total enrollment of approx. 70 students. This accelerated version was taught in parallel with MA 2071, under the same course code. There are no longer any restrictions on entry to the accelerated version of MA 2071. This motion is intended to clearly describe the accelerated version of the course and to differentiate it from MA 2071. The motion will ensure that the course catalogue accurately reflects linear algebra offerings at WPI, and that students are aware of all courses offered in linear algebra.

Resource Needs: This course has previously been offered under the course code MA 2071. The listed resource requirements for MA 2072 are balanced by a reduction in the requirements for MA 2071. There is no net change in the resourced required to teach introductory courses in linear algebra as a whole. This motion does not affect linear algebra offerings, but rather how they are listed in the course catalogue.

- Most members of the faculty can teach this course.
- One classroom fitting 70 students is needed for 4h/week for class and 1h/week for conference.
- Laboratory: N/A
- Library resources: N/A
- Information Technology: N/A

Impact on Distribution Requirements and Other Courses:

The proposed changes reflect established practice in the offerings of linear algebra at WPI; as such it is anticipated that the introduction of this course will have minimal impact on distribution

requirements. This course affects distribution requirements only insofar as it can be counted as 1/3 unit to the total 7 units Mathematical Sciences requirement in the Mathematical Sciences or Actuarial Mathematics majors. The eligibility of this course to mathematics requirement of other departments should be determined by the respective departments.

This course should be listed under “Introductory Courses” in the Mathematical Sciences Major Program Chart (page 101 of the 2017-18 course catalogue), and for the Actuarial Major (page 102 of the 2017-18 course catalogue).

Implementation Date: Implementation date for this action is the 2018-2019 Academic year.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to modify MA2073 Matrices and Linear Algebra II

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Academic Operation recommends and I move that the description for MA2073 Matrices and Linear Algebra II be modified, as described below.

Existing title, description and course offering schedule:

MA 2073. MATRICES AND LINEAR ALGEBRA II

Cat. I This course provides a deeper understanding of topics introduced in MA 2071 and also continues the development of those topics. Topics covered include: abstract vector spaces, linear transformations, matrix representations of a linear transformation, characteristics and minimal polynomials, diagonalization, eigenvalues and eigenvectors, inner product spaces. This course is designed primarily for Mathematical Science majors and those interested in the deeper mathematical issues underlying linear algebra. Undergraduate credit may not be earned both for this course and for MA 3071. Recommended background: MA 2071.

Proposed title, description, and course offering:

MA 2073. MATRICES AND LINEAR ALGEBRA II

Cat. I This course provides a deeper understanding of topics introduced in MA 2071, and continues the development of linear algebra. Topics covered include: abstract vector spaces, linear transformations, matrix representations of a linear transformation, determinants, characteristic and minimal polynomials, diagonalization, eigenvalues and eigenvectors, the matrix exponential, inner product spaces. This course is designed primarily for Mathematical Science majors and those interested in the deeper mathematical issues underlying linear algebra. Recommended background: MA 2071 or MA 2072.

Preferred term: C

Rationale:

The motion makes minor revisions to the description of MA2073 in the course catalogue as part of a review of undergraduate linear algebra offerings at WPI; and to better align the catalogue description with the material covered in the class. The description is updated also to reflect the introduction of MA2072, and that MA3071 is no longer offered.

The motion is the result of a routine review of course catalogue. Revisions are minor, reflecting the material actually covered in the course. The description is updated also to reflect the introduction of MA2072, and that MA3071 is no longer offered.

Impacts on students: The catalogue will better reflect the content of the course. There will be no impact on the material covered in the course.

Resource Needs: This change has no impact on resources required for this course.

Implementation Date: The implementation date for this action is the 2018-2019.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to modify the course name of MA4291 Applicable Complex Variables

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Academic Operation recommends and I move that the course name for MA4291 Applicable Complex Variables be modified to Applied Complex Variables, as described below.

Current title, description and course offering schedule:

MA 4291. APPLICABLE COMPLEX VARIABLES (Cat. I)

This course provides an introduction to the ideas and techniques of complex analysis that are frequently used by scientists and engineers. The presentation will follow a middle ground between rigor and intuition. Topics covered include: complex numbers, analytic functions, Taylor and Laurent expansions, Cauchy integral theorem, residue theory, and conformal mappings. Recommended background: MA 1024 and MA 2051.

Proposed title, description, and course offering:

MA 4291. APPLIED COMPLEX VARIABLES (Cat. I)

This course provides an introduction to the ideas and techniques of complex analysis that are frequently used by scientists and engineers. The presentation will follow a middle ground between rigor and intuition. Topics covered include: complex numbers, analytic functions, Taylor and Laurent expansions, Cauchy integral theorem, residue theory, and conformal mappings. Recommended background: MA 1024 and MA 2051.

Preferred Term: D

Rationale:

It is proposed to change the course title to better align with the material covered in the course. There will be no change to course content. The new title more accurately describes the content of the course.

Impacts on students: There is no impact on the material taught in the course.

Resource Needs: This change has no impact on resources required for this course.

Implementation Date: The implementation date for this action is the 2018-2019.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to add RBE 3100 Social Implications of Robotics

Motion: On behalf of the Robotics Engineering Program, the Committee on Academic Operation recommends and I move that RBE 3100 Social Implications of Robotics, as described below, be added.

Proposed Course Description:

RBE 3100, Social Implications of Robotics, Course Category (Cat.I)

This course introduces students to the social, moral, ethical, legal, and current or future philosophical issues within the context of robotic systems and related emerging technology. Students will be expected to contribute to classroom presentations, discussions and debates, and to complete a number of significant writing assignments. This course is recommended for juniors and seniors.

Recommended background: A general knowledge of robots and robotic systems.

Students may not receive credit for both RBE 3100 and RBE 310X.

Anticipated Instructor: Craig Putnam

Rationale:

Students majoring in Robotics Engineering (RBE) are required to take a Social Implications course. The only available options for them prior to the creation of RBE 310X were CS 3043, GOV 2302, and GOV/ID 2314. In the past, many RBE majors opted for STS 2208 (The Society-Technology Debate) – but that course is no longer offered.

RBE 310X has been offered twice as an experimental course (A'17 and C'18) and must be converted to a regular course before it can be taught again.

An experimental version of RBE3100, numbered RBE 310X has been offered twice as an experimental course (A'17 and C'18). There were 18 students enrolled during A17 and 17 students enrolled during C18.

The course was well-received by students with all students with students providing average feedback as follows:

	A17	C18
General Impressions (average of questions 1-8)	4.60	4.37
Relative to other college courses I have taken (average of questions 9-16)	4.19	3.92
How frequently were the following statements true in this course (average of questions 17-23)	4.69	4.75

In particular, the outcomes for specific questions were:

		A17	C18
1. My overall rating of the quality of this course is		4.76	4.50
2. My overall rating of the instructor's teaching is		4.76	4.64
9. The amount I learned from the course was		4.12	3.79
26A. On average, how many hours of the formally scheduled hours for lecture, conference, and labs did you ATTEND each week?			
	3 hr/wk or less	1	0
	4 hr/wk	14	14
	5 hr/wk	1	0
	6 hr/wk	1	0
	7 hr/wk or more	0	0
26B. On average, what were the total hours spent in each 7-day week OUTSIDE of formally scheduled class time in work related to this course (including studying, reading, writing, homework, rehearsal, etc)?			
	0 hr/wk	0	0
	1-5 hr/wk	7	11
	6-10 hr/wk	9	2
	11-15 hr/wk	0	0
	16-20 hr/wk	1	1
	21 hr/wk or more	0	0

Instructor feedback and reflections as captured on the Robotics Engineering Program Course Review Sheet that was completed at the end of each offering of the experimental course were as follows:

A17 Review Questions: Are the outcomes appropriate for this course? Do they correctly reflect what a student should be able to do after successfully completing this course? If not, how would you change them?

A17 Reflection: Yes, the outcomes seem to be appropriate. That said, I would like to teach the course at least one additional time (in C'18) before I consider making any changes.

A17 Other Reflections: I teach this as a flipped course, so there isn't any lecture; nor is there a lab. The discussion items I chose for the first offering of the course worked well for the most part, but there is always room for improvement. In some cases, there will need to be an ongoing effort to find and keep the discussion materials current as the technology is advancing so rapidly. This is particularly true in the area of self-driving vehicles.

The students seemed to enjoy the guest speakers I brought in. I would invite the first pair of speakers back, but need to work with them to better align their discussion topic with those of the course. The other three speakers nailed it and I think the students in future offerings of the course would enjoy their classes as much as this group did.

C18 Review Questions: Are the outcomes appropriate for this course? Do they correctly reflect what a student should be able to do after successfully completing this course? If not, how would you change them?

C18 Reflection: The outcomes continue to seem to be appropriate. While I may tweak the course content some for the next offering (presumed to be A'18) I don't intend to make any changes to the outcomes at this point.

C18 Other Reflections: Having now taught the course twice, it needs to go to CAO and then the greater WPI faculty to be turned into a regular category I offering. This needs to be accomplished before the planned offering in A'18.

I again brought in some guest speakers. I didn't invite the first two speakers I used in A'17; rather I invited two new speakers (from the auto insurance industry). That class went very well; I would like to invite them back again and I believe they would be interested in doing that. The other speakers are RBE faculty who spoke on autonomous vehicles and robotics in healthcare.

Resource Needs:

- Information on the instructor: Professor Craig Putnam has taught both experimental offerings of the proposed course and will continue to teach offerings of the course. Other RBE-affiliated faculty are available who could also teach the course.
- Classroom: Previous enrollments were 17-18 students which is easily accommodated many places on campus. There are no special requirements for room size, location or technology.
- Laboratory: There is no required laboratory.
- Library resources: There is no unusual requirement for library assistance.
- Information Technology: No special software or support from the Academic Technology center is required.

Impact on Distribution Requirements and Other Courses: There is an associated motion to adjust distribution requirements.

RBE 3100 fulfills the Social Implications requirement for RBE majors. Assuming this motion to the WPI Faculty passes, a motion will be introduced to the Computer Science program to allow RBE 3100 to also fulfill their Social Implications requirement. This is to give RBE/CS double majors a greater choice as to which Social Implications course they may choose. Without that reciprocity, an RBE/CS double-major could not choose RBE 3100 as it would not satisfy the requirements for Computer Science.

Finally, it is desired that RBE 3100 should eventually be able to also carry SSPS credit. Initial discussions with SSPS have been held but, to date, SSPS faculty have not been available to teach or co-teach this course (a requirement if the course is to carry SSPS credit).

Implementation Date: Implementation date for this action is the 2018-2019 Academic year.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Academic Operations (Prof. Zeng, Chair)
Re: Motion to modify the undergraduate catalog for the addition of RBE 3100

Motion: On behalf of the Robotics Engineering Program, the Committee on Academic Operations recommends and I move that the distribution requirements for the RBE major be modified as described below to reflect the addition of RBE 3100 Social Implications of Robotics as a permanent category I course:

Description of the Proposed Modifications to the Undergraduate Catalog:

(**Note:** The suggested edits only reflect the course number RBE 3100; RBE 310X was the experimental version of the same course taught in A'17 and C'18. The systems in the Registrar's office that do degree audits should be modified to treat RBE 310X in the same way as RBE 3100. Furthermore, credit may be given for RBE 3100 or RBE 310X but not both.)

- The proposed edits to notes 3 & 4 on page 118 of the '17-18 catalog are marked with added text in underline and deleted text in ~~strike through~~:
 3. Must include at least 1/3 unit of Social Implications of Technology (CS 3043, GOV 2302, GOV/ID 2314, or RBE 3100). If GOV 2302, or GOV/ID 2314 are double-counted as meeting the Social Science Requirement and the Social Implications Requirement, then the Distribution Requirements total 10 units, otherwise the Distribution Requirements total 10 1/3 units.
 4. Must include at least 5/3 units in Robotics Engineering, including RBE 2001, RBE 2002, RBE 3001, and RBE 3002, or equivalent. RBE 3100 may not be used to fulfill this requirement.
- For the same reasons, RBE 3100 should not be permitted as an Engineering Science / Design course (ES&D). This is consistent with how CS 3043 is similarly excluded from the permitted ES&D courses.
- The proposed edit to the left-hand column of text at the top of page 124 is highlighted:

BME: All courses designated "BME" (except BME 1001 and BME 3110) and CE, CHE, ECE, ME, and RBE courses at the 2000-level or above (except RBE 3100).
- The proposed edits to the right-hand column of text at the top of page 124 are highlighted:

RBE: All courses designated "RBE" (except RBE 3100).

In addition, engineering majors selecting "Engineering Science/ Design" courses from outside their major may choose appropriate activities from any of the following:

All courses designated ES, ECE, CHE, ME, ~~RBE~~.
All courses designated as RBE except RBE 3100.

Note: This motion presupposes that the related motion to convert RBE 310X (Social Implications of Robotics) from an experimental course to a regular category I course (RBE 3100) has been approved by the WPI faculty.

Rationale:

RBE 3100 is the first non-technical undergraduate RBE course. As such, some minor edits to the undergraduate course catalog are necessary. This is because the existing wording regarding permissible RBE courses to fulfill the RBE major would allow for this course to substitute for one of the intended technical courses. For similar reasons, RBE 3100 should not be allowed to fulfill ES&D requirements for the RBE major or other majors that allow RBE courses.

Implementation Date: If approved by the WPI Faculty, these catalog changes should be made as soon as practical.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add ID527: Fundamentals of Scientific Teaching and Pedagogy

Motion: On behalf of the Office of Graduate Studies, the Committee on Graduate Studies and Research recommends and I move that the course ID527: Fundamentals of Scientific Teaching and Pedagogy, as described below, be added.

Proposed title, description, and course offering:

ID527: Fundamentals of Scientific Teaching and Pedagogy (0 Credits)

The purpose of this zero credit course is to bolster teaching proficiency for pre-doctoral and postdoctoral trainees through in depth and interactive sessions on the science behind student learning, scientific teaching, assessments and rubrics, active learning, project based learning, inclusive learning environments, teaching philosophies, technology in the classroom, and course design. Participants will learn through both lecture and practicum sessions each week, and will work in small groups to develop a short teachable unit incorporating the techniques learned throughout the course, which they will ultimately present at the conclusion of the series. The course is recommended for all graduate students and postdocs who are pursuing careers that will entail teaching in higher education as well as those interested in learning the fundamentals of pedagogy and effective teaching strategies.

Schedule: Summer (E2). Class sessions 2-4 PM on Tuesdays and Thursdays, from July 10 through August 9.

Rationale:

This course is a new course at WPI, and the material it will cover is not offered in any other class at WPI. We wish to introduce it directly into the graduate catalog. The course designation, ID527, is appropriate for this course since graduate students from across a number of disciplines will enroll in this course.

The Office of Graduate Studies is interested in providing pedagogical training to the graduate students and postdocs of WPI for trainee's utilization of best practices in teaching assistantships as well as in future teaching roles in their careers. ID527 *Fundamentals of Scientific Teaching and Pedagogy*, will be open to up to 50 graduate students and postdocs from any discipline each year.

Resource Needs: A classroom for ~50 people will be needed. Rory Flinn, the Director of Graduate Student Professional Development will serve as the course director. Instruction for the course will be provided by Rory Flinn as well as from several guest instructors, including Natalie Farny.

Implementation Date: Implementation date for this action is the 2018 E2 Summer Session.

Date: May 8, 2018

To: WPI Faculty

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

Re: Motion to modify description of Ph.D. degree requirements in Chemistry and Biochemistry

Motion: On behalf of the Department of Chemistry and Biochemistry (CBC), I move to modify description of Ph.D. degree requirements for CBC, as described below

Proposed New Text:

Students who do not satisfy the academic milestones described in the Departmental Handbook (e.g., completing 2nd year seminar, maintaining a departmental GPA over 3.0, finding a mentor, passing the qualifying exam, etc.), as determined by the department, will be dismissed from the PhD program.

Rationale:

The Registrar and Dean of Graduate Studies has requested that graduate program coordinators add what will happen if milestones are not met into the graduate catalog.

Impacts on students: A positive impact on graduate students is expected, as students not equipped to complete a PhD will be able to move on as soon as possible.

Resource Needs: No extra resources are needed.

Implementation Date: Implementation date for this action is the 2018-2019 academic year and we'd like it to be put in the next available catalog.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to modify a graduate certificate in Life Science Management

Motion: On behalf of the Department of Chemistry and Biochemistry (CBC), the Committee on Graduate Studies and Research recommends and I move that the Graduate Certificate in “Life Science Management” be modified as described below.

Description of the Current Certificate Program:

The existing certificate is described as follows in the AY 2017-18 graduate catalog:

“This certificate program is proposed to meet the needs of a variety of corporations and individuals who are taking a first step toward an M.S. in Bioscience Administration. The framework presents minimum requirements for the distribution of bio/ life-science and management courses, but provides flexibility. This certificate is composed of at least 17 credits of graduate coursework.”

Description of the Modified Certificate Program:

This motion is intended to provide structure to the existing graduate certificate in “Bioscience Management” and to update the name to reflect common verbiage used in the industry.

Certificate Program Description:

The updated certificate will continue to meet the needs of a variety of corporations and individuals who are interested in honing advanced technical and business skill sets necessary to fill leadership roles within the life science industry. The Program of Study below presents a set of structured requirements for the certificate. Inherent in the program of study is sufficient course selection flexibility for students to, if desired and admitted, be able to continue their graduate studies and earn an MS degree in Biotechnology, Biochemistry, or Bioscience Administration, depending on student interest and background.

Specifically, there is a defined need for scientists and engineers to have the opportunity to:

1. Expand technical knowledge in specific areas of strategic focus for their companies
2. Acquire a broader understanding of the larger product development process and their role within that process
3. Develop the vocabulary and insight to understand other areas of the business (regulatory affairs, risk management, quality assurance, etc.) with which they may need to collaborate
4. Acquire project management skills required to successfully lead highly technical teams
5. Foster leadership and interpersonal skills necessary to excel in a large, multinational and diverse life science companies

Program of Study:

The Graduate Certificate in “Life Science Management” consists of 4 courses (12 credits) chosen from amongst our life science and management course offerings:

- The individual plan of study must be approved by the CBC faculty administrator of the program
- At least six credits must be chosen from courses thematically-related to the life sciences and may include those with a prefix of BB, BCB, CH, or other approved department by the CBC faculty administrator (for ex. BME, CHE).

Note: Students are already allowed to take a combination of coursework in BB, BCB, CH, BME and CHE as part of the MS in Bioscience Administration, MS in Biotechnology and MS in Biochemistry degree programs. This certificate allows students to take a similar combination of coursework.

- At least three credits of management coursework, typically chosen from amongst the following list of courses:
 - ETR 593 Technology Commercialization
 - MIS 576 Project Management
 - OBC 500 Group and Interpersonal Dynamics in Complex Organizations (or OBC 505)
 - OBC 501 Interpersonal and Leadership Skills (or OBC 506)
 - OBC 503 Organizational Behavior
 - OBC 533 Negotiations
 - OBC 537 Leading Change
 - OIE 541 Operations Risk Management (or OIE 542)
 - OIE 546 Managing Technological Innovation
 - OIE 548 Productivity Management
 - OIE 598 Designing and Managing Six Sigma Processes

Sample Plans of Study:

Coursework can be chosen to provide technical and leadership skills in a variety of specific areas, including: Regulatory Affairs and Risk Management, Manufacturing, Drug Discovery, etc.

Distribution Requirement	POS #1: Regulatory Affairs and Risk Management Focus	POS #2: Manufacturing Focus	POS #3: Drug Discovery Focus
Life Science (min 50% cr)	CH 555 ST. Drug Regulations CH 555 ST. Drug Safety & Regulatory Compliance CH 555 ST. Pharmacology	BB 570 ST. Animal Cell Culture CHE 521 Biochemical Engineering	BB 570 ST. Medical and Applied Immunology CH 555 ST. Membrane Protein-Targeted Drug Design
Management (min 3 cr, max 50% cr)	OIE 542. Risk Management and Decision Making	OIE 548. Productivity Management ETR 593. Technology Commercialization	MIS 576. Project Management OBC 505. Teaming/Organizing for Innovation

Admission Standards:

- 3.0 or higher undergraduate GPA
- BS degree in life sciences or an engineering field with a foundation in life sciences, or another field that demonstrates a knowledge of basic biochemistry principles
- GRE is recommended

Rationale:

The Massachusetts biopharmaceutical industry continues to experience record growth. In our state alone, companies are projected to add over 11,000 new jobs in the next 5 years (17%). Employers report more difficulty in hiring today than just three years ago, and the industry’s rate of growth for employees currently outpaces the rate of graduates in biology and biochemistry related programs in MA. (Source: BioEducation Foundation 2nd Annual Job Trends Forecast, 2017).

Significant numbers of engineering and science professionals working full-time in the life science industry have expressed marked interest in WPI's MS in Biotechnology and MS in Bioscience Administration programs, with the full support of their corporate leadership.

Prospective students and their corporate leadership have also expressed interest in a graduate certificate that blends life science and management coursework. Specifically, the graduate certificate is of interest to several prospective student populations: (1) Those interested in earning a graduate certificate and continuing on to complete a full MS, (2) Those who already have advanced degrees, and are interested in additional technical coursework that would still provide them with a credential, and (3) Those who already have advanced degrees and desire management coursework to help them grow as a technical leader (these students are not interested in an MBA).

In addition, market research of competitive programs and detailed discussions with senior leadership in the life science industry have revealed that the term Bioscience is not as common as Life Science or Biotechnology. So, we propose changing the name from Bioscience Management to Life Science Management.

With our current coursework in the life sciences and management, along with additional new courses already being developed for our MS in Biotechnology program, we can fill these needs.

Resources and Anticipated Instructors: No new resources required.

Implementation Date: Implementation date for this action is immediately for marketing and delivery, and AY 2018-2019 for the catalog update if time allows.

Date: May 8, 2018

To: WPI Faculty

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

Re: Motion to modify the requirements for the MS degree in Systems Engineering

Motion: On behalf of the Systems Engineering Program and the Electrical and Computer Engineering Department, the Committee on Graduate Studies and Research recommends and I move that the requirements for the MS degree in Systems Engineering be modified as described below.

Description of Proposed Changes: (with deleted text ~~struck through~~ and added text in ***bold underlined italics***)

Degree Requirements

*Masters of **Science in** Systems Engineering*

Degree Requirements

The Master of Science in Systems Engineering is a ten course (30 credit-hour) degree with an emphasis on systems engineering and management, supplemented with a technology focus. Table 1 lists the program degree requirements.

Table 1: Credit distribution for the M.S. in Systems Engineering

Component	Credits
Core Requirement	9 <u>12</u>
Leadership/Management Requirement	6 <u>3</u>
Depth Requirement	6
Elective Courses	6
Capstone Experience	3
Total	30

*Core Requirement (~~9~~ **12** credits)*

Each student must complete the core of the Systems Engineering degree program, which consists of the following four 3-credit graduate courses:

- SYS 501 Concepts of Systems Engineering
- SYS 510 Systems Architecture
- SYS 511 System Integration, Verification and Validation
- ***OIE 542 Risk Management and Decision Making***

Leadership/Management Requirement (~~6~~ 3 credits)

System engineers need to be aware of, and trained in, leadership/management methods and practices. Accordingly, each student must also complete *one* of the following 3-credit graduate courses:

- ~~One of MIS 576 Project Management or OIE 541 Operations Risk Management~~
- MIS 582 Information Security Systems and Management

- ~~OIE 541 Operations Risk Management~~
- **OBC 501 Interpersonal and Leadership Skills**
- OIE 554 Global Operations Strategy
- SD 550 System Dynamics Foundation: Managing Complexity
- **BUS 546 Managing Technological Innovation**

Depth Requirement (6 credits, excluding capstone course requirement)

To ensure sufficient breadth of knowledge in Systems Engineering, each student must complete a minimum of ~~15~~ **18** Systems Engineering graduate credits. In addition to the courses noted in the Core Requirement section, each student must complete two additional 3-credit Systems Engineering graduate courses from those listed in Table 2.

Table 2: Current Systems Engineering Graduate Courses

Available to Fulfill Depth Requirement

SYS 502	Business Practices
SYS 512	Requirements Engineering
SYS 520	System Optimization
SYS 521	Model-Based Systems Engineering
SYS 540	Introduction to Systems Thinking
SYS 579C	Complex Decision Making
SYS 579D	Engineering Dependable and Secure Systems
	<u>SYS 579R System Reliability Engineering</u>
SYS 579S	System of Systems Engineering

Elective Courses (6 credits)

6 credit hours of elective graduate courses can be selected to meet the specific needs of students and organizations. All elective courses must be approved by the student’s faculty advisor and can be selected from courses offered by the following departments and programs: Computer Science (CS), Systems Dynamics (SD), any WPI engineering department or program (such as ECE, BME, ME, ChE, EnvE and RBE), the School of Business, and Mathematics (MA).

Capstone Experience (3 credits minimum)

- The capstone experience requirement may be satisfied by an instructor-led systems engineering project (SYS 585 Systems Engineering Capstone Experience), an individual directed research project (SYS 598 Directed Research), or a Master’s Thesis (SYS 599 Thesis). Courses taken to satisfy the capstone experience requirement must not exceed a total of 9 credits. Students may not transfer credits to satisfy the required capstone experience. **The capstone cannot be taken until the student has successfully completed at least 24 credits, including all Core Requirements.**

Rationale:

Moving an elective course in Risk Management to be a core (required) course and requiring that the student has taken at least 24 credit-hours (including Risk Management) prior to taking the Capstone.

Impact on Degree Requirements: virtually none. Just moving an optional course to required.

Resources and Anticipated Instructors: No additional resources will be necessary.

Implementation Date: Implementation date for this action is the 2018-2019 academic year.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add a Ph.D. degree program in Statistics

Motion: On behalf of the Department of Mathematical Sciences, the Committee on Graduate Studies and Research recommends and I move that a Ph.D. degree program in Statistics be offered by the Department of Mathematical Sciences, as provided below.

Description of the Proposed Ph.D. Program in Statistics:

1. Goals and objectives.

The overall objective is to create a highly competitive program that produces future scholars and leaders in Statistics through rigorous and comprehensive training and research experiences. Accordingly, there are several goals to achieve:

1. The program will provide rigorous and comprehensive training in mathematics, statistics and related areas, as well as in critical thinking and problem solving for statistical challenges in data-related researches and applications. The first goal is to prepare future leading statisticians in academia, industry, and government.
2. In coherent with the existing programs in mathematical sciences, the program aim to further complete and strengthen educational and research infrastructure in STEM at WPI.
3. With the existing M.S. degree in Applied Statistics, the introduction of a Ph.D. program in Statistics will attract more and stronger students and faculty in Statistics and related areas to join WPI. The Ph.D. program will strengthen the M.S. program by providing more project opportunities and an in-house opportunity for our M.S. graduates to continue their education. This goal is to establish a more competitive and better-known program in Statistics nationally and internationally.
4. Continuing the traditional connections with industry and government, the program will strengthen the partnership with external institutions to leverage high quality collaboration. The goal is to enhance student training, research, student employment, and opportunities for external funding.
5. The program will reinforce the research and education in interdisciplinary programs at WPI, such as Data Science, Bioinformatics and Computational Biology, Neuroscience, etc. The goal is to better support current faculty research and foster research and educational grant applications in interdisciplinary and data-related fields.

2. Admissions Requirements

The admissions requirements for the PhD program in Statistics are the same as the PhD program in Mathematical Sciences with the following modifications:

Strong background of undergraduate analysis, linear algebra and probability is assumed for applicants to the PhD program in Statistics. The GRE Mathematics Subject Test is recommended but not required.

3. Degree/Certificate/Program Requirements

1 Requirements for the Ph.D. Degree

1.1 Credit Requirements

For the Ph.D. degree, a student must successfully complete a minimum of 90 semester hours of graduate work beyond the bachelor's degree (or a minimum of 60 semester hours beyond the master's degree), including at least 30 semester hours of dissertation research, as follows:

General Courses (credited for students with master's degrees)	30 credits
Research Preparation Phase	24-30 credits
Research-Related Courses or Independent Studies	9-18 credits
Ph.D. Project (see x5)	1-9 credits
Extra-Departmental Studies	6 credits
Dissertation Research	at least 30 credits

1.2 Plan of Study

No later than two weeks before the end of the first semester of study for full-time students (two weeks before the end of the second semester of study for part-time students), a student is required to submit a formal plan of study leading to the Ph.D. degree to the Graduate Committee for review. The plan of study may subsequently be modified with review by the Graduate Committee. International students may be required to provide their plans of study on a special form required by the U.S. government. Plan-of-study forms for both domestic and international students can be obtained from the departmental graduate secretary.

1.3 General Comprehensive Examination - Candidacy for the Ph.D. Degree

A student must pass the general comprehensive examination in order to become a Ph.D. candidate. See #6 for a description of the examination. A student who enters the Ph.D. program having passed an equivalent examination at another institution may petition the Graduate Committee to waive the general comprehensive examination.

1.4 Extra-Departmental Studies Requirement

A student must complete at least six semester hours of courses, 500 level or higher, in WPI departments other than the Mathematical Sciences Department.

1.5 Statistics Ph.D. Project

A project may be completed for the Ph.D. degree. See #5 for a description of the project.

1.6 Preliminary Examination

Successful completion of the preliminary examination is required before a student can register for dissertation credits. See #7 for a description of the examination and the examination committee. A student who enters the Ph.D. program having passed an equivalent examination at another institution may petition the Graduate Committee to waive the preliminary examination.

1.7 Dissertation Proposal

At least six months prior to completion of the dissertation, a student must submit a written dissertation proposal to his or her dissertation committee and present a public seminar on the research plan described in the proposal. The proposal must be approved by the dissertation committee. See #8 for details.

1.8 Dissertation

The completion and oral defense of a dissertation are required. See #8 for details.

1.9 Waivers

In exceptional circumstances the Graduate Program Committee may waive or modify particular degree requirements and plans of study in response to a student petition.

2 Academic Advisor

Upon entering the Ph.D. program, each student will be assigned an academic advisor by the Graduate Committee. It is the responsibility of the academic advisor to guide the student in initial course selection, to help the student fill out his or her plan of study, and to advise the student generally on matters pertaining to his or her academic program. A student may change academic advisors at any time with proper notice to the Graduate Committee.

3 Core Courses

The Department of Mathematical Sciences offers a number of core courses and independent studies at the 500 level. To provide structure, these are grouped into two core areas. The student entering with a bachelor's degree is required to select at least six courses from the list below.

1. Statistical Courses
MA540, MA541, MA542, MA543, MA546, MA547, MA548, MA549, MA550, MA552, MA554, MA556, MA584
2. Mathematical Courses
MA502, MA503, MA510, MA514, MA528

4 Other Courses and Independent Studies

Other courses offered by the department are listed in the WPI Graduate Catalog. A list of independent study courses offered by faculty can be obtained from the departmental graduate secretary. Independent studies in addition to those listed can be arranged with faculty on an individual basis. More advanced courses for the Preliminary Examination can be taken from the following list with a faculty from the Statistics faculty. Some examples are

Advanced Mathematical Statistics, Advanced Multivariate Statistics, Advanced Survey Sampling, Advanced Linear Model, Generalized Linear Model, Advanced Bayesian Statistics, Advanced Time Series, Advanced Measure-Theoretical Probability, Advanced Statistical Genetics.

5 The Statistical Ph.D. Project

A student may complete a Ph.D. project which can carry one to nine hours of Ph.D. credits. The project is expected to be equivalent up to nine semester hours work. The purposes of the project are to broaden perspectives on the relevance and applications of statistics and to improve skills in communicating statistics and formulating and solving statistical problems. Students are encouraged to work with industrial sponsors on problems involving applications of the statistical sciences. The project must be started after the student has passed the general comprehensive examination. The policy governing the project is as follows:

- **Nature of the Project.** The project must involve a problem originating with a sponsor external to

the department.

- **Faculty Project Advisor.** The project must be conducted under the supervision of a project advisor who is a tenured or tenure-track member of the Mathematical Sciences faculty.
- **Project Proposal.** Prior to the start of the project, a proposal outlining the nature, scope, and expected outcomes of the project must be approved by the project advisor, the external sponsor, and the Graduate Committee. The project proposal should identify the external sponsor, indicate where the project work is to take place, delineate a timeline for the project, and specify the number of credit hours to be obtained for the project.
- **Project Evaluation.** The project advisor is responsible for supervising and grading the project.
- **Project Report and Oral Presentation.** The project must culminate in a project report approved by the faculty project advisor and a public oral presentation at WPI.

6 The General Comprehensive Examination

6.1 Purpose and Structure

The purpose of the general comprehensive examination (GCE) is to determine whether a student possesses the fundamental knowledge and skills necessary for study and research at the Ph.D. level. It consists of two three-hour exams. The two exams are on probability, based on MA 540, and mathematical statistics, based on MA 541.

Students are responsible for all topics listed in the WPI Graduate Catalog descriptions of the above courses as well as for related undergraduate prerequisite material.

6.2 Administration

The Graduate Program Committee is responsible for scheduling the GCE exams. It assigns the writing and grading of each exam to a group of faculty members. The Program Committee will then inform students about the results of these exams.

- **Schedule.** The GCE is offered three times a year, in January, May, and August. A student must register a request to take the GCE with the departmental graduate secretary at least one month before the proposed examination date.
- **Outcomes to pass the GCE.** Students must pass both exams by the end of January of their second year, if they entered the program in the fall, or by the end of May of their second year, if they entered in the spring. A student who passes the GCE becomes a Ph.D. candidate. A student who fails to pass both exams by this deadline will not be allowed to continue in the Ph.D. program.

7 The Preliminary Examination

7.1 Purpose and Structure

The purpose of the preliminary examination is to determine whether a student's understanding of advanced areas of statistics is adequate to conduct independent research and successfully complete a dissertation. The examination is given in two parts, a written part followed by an oral part, and covers subject matter in three areas determined by the student's preliminary examination committee. The preliminary examination is intended to test a student's overall breadth in advanced statistical topics as well as knowledge of his or her area of specialization, and the three areas should be chosen accordingly.

7.2 Administration

7.2.1 Scheduling and Outcomes

A student must make the first attempt by the end of his or her third year (sixth year if part-time) in the Ph.D. program. The student must register a request to take the examination with the departmental graduate secretary at least two months in advance of the proposed date for the written part. The oral part must be conducted no more than one week after the written part.

The preliminary examination committee is responsible for conducting the examination and informing the student of the outcome; see #7.2.2 for more details. A student who passes the examination is considered a dissertator and is allowed to register for dissertation credits. A student who fails will be allowed to take the examination a second time within one year of the first attempt. A student who fails a second time will not be allowed to continue in the Ph.D. program.

7.2.2 Preliminary Examination Committee

A preliminary examination committee will be formed for each student taking the examination. This committee and its chair are appointed by the Graduate Committee upon notification by the departmental graduate secretary, with due consideration given to suggestions by the student and his or her dissertation advisor. The committee chair must be a member of the Mathematical Sciences faculty other than the student's dissertation advisor. The other appointees must be members of the Mathematical Sciences faculty or faculty from other departments at WPI or other colleges or universities as may be desirable. The committee must have at least three members, including the chair.

The preliminary examination committee is responsible for making and grading the written part of the examination, conducting the oral part, and informing the student of the results. In case of failing, the committee decides which part or parts the student needs to re-take to pass the examination. The committee may exercise its discretion in handling any extenuating circumstances or problems.

8 The Dissertation

The Ph.D. dissertation is a significant work of original research conducted under the supervision of a dissertation advisor. The dissertation advisor chairs the dissertation committee, which determines acceptability of the dissertation proposal and, upon completion, the dissertation.

8.1 Dissertation Advisor

A student's dissertation advisor is normally a tenured or tenure-track member of the Mathematical Sciences faculty. For rules governing exceptions, see the WPI Graduate Catalog or online at <http://www.wpi.edu/Pubs/Catalogs/Grad/Current/index.html>.

8.2 Dissertation Committee

A student's dissertation advisor chairs the dissertation committee. Under the direction of the advisor, the student selects the rest of the dissertation committee. The committee must have at least five members. The committee should be made up of members of the Mathematical Sciences faculty and at least one member external to the department who is a recognized expert in the area of the student's dissertation. The committee must be approved by the Graduate Committee.

This committee will participate in the dissertation proposal and the Oral examination. The committee must be selected at least two weeks prior to the public seminar on the dissertation proposal (see # 8.3).

8.3 Dissertation Proposal

At least six months prior to completion of the dissertation, a student must present a formal seminar to

the public describing his or her proposed dissertation research plan. A formal written dissertation proposal summarizing the proposed research plan must be submitted to the dissertation committee at least two weeks before this presentation. The proposal must be approved by the dissertation committee.

8.4 Final Examination - Oral Defense

The final examination is a public oral dissertation defense, the purpose of which is to present the dissertation to the dissertation committee and to the general community.

A student must register a request to schedule the oral defense with the departmental graduate secretary at least one month before the proposed date and must provide copies of his or her dissertation to each member of the dissertation committee at least one month prior to the oral defense. A student's dissertation committee, with the dissertation advisor acting as chairperson, determines by majority vote whether a dissertation is acceptable.

9 Examples of Ph.D. Tracks in Statistics

Below are two examples of paths to the Ph.D. degree that might be taken by a full-time student supported by a teaching assistantship. Both examples assume the student takes 15 credits of research-related courses or independent studies within the department, six credits of extra-departmental courses, and nine credits of Ph.D. project work.

Example 1. The student arrives with a bachelor's degree: graduation in 5 years.

Year 1	General Courses (including Core Courses) General Comprehensive Examination (may be taken between first and second years)	18 credits
Year 2	General Courses (including Core Courses) Research-Related Courses or Independent Studies/Ph.D. Project/ Extra-Departmental Courses	12 credits 6 credits
Year 3	Research-Related Courses or Independent Studies/ Ph.D. Project/ Extra-Departmental Courses	18 credits
Year 4	Research-Related Courses or Independent Studies/ Ph.D. Project/ Extra-Departmental Courses Presentation of Dissertation Proposal Dissertation Research	6 credits 12 credits
Year 5	Dissertation Research Dissertation Defense	18 credits

Example 2. The student arrives with a master's degree in applied mathematics or statistics: graduation in 3 years.

Year 1	General Comprehensive Examination (taken upon entering the Ph.D. program) Research-Related Courses or Independent Studies/Ph.D. Project/ Extra-Departmental Courses	20 credits
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Year 2	Research-Related Courses or Independent Studies/Ph.D. Project/ Extra-Departmental Courses	10 credits
	Preliminary Examination Presentation of Dissertation Proposal Dissertation Research	10 credits
Year 3	Dissertation Research Dissertation Defense	20 credits

Rationale:

Statistics is a body of knowledge that pertains to the collection, analysis, interpretation or explanation, and presentation of numerical facts called data. Statisticians are professionals trained in mathematical and statistical techniques that allow them to apply their knowledge of statistical methods to a variety of subject areas in science and engineering, including social science. Many applications cannot occur without use of statistical techniques.

We must remark that the External Evaluation Board of the Mathematical Sciences Department recommended, September 13, 2016, we start a PhD Program in Statistics. In their Report, the Advisory Board wrote, "To increase the visibility of the Ph.D. students focusing on statistics, the department may want to create a Ph.D. degree in statistics."

The Projection of Needs: The [US Department of Labor](#) reports that employment of statisticians is projected to grow 34 percent from 2016 to 2026, much faster than the average for all occupations. Growth is expected to result from more widespread use of statistical analysis to make informed business, healthcare, and policy decisions. In addition, the large increase in available data from economics, biology, genetics and surveys will open up new areas for analysis. Businesses will increasingly need statisticians to organize, analyze, and sort through data for commercial applications. Better statistical analyses will help companies improve their business processes, design and develop new products, and advertise products to potential customers.

Statisticians will be increasingly needed in the pharmaceutical industry. An aging U.S. population will encourage pharmaceutical companies to develop new treatments and medical technologies. Statisticians will be needed to conduct research and clinical trials necessary for companies to obtain approval for their products from the Food and Drug Administration. In the area of Big Data, statistics is playing a much bigger role than before.

Government agencies will also employ more statisticians to improve the quality of the data available for official statistics, an enormously important activity today, that are used to make policies. This occupation will also see growth in research and development in the physical, engineering and life sciences, where statisticians' skills in designing tests and assessing results are highly useful.

Job and Employment Prospects: Job prospects for statisticians are projected to be very good. An increasing number of jobs over the next decade will require high levels of statistical knowledge. Job opportunities are expected to be favorable for those with very strong quantitative and data analysis skills. Graduates of our PhD degree program in Statistics will have strong theoretical background and foundational skills and knowledge in Statistics to allow critical thinking and this is necessary to have the best job prospects in the discipline. In fact, in a last year's [CNBC article](#), Statisticians were ranked No. 1 of the best jobs in 2017. The article cites the survey data from Career Cast who ranked statisticians at

the 1st place with midlevel salary of \$80,110. Because statistical analyses are of growing importance to a wide spectrum of industries, professional statisticians are in high demand.

Preparation: The proposed PhD Program in Statistics is designed to be an essential step for a student aspiring to become a Lead Statistician. The program will provide a broad quantitative background in mathematics, statistics and related areas necessary for the practitioners of statistics nowadays. More importantly, this program will train students to think critically about new problems occurring in numerous statistical applications.

Track Record: We have a good track record in the PhD in Statistics because as part of the Mathematical Sciences Department, we have graduated four PhD students since 2010, and they have very good jobs. We expect to graduate another four PhD students within the next year.

Benefits: Our Mathematical Sciences Department and WPI will benefit from a PhD Program in Statistics in several ways.

- 1) We will be able to attract more and higher quality students to WPI. This new PhD Program in Statistics will increase our visibility and reputation. This, in turn, can help us to attract more MS students in our MS Program in Statistics as well. We note that the GRE math subject is not required for admission to our PhD Program in Statistics, so it will be easier for students with statistical background to apply to our statistics program since most statistics programs in the US do not require math GRE test.
- 2) It will help our students to find good jobs more easily. Other universities and companies will regard our statistics students much more highly in terms of statistical training.
- 3) We will also be able to attract better faculty to our department. This, in turn, will help us to gain more visibility and attract better students both nationally and internationally.
- 4) We will have a much stronger national visibility, and this will help us to attract American students so that we can apply to the National Science Foundation and other funding agencies for fellowship support and large training grants. This will also improve student diversity in the department.
- 5) A PhD Program in Statistics would help to strengthen WPI's data related programs, such as those in Data Science, Bioinformatics and Computational Biology, Engineering, and Business.
- 6) With a PhD Program in Statistics, the department will be more competitive than before and in line with other good universities in our neighborhood such as University of Massachusetts, Harvard University and Brown University.

Comparison to Existing Programs at WPI

	Ph.D. in Mathematical Sciences (Existing)	Ph.D. in Statistics (New)
Admission Requirements	Official transcripts for all post-secondary colleges or universities are required. Application fee is required. Three recommendation letters are required. Subject test in math GRE is required for PhD applicants and prospective TAs; strongly recommended for all others. Statement of Purpose is not required.	All the requirements are same except the math GRE requirement. Strong background of undergraduate analysis, linear algebra and probability is assumed for applicants to the PhD program in Statistics. The GRE Mathematics Subject Test is recommended but not required.
Credit Requirement	The course of study leading to the doctor of philosophy in mathematical sciences requires the completion of at least 90 credit hours beyond the bachelor's degree or at least 60 credit hours beyond the master's degree, as follows: General Courses (credited for students with master's degrees) 30 credits Research Preparation Phase 24-30 credits Research-Related Courses or Independent Studies 9-18 credits Ph.D. Project 1-9 credits Extra-Departmental Studies 6 credits Dissertation Research at least 30 credits	The credit requirement for Ph.D. in statistics is same as to the course requirements of mathematical Sciences. The courses should be chosen from the list in section 3.
General Comprehensive Examination	A student must pass the general comprehensive examination (GCE) in order to become a Ph.D. candidate. The purpose of the GCE is to determine whether a student possesses the fundamental knowledge and skills necessary for study and research at the Ph.D. level. It is a written examination offered three times a year, once each in January, May, and August. A student must pass by January of their second year if they enter in the fall, and May of their second year if they enter in the spring.	General Comprehensive Examination for Ph.D. in Statistics is same as that for Ph.D. in mathematical sciences and two exams are on probability, based on MA 540, and mathematical statistics, based on MA 541.
Ph.D. Project	See section 5 (This requirement is same for both programs.	This requirement is same as that for Ph.D. in mathematical Sciences. This project should focus on a Statistical Application.
Preliminary Examination	Successful completion of the preliminary examination is required before a student can register for dissertation research credits. The purpose of the preliminary examination is to determine whether a student's understanding of advanced areas of mathematics is adequate to conduct independent research and successfully complete a dissertation. The preliminary examination consists of both written and oral parts. A full-time student must make the first attempt by the end of his or her third year (sixth year for part-time students) in the Ph.D. program.	Exam requirements are same as that for Ph.D. in mathematical Sciences. This exam focus on three different areas in Statistics based on three independent studies listed in section 4.
Ph.D. Dissertation	The Ph.D. dissertation is a significant work of original research conducted under the supervision of a dissertation advisor, who is normally a member of the departmental faculty. The dissertation advisor chairs the student's dissertation committee, which consists of at least five members, including	The Ph.D. dissertation is a significant work of original research in Statistics conducted under the supervision of a dissertation advisor, who is normally a member of the departmental faculty. The committee and the other requirement same as those for Ph.D. in mathematical Sciences.

	<p>one recognized expert external to the department, and which must be approved by the departmental Graduate Committee. At least six months prior to completion of the dissertation, a student must submit a written dissertation proposal and present a public seminar on the research plan described in the proposal. The proposal must be approved by the dissertation committee. Upon completion of the dissertation and other program requirements, the student presents the dissertation to the dissertation committee and to the general community in a public oral defense. The dissertation committee determines whether the dissertation is acceptable.</p>	
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Impact on other Existing Programs at WPI: The proposed new PhD program in Statistics would help to strengthen WPI's data related programs, such as those in Data Science, Bioinformatics and Computational Biology, Engineering, and Business. With an already established training process for PhD in Mathematical Sciences, the introduction of a new Ph.D. degree in Statistics will give our department, and WPI, a unique edge. It will increase the department's reputation and ensure its growth. This will also help the Department of Mathematical Sciences to recruit more high quality students. Recruiting excellent statistics faculty members to WPI will become less challenging if we build a strong Ph.D. program in Statistics.

Comparable Programs at other Universities

1. Ph.D. in Statistics in the Department of Mathematical Sciences at University of Texas at Dallas
2. Ph.D. in Statistics in the Department of Mathematics at Washington University in St. Louis.
3. Ph.D. in Statistics in the Department of Mathematics and Statistics at University of Massachusetts Amherst.
4. Ph.D. in Statistics in the Department of Mathematics and Statistics at Boston University.

Resource Needs: No change.

Implementation Date: Implementation date for this action is the 2018-2019 academic year.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove ACC 503 and add ACC 500 and ACC 502

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that ACC 503 be removed and ACC 500 and ACC 502, both described below, be added.

Course to be dropped:

ACC 503. Financial Intelligence for Strategic Decision-Making

This course builds on Financial Information and Management. It takes a managerial approach and combines publicly available and internal financial reports to help managers measure and manage firm performance. Accounting, economics, and psychology theories provide the framework for planning, evaluating performance, understanding moral hazard and how choices of what to measure affect behaviors and outcomes. The course will emphasize cost behaviors and the use of assumptions in the calculations of cost of goods sold and other significant revenue and expense accounts. Students will apply statistical methods to the analysis of cost behavior and the balanced scorecard.

Proposed Course Descriptions to be added:

ACC 500 – Accounting and Finance Fundamentals (1 credit)

This course serves as a foundational introduction to financial accounting and financial analysis. It is designed to help students master the technical skills needed in a graduate management curriculum and in business to analyze financial statements and disclosures for use in financial analysis. Students will learn how to read and interpret the three most common financial statements: the income statement, balance sheet, and statement of cash flows. Students will also learn how to apply ratios that capture key elements of a firm's performance. Students will also develop an understanding of certain essential concepts in mathematical financial analysis, including net present value (NPV), internal rate of return (IRR), payback, future value, and bond and options pricing. (Students cannot get credit for ACC 500 and ACC 503)

ACC 502 – Financial Intelligence and Strategic Decision-Making (2 credits)

This course builds on students' knowledge of financial statements and takes a managerial accounting approach to present how firms plan and implement strategy. Accounting, economics, and psychology theories provide the framework for cost analysis, strategic decision-making, and planning under uncertainty. Management control systems will guide students to work with uncertainty. The course will emphasize cost behaviors, setting and meeting cost targets, assessing strategic initiatives, forecasting and budgeting, and the use of assumptions in the calculations of significant revenue and expense projections. Students will apply theories and best practices through simulations and case analyses. (Prerequisite: ACC 500) (Students cannot get credit for ACC 502 and ACC 503)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. ACC 503 is currently only taken by MBA students. ACC 500 and ACC 502 will replace ACC 503 for students who are currently enrolled in the MBA program.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove BUS 501 and add BUS 590

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that BUS 501 be removed and BUS 590, as described below, be added.

Course to be dropped

BUS 501. Integrating Business Concepts to Lead Innovation

This course will help students practice integration of the concepts learned in the core courses. There will be case studies, simulations and other activities emphasizing different aspects of business problems. These activities will challenge teams to provide innovative solutions. Important strategy theories and concepts will be discussed to help students integrate varying knowledge domains. (Prerequisites: FIN 500, BUS 500, FIN 501, MIS 500, MKT 500, OBC 500 and OIE 500 or equivalent content, or instructor consent)

Proposed Course Description to be added:

BUS 590 –Strategy in Technology-based Organizations

This course provides a summary overview of strategic management, with a focus on integrating the core curriculum to develop competitive advantage at the corporate and business unit level. Topics include the role of the CEO in the organization, industry analysis, the use of core competence to drive business development and exit decisions, causes of organizational inertia that cause the loss of competitive advantage, the impact of technology on strategy, the links between strategy and organizational design, and the social responsibility of the firm. The course also serves as the initial phase of BUS 599 (Capstone) and is designed to be taken immediately preceding that class. (Prerequisites: ACC 500, ACC 502, ACC 505, BUS 500, FIN 503, FIN 504, MIS 500, MKT 500, OBC 505, OBC 506 and OIE 501 or equivalent content, or instructor consent) (Students cannot get credit for BUS 590 and BUS 501)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. BUS 501 is currently only taken by MBA students. BUS 590 will replace BUS 501 for students who are currently enrolled in the MBA program.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove BUS 517 and add BUS 599

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that BUS 517 be removed and BUS 599, as described below, be added.

Course to be dropped:

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 to be added:

BUS 599 – Capstone Project

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 500, ACC 502, ACC 505, BUS 500, BUS 590, FIN 503, FIN 504, MIS 500, MKT 500, OBC 505, OBC 506 and OIE 501 or equivalent content, or instructor consent) (Students cannot get credit for BUS 599 and BUS 517)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. BUS 517 is currently only taken by MBA students. BUS 599 will replace BUS 517 for students who are currently enrolled in the MBA program.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add BUS 595 The Edge of Technology in STEM Industries

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that BUS 595 The Edge of Technology in STEM Industries, as described below, be added.

Proposed Course Description to be added:

BUS 595 – The Edge of Technology in STEM Industries

The course explores the state of technology and important technology trends in key industries. Students will conduct in-depth investigation of key issues and decisions faced by technology-intensive organizations in various sectors including health care, medical devices, biotech, IT hardware and software, FinTech, manufacturing and defense. Deans of Arts & Sciences, Business and Engineering as well as high profile guest speakers from industry will be involved in teaching the course.

Rationale:

This course addition is part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: This course will require assigning a faculty member.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove FIN 501 and add FIN 504 and ACC 505

Motion: - - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that FIN 501 be removed and FIN 504 and ACC 505, both described below, be added.

Course to be dropped:

FIN 501. Economics for Managers

This course covers fundamental microeconomic and macroeconomic theories to help managers formulate effective business decisions. Current events are used in addition to economic theories to explain the concepts of the market system, gains from trade, supply and demand, consumer behavior, firm behavior, market structure, long-run economic growth, economic cycle, financial system, monetary policy, and fiscal policy. Students will complete a "Market Watch" project to learn to explain and predict changes in macroeconomic indicators, including gross domestic product, interest rates, global stock indices, commodity prices and foreign exchange rates.

Proposed Course Description to be added:

FIN 504 – Financial statement analysis and valuation (2 credits)

This course develops expertise in financial decision-making by focusing on financial accounting information. The course presents a comprehensive framework for financial statement analysis and valuation. Through hands-on, practical application of various tools for financial analysis (e.g., ratio analysis & financial modeling using Excel and other resources) students will develop the expertise needed to use a firm's financial statements to draw an understanding of its performance and to provide a basis for making reasonable valuation estimates. Students will learn to apply analytical techniques to develop forecasted financial statements and use the information to value a firm's equity. The course will utilize team assignments, cases, simulations, and other applied exercises. (Prerequisites: ACC 500, ACC 502, & FIN 503)

ACC 505 – Performance Measurement and Management (1 credit)

This course strengthens students' understanding of strategic finance/Financial Information & Management in order to monitor and revise strategy. It takes a managerial accounting approach to enable managers to measure and manage firm financial and non-financial performance. Accounting, economics, and psychology theories provide the framework for understanding moral hazard, motivation, and aligning the interest of employees with the interest of the firm. The course will emphasize designing and applying management control systems tools such as the balanced scorecard and examine how choices of what to measure affect behaviors and outcomes. Students will apply theories and best practices through simulations and case analyses. (Prerequisites : ACC 500, ACC 502, FIN 503 & FIN 504)

Rationale:

This course addition is part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. FIN 501 is currently only taken by MBA students. FIN 504 and ACC 505 will replace FIN 501 for students who are currently enrolled in the MBA program.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add FIN 503 Financial Decision-Making for Value Creation

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that FIN 503 Financial Decision-Making for Value Creation, as described below, be added.

Proposed Course Description to be added:

FIN 503 – Financial Decision-Making for Value Creation

This course develops and enhances the student's ability to implement and clearly communicate a firm's financial decisions related to value creation. The course covers capital structure optimization, cost of capital; capital allocation and investment strategies, enterprise risk, project and firm valuation, and international financial management. The course adopts a decision-maker's perspective by emphasizing the relationships among a firm's strategic objectives, financial accounting and financial statement data, economic events, responses by market participants and other impacted constituencies, and corporate finance theory. The course also builds on these practical finance skills by incorporating team-based assignments, real-world simulations, and a variety of financial modeling tools. (Students cannot get credit for FIN 503 and FIN 500)

Rationale:

This course addition is part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources as needed. MBA students currently take FIN 500; FIN 503 will replace FIN 500 for MBA students only. FIN 500 will still be offered for non MBA students.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove OBC 500 and add OBC 505

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that OBC 500 be removed and OBC 505, as described below, be added.

Course to be dropped:

OBC 500. Group and Interpersonal Dynamics in Complex Organizations

This practice-based course simulates a complex organization with critical interdependencies at interpersonal, group, and intergroup levels. Students will be asked to make sense of their experiences through class discussions, individual reflection and readings in organization studies. This course is intended to be a student's first course in organizational studies.

Proposed Course Description to be added:

OBC 505 – Teaming and Organizing for Innovation

How do we navigate complex human systems in organizations? How do we foster innovation within organizations? In this course, we explore the paradoxes, opportunities, and hidden systemic challenges that arise on teams and projects, and in working across networks and within innovative organizations. Students will learn to more deftly manage the inherent challenges and opportunities of cross-cultural and multi-disciplinary teams; work through or avoid dysfunctional team and organizational conflicts; wrestle with ambiguity and uncertainty; negotiate change by learning to work with networks of power and influence; and analyze the individual, group, organizational and contextual dynamics that enable and constrain productive and innovative work in organizations. (Students cannot get credit for OBC 505 and OBC 500)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. OBC 505 will replace OBC 500 for all graduate students.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove OBC 501 and add OBC 506

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that OBC 501 be removed and OBC 506, as described below, be added.

Course to be dropped:

OBC 501. Interpersonal and Leadership Skills

This course considers effective interpersonal and leadership behaviors in technological organizations. Course material focuses on understanding, changing and improving our behaviors and those of others by examining our own practices and analyzing examples of leadership behaviors. The course also considers interpersonal and leadership behaviors in relation to teams, cultural diversity, and ethics in organizations. Assignments may include personal experiments, case analyses, individual and group projects and/or presentations. (Prerequisite: OBC 500 or equivalent content, or instructor consent)

Proposed Course Description to be added:

OBC 506 – The Heart of Leadership: Power, Reflection, and Interpersonal Skills

All of us hope to have positive, collaborative, and effective interactions with others — in our professional and personal lives. Yet often our interactions do not go as planned and it gets ugly: people behave irrationally and get emotional, communication stops, conflicts fester, and opportunities are left unrealized and obscured. This course develops skills for understanding and acting more powerfully, ethically, and mindfully in our interactions. These include analytic techniques for understanding emotional, biographical, and social-psychological reasons for our own and others behavior, and skills for paying attention to and managing the complex dynamics unfolding in interpersonal interactions. Students will learn to identify and reflect upon their own contributions to problematic interactions; design and execute better ways of interacting with others; and develop their own interpersonal strengths and collaborative capacities. (Prerequisite: OBC 505 or instructor consent) (Students cannot get credit for OBC 506 and OBC 501)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. OBC 506 will replace OBC 501 for all graduate students.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to remove OIE 500 and add OIE 501

Motion: - On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that OIE 500 be removed and OIE 501, as described below, be added.

Course to be dropped:

OIE 500. Analyzing and Designing Operations to Create Value

The operations of an organization focus on the transformation processes used to produce goods or provide services. In this course, a variety of statistical and analytical techniques are used to develop deep understanding of process behavior, and to use this analysis to inform process and operational designs. Topics such as measures of dispersion and confidence descriptions, correlation and regression analysis, and time series mathematics will be explored. Operations design is driven by strategic values, and can be critical to developing and sustaining competitive value. Philosophies such as lean thinking, as well as technology-based techniques such as optimization and simulation, are explored as a means of developing robust and effective operations.

Proposed Course Description to be added:

OIE 501 – Designing Operations for Competitive Advantage

The operations function in an organization is focused on the transformation processes used to produce goods or provide services. Operations design is driven by strategic values, and innovative improvements can support sustained competitive advantage. In this course, a variety of analytical and statistical techniques are introduced to develop a deep understanding of process behavior, and to use this analysis to inform process and operational designs. Topics such as process analysis and value stream mapping, postponement and global and local supply chain strategies, queuing models, and managing system constraints are covered using case studies and hands-on activities such as on-line simulations. Non-traditional operations systems are also explored. The skills required to model an operational system, to reduce variation and mitigate bottlenecks, to effectively present resource needs, and to adjust capacity and inventory service levels are practiced during the course. (Students cannot get credit for OIE 501 and OIE 500)

Rationale:

These course changes are part of a larger revision of the MBA curriculum described in a related motion.

Resources and implementation: No additional resources are needed. OIE 501 will replace OIE 500 501 for all graduate students.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to revise the curriculum of the MBA degree program

Motion: On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that the curriculum of the Master of Business Administration (MBA) degree program be revised, as described below.

Description of the Proposed MBA Curriculum Changes: (to replace the curriculum described on page 49 of the current graduate catalog)

The revised MBA curriculum does not propose modifications to the length of the program, the delivery mode of the degree (namely, 48 credits and blended format), or admissions requirements.

See table on the following page for a comparison of the ***proposed curriculum*** and the ***current curriculum***:

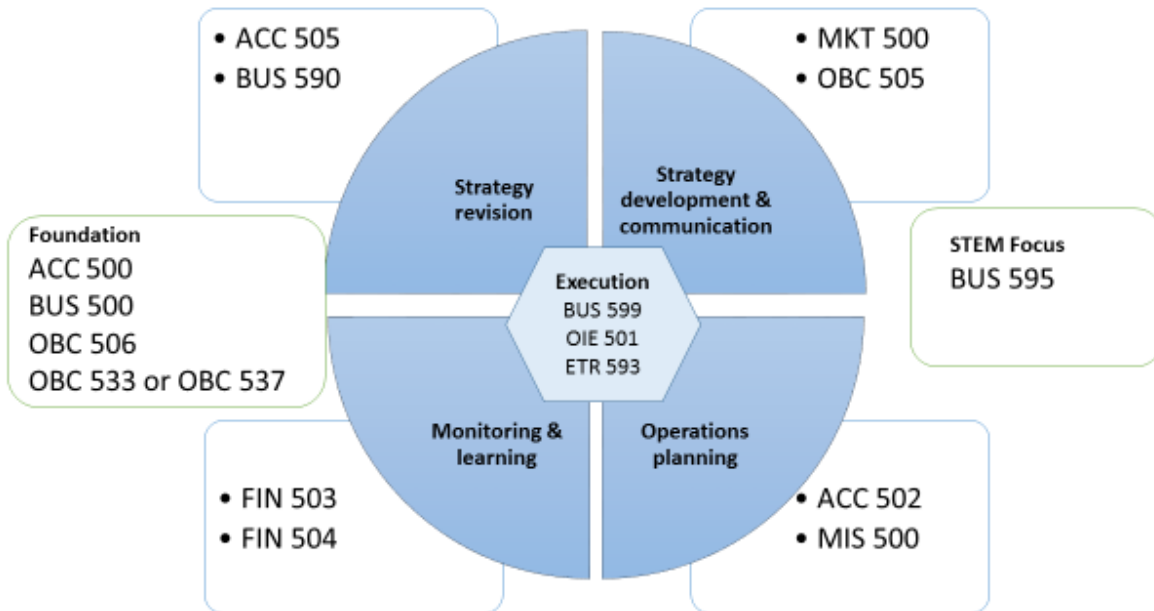
Legend to the table:

COURSEXXX indicates that the course is no longer offered. Students will need to take the course replacing it.
 COURSEXXX* indicates that the course description and/or title is new but no additional teaching resources will be needed.

COURSEXXX# indicates that the course is a brand new offering requiring new teaching resources.

Proposed Curriculum	Credits	Current Curriculum	Credits	Rationale
Required: 15 courses	39	Required: 12 courses	36	Development of soft skills, financial skills, and increased focus on strategy as well as technical content
ACC 500* – Accounting and Finance Fundamentals	1	ACC 503 – Financial Intelligence for Strategic Decision-Making	3	
ACC 502* – Financial Intelligence and Strategic Decision-Making	2			
BUS 500 – Business Law, Ethics, & Soc. Responsibility	3	BUS 500 – Business Law, Ethics, & Soc. Resp.	3	
BUS 590* – Strategy in Technology-based Organizations	3	BUS 501 – Integrating Business Concepts to Lead Innovation	3	
BUS 599* – Capstone Project	3	BUS 517 – Graduate Qualifying Project in Management	3	
BUS 595# – The Edge of Technology in STEM Industries	3	NA	NA	
ETR 593 – Technology Commercialization: Theory, Strategy and Practice.	3	ETR 500 – Entrepreneurship and Innovation	3	
FIN 503* – Financial Decision-Making for Value Creation	3	FIN 500 – Financial Information and Management	3	
FIN 504* – Financial statement analysis and valuation	2	FIN 501 – Economics for Managers	3	
ACC 505* – Performance Measurement and Management	1			
MIS 500 – Innovating with Information Systems	3	MIS 500 – Innovating with Information Systems	3	
MKT 500 – Marketing Management	3	MKT 500 – Marketing Management	3	
OBC 505* – Teaming and Organizing for Innovation	3	OBC 500 – Group and Interpersonal Dynamics in Complex Organizations	3	
OBC 506* – The Heart of Leadership: Power, Reflection, and Interpersonal Skills	3	OBC 501 – Interpersonal and Leadership Skills	3	
OIE 501* – Designing Operations for Competitive Advantage	3	OIE 500 – Analyzing and Designing Operations to Create Value	3	
Choice of 1 course from: <ul style="list-style-type: none"> • OBC533 Negotiations, or • OBC537 Leading Change 	3	NA	NA	Development of soft skills
2 Electives	6	4 Electives	12	
Total: 18 courses	48	Total: 16 courses	48	

Curriculum Mapping



Rationale:

Background: The FBS commissioned a market study, through Eduvantis, in 2016 that identified strengths of the WPI MBA, namely its focus on developing the business skills of STEM professionals. A follow-up study conducted with current and potential MBA students identified the skill sets they valued. The majority of MBA students come into the program with a professional and/or academic STEM background.

Building on the information from these studies, the Graduate Policy and Curriculum Committee (GPCC) of the FBS took the following initiatives, in consultation with FBS faculty:

1. Laying out the principles that guide the redesign of the MBA (Appendix A),
2. Engaging in curriculum mapping to propose a more coherent program using the balanced scorecard method (Kaplan & Norton) (Appendix B),
3. Obtaining feedback from current and past WPI MBA students,
4. Benchmarking WPI MBA program against competitors in regards to curriculum content, program length, and delivery.

In collaboration with GPCC, the faculty MBA director has also worked with the Career Development Center to solicit input from the largest employers of WPI undergraduate students on the skill sets needed as the managerial responsibilities of technical employees increase.

The feedback and input of the various stakeholders was discussed with the MBA Task Force (comprised of members of the Dean's Council of Strategic Advisors, faculty, students (alumni and current), and senior FBS administration) who provided additional suggestions.

The MBA curriculum was redesigned to increase the value of the WPI MBA to students and employers by addressing the skills gaps observed by employers, faculty, current and past students.

Key improvements to the curriculum include:

- Increased focused on soft skills (ranging from communication to interpersonal skills, working with multi-disciplinary teams, and leadership) (see OBC 505, OBC 506, as well as the addition of a required OBC course that students can choose - OBC 533 or OBC 537 -),
- Strengthening the foundation for financial management skills and reinforcing them through applications (See ACC 501, ACC 502, ACC 504, FIN 503, FIN 504),
- Encouraging faculty to integrate business strategy in their courses and to collaborate (done throughout the curriculum), and
- Developing further the applied nature of the curriculum through technical business cases, projects, and involvement of guest speakers (see ETR 593, which is better suited for STEM students than ETR 500, and BUS 595 new course).

Implication of Modification of the Curriculum: While the focus of the changes to the MBA curriculum is to give students a stronger foundation in finance and accounting, as well as to help differentiate the MBA curriculum and build on WPI's strengths, the revised courses will also be offered in the Master of Science degrees currently offered by the FBS thus replacing existing courses. The only exceptions are:

1. ETR 500 which will not be replaced by ETR 593 in the MS in Marketing and Innovation.
2. FIN 500 which will not be replaced by FIN 503 for the following Master's Degrees: Information Technology, Marketing and Innovation, Management, Supply Chain Management, and Innovation with User Experience

ETR 500 and FIN 500 will also still be offered to non-FBS graduate students.

Principles Guiding the Redesign of the MBA:

Role of technology/STEM audience focus

Modern businesses are filled with technology which mediates almost every aspect of an organization. The technology both constrains and enables action in vital ways and management should not be presented in a way that is completely independent of technology.

Moreover, tailoring the MBA to a STEM audience and not general managers is necessary to differentiate the WPI MBA and to appeal to STEM professionals.

Strategy as the foundation and common theme

Organizations exist to do things we cannot do alone. The organizational strategy is a statement of what this purpose is and how it shall be accomplished. Thus strategy drives organizational plans and objectives and applies at all levels of the organization. Furthermore, all aspects of managing an organization can be understood in relation to the strategy.

Working across functions and boundaries

Large organizations are complex, emergent, and often counter-intuitive phenomena that are enacted by people who are driven by multiple, often contradictory motives, and collaborate at different levels of the organization and with a multitude of internal and external stakeholders. Presenting organizations as a combination of independent functional disciplines does not capture that richness. However, promoting the transfer of skills and knowledge gained from a specific course to other courses and broadening students' exposure to all levels of the organization will

better prepare student to work with multidisciplinary teams and with stakeholders from different levels of the organization.

At WPI we believe in:

- managing and learning at the intersection of theory and practice, especially as it is realized in project-based and case-based education,
- increasing students' sensitivity to ethical and social responsibility concerns,
- helping students build reflective and critical thinking and interpersonal skills,
- increasing students' awareness of global and multicultural perspectives and challenges,
- embracing ambiguity and learning from failure.

Resources and Logistics: The curriculum that is presented requires **additional resources for one course:** the new BUS 595 course. FBS anticipates that a faculty member will teach the course working closely with the Dean of the FBS, the Dean of Engineering, and the Dean of Arts and Sciences to bring high profile executives from STEM fields to campus. While the course would be designed for the MBA, the guest lectures would be open to the rest of campus.

The other courses will require redesigning of the courses currently offered by existing faculty.

The one- and two-credit courses are designed to be taken by students during the same semester. They might be taught by different faculty members.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add OIE500 as a prerequisite requirement for OIE542 and OIE 554

Motion: On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that OIE500 be added as a prerequisite for OIE542 and OIE 554

Description of Proposed Changes: (course descriptions with added text in ***bold underlined italics***)

OIE 542. RISK MANAGEMENT AND DECISION ANALYSIS

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. ***(Prerequisite: OIE 500 or equivalent content, or instructor consent)***

OIE 554. GLOBAL OPERATIONS STRATEGY

This course focuses on operations strategy from a global perspective. Topics such as strategy of logistics and decisions to outsource are examined. As an example, the strategic issues concerned with firms that are doing R&D in the United States, circuit board assembly in Ireland and final assembly in Singapore. Cases, textbooks and recent articles relating to the topic are all used. Term paper based on actual cases is required. ***(Prerequisite: OIE 500 or equivalent content, or instructor consent)***

Rationale:

The faculty teaching OIE542 and OIE554 have found that students taking their courses without OIE500 are unprepared for the material. OIE500, OIE542 and OIE554 are all required courses for MSOAM students. We require all entering MSOAM students to take OIE500 in their first semester. OIE500 is offered each fall and spring; OIE542 is a regular spring offering while OIE554 is a regular fall offering.

Resources:

No new resources are required.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to add MIS 585 User Experience Design

Motion: On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that MIS 585 User Experience Design, as described below, be added..

Proposed Course Description:

MIS585 User Experience Design (3 cr.)

Designing positive user experiences is becoming increasingly important in staying competitive in the marketplace. This course covers basic concepts and practical techniques for designing successful digital experiences. These concepts and methods are practiced through hands-on class exercise, assignments, and projects

Contact: Prof. S. Djamasbi

Expected Enrollment: 30 students

Course Type: Elective - The course will be an IT elective in the graduate program, suitable for credit for the MSIT and PhD degrees. There is no impact on other programs' distribution requirements.

Preferred Semester: Fall

Rationale:

User experience plays an increasingly important role in creating business value and as such there is a growing demand for user experience (UX) professionals in industry²⁹. Not surprisingly our students are showing increasing interest in user experience (UX) courses, as attested by the strong student enrollment in User Experience Applications course, MIS 583 which was first offered in Fall 2013: Fall 2017, 45 students; Fall 2016, 48 students; Fall 2015, 33 students; Fall 2014, 22 students; Fall 2103, 21 students (the course capacity was set to 45 in 2017 due to limited number of eye tracking equipment and limited lab space), as well student demand for UX internship or ISP at the User Experience and Decision Making (UXDM) lab (as the MIS 583 course instructor and the director of the UXDM lab, each year the instructor receives numerous requests for ISP from students who wish to deepen their MIS 583 course experience). Therefore, the IS group anticipates a strong interest in the proposed User Experience Design course (MIS 585), which provides fundamental and advanced UX design concepts as well as their practical applications in designing digital products and services. This elective course can supplement and strengthen the existing graduate IT curriculum by providing choices for other graduate and PhD programs at the school of Business.

Resource Requirement: Adjunct instructor.

UX departments have become key in a number of companies such as Dell, Fidelity, Oracle, etc. UXDM lab has strong connections with UX departments in many companies including those mentioned above. Experienced UX professionals in these departments who use UX design as driver for business strategies are well qualified to teach MIS 585. Our anticipated instructor, Mark Traietti, is one such experienced practitioner who is willing to serve as an adjunct for this course. Mark Traietti is a UX designer with 17 years of work experience in Dell/EMC. As a professional UX designer in a Fortune 500 high-tech

²⁹ <https://www.cbsnews.com/media/the-best-11-jobs-in-america-for-2017/4/>
<https://www.mockplus.com/blog/post/the-job-market-prospect-for-ux-designers>
<http://www.economicmodeling.com/2016/12/14/5-career-families-top-job-titles-keep-eye-2017/>

company in Massachusetts, he has first-hand knowledge about and experience with latest UX technologies as well as the evolution of such technologies in developing competitive products and services. His successful professional background and his ability to create business value with UX design makes him a good candidate for teaching this course. If Mr. Traietti is not available, another qualified instructor with similar credentials will be named to teach this course.

Assessment: The course will be assessed by using WPI's standard course evaluation form, with a focus on questions 1, 2, 9, and 26b. The instructor will also provide feedback and reflections on the course effectiveness.

Date: May 8, 2018
To: WPI Faculty
From: Committee on Graduate Studies and Research (Prof. Troy, Chair)
Re: Motion to update Graduate Business Certificates

Motion: On behalf of the Foisie School of Business, the Committee on Graduate Studies and Research recommends and I move that **the Graduate Business Certificates be updated, as described below.**

Description of the Proposed Updates:

See tables on the following pages.

***Updated FBS Graduate Certificates, to be effective fall 2018
(* = course added to certificate)***

Health Systems Innovation	IT Management	Information Security Management	Marketing Innovation	Customized
BUS545 Introduction to Health Systems	MIS571 Database Applications Development	MIS578 Telecommunications Management	MKT500 Marketing Management	Any 4 graduate business course with rationale
OIE556 Health Systems Modeling and Improvement	MIS573 System Design and Development	MIS582 Information Security Management	MKT562* Marketing Research	
Choose 2:	Choose 2:	Choose 2:	Choose 2:	
FIN500 Financial Information and Management	MIS500 Innovating with Information Systems	MIS500 Innovating with Information Systems	MKT561* Consumer Behavior	
MIS500 Innovating with Information Systems	MIS576* Project Management	MIS571 Database Applications Development	MKT564* Global Technology Marketing	
MIS584 Business Intelligence	MIS581 Information Technology Policy and Strategy	MIS581* Information Technology Policy and Strategy	MKT565* Digital Marketing	
OBC500 Group and Interpersonal Dynamics in Complex Organizations	MIS584 Business Intelligence	OIE542 Risk Management and Decision Making	MKT567 Integrated Marketing Communications	
OIE500 Analyzing and Designing Operations to Create Value			MKT568 Data Mining Business Applications	
OIE542 Risk Management and Decision Making			MKT569* Product and Brand Management	
OIE544 Supply Chain Analysis and Design			ETR500 Entrepreneurship and Innovation	

Health Systems Innovation (continued)
OIE552* Modeling and Optimizing Processes
OIE555* Lean Process Design
OIE558* Designing and Managing Six-Sigma Processes
OIE559* Optimization Methods for Business Analytics
DS501* Introduction to Data Science
SYS501* Concepts of Systems Engineering
Other courses as approved by FBS GPCC

Current FBS Graduate Certificates being modified

Health Systems Innovation	IT Management	Information Security Management	Marketing Innovation	Customized
BUS545 Introduction to Health Systems	MIS571 Database Applications Development	MIS578 Telecommunications Management	MKT500 Marketing Management	Any 4 graduate business course with rationale
OIE556 Health Systems Modeling and Improvement	MIS573 System Design and Development	MIS582 Information Security Management	ETR500 Entrepreneurship & Innovation	
Choose 2:				
FIN500 Financial Information & Management	MIS500 Innovating with Information Systems	MIS500 Innovating with Information Systems	MKT567 Integrated Marketing Communications	
MIS500 Innovating with Information Systems	MIS578 Telecommunications Management	MIS571 Database Applications Development	MKT568 Data Mining Business Applications	
		OIE542 Risk Management and Decision Making	OIE505 (no longer offered)	
	Choose 2:			
MIS584 Business Intelligence	MIS581 Information Technology Policy and Strategy			
OBC500 Group and Interpersonal Dynamics in Complex Organizations	MIS582 Information Security Management			
OIE500 Analyzing and Designing Operations to Create Value	MIS583 User Experience Applications			
OIE542 Risk Management and Decision Making	MIS584 Business Intelligence			
OIE544 Supply Chain Analysis and Design				

Rationale:

Foisie Business School (FBS) has not updated its graduate certificates in IT Management, Information Security Management, and Marketing Innovation since 2011. Since our last update, we have modified degree programs and added several new courses. We need to update our certificates to get them back in line with our full suite of offerings.

FBS is changing all of our certificates to four courses/twelve credits. This structure is consistent with our two newest certificates, in Supply Chain Essentials and Supply Chain Analytics, approved by the full WPI faculty 3/28/17. Our current and proposed updated certificates are outlined in the attached.

These updates make our certificates more attractive in terms of content in that they now encompass many of the newer courses that make FBS unique. They also provide students with more flexibility in terms of course choice.

Our hope is that the shorter duration will make our certificates more attractive in the market. Historically, students who have enrolled in an FBS certificate program have used the certificate as a lead-in to a master's degree. A shorter certificate should help us get certificate students matriculated into a master's program sooner.

Resources: FBS certificates are all subsets of graduate degree programs, so we are already delivering all of the certificate courses within our regular load. No new resources are required.