

**PURDUE UNIVERSITY  
GRADUATE SCHOOL**

Minutes of the Graduate Council Meeting  
January 17, 2019  
1:30 p.m.

Fourth Meeting  
Room 302  
STEW

PRESENT: Linda J. Mason, chair, Council Members, Dulcy M. Abraham, Christopher R. Agnew, Thomas W. Atkinson, Taylor W. Bailey, Rita A. Burrell, Ryan A. Cabot, Kuan-Chou Chen, William (Bart) Collins, Marius D. Dadarlat, G. Jonathan Day, Brian R. Dineen, Melissa M. Franks, Keith B. Gehres, Richard H. Grant, Patricia Hart, Mary E. Johnson, Signe E. Kastberg, David B. Klenosky, Maricel A. Lawrence, Michael C. Loui, Samuel P. Midkiff, James L. Mohler, John A. Morgan, Melanie Morgan, Paul F. Muzikar, Manushag (Nush) Powell, Paul Salama, Megan Sapp Nelson, Abraham Schwab, Mitchell L. Springer, Rebecca H. Stankowski, Xavier M. Tricoche, Kevin Trimble Candiss B. Vibbert (Provost's Representative), Nicole J. Widmar Yoon Yeo, Daoguo Zhou

APOLOGIES FOR ABSENCE RECEIVED FROM: Blake A. Allan, David S. Cochran, Michael J. Connolly, Duane D. Dunlap, Rhonda G. Phillips, David G. Skalnik, Anson Soderbery, David Starnes, Carol S. Sternberger,

ABSENCES: Janice S. Blum, Susan M. Mendrysa,

GUESTS: Greg Beaver, Joseph Camp, Natalie Carroll, Debbie Fellure, Donna Ferullo, David Shoorman

I. MINUTES

The minutes of the November 15, 2018, Graduate Council meeting were approved as presented.

II. DEANS REMARKS AND REPORTS

- a) Dr. Linda Mason noted that in response to information that was sent out to faculty, faculty senators, and to members of the Graduate Council regarding the Student Bill of Rights, the document would again be discussed and considered. For those council members that have been on the council for more than a year, The Graduate Student Bill of Right initially started in 2016. The document has gone through many iterations and it was last suggested that the document be edited based on suggestions made by the Graduate Council in spring 2018. Also, it was suggested that the document be sent

through the University Senate for broader exposure and for endorsement. The document did go through the University Senate but has been sent back to the Graduate Council. It is not up for vote today, but for a discussion. The document will be discussed during PGSG's report.

b) Dr. James Mohler gave a report on pending degree program proposals in various stages of review and approval.

c) Dr. James Mohler gave a report on pending course proposals in review with the Graduate Council area committees, proposals awaiting additional information from proposers, course proposals requested by departments for removal, and new course proposals received since the previous Graduate Council meeting.

### III. PRESENTATION

Dr. Susan Prieto-Welch, Director of CAPS (Counseling and Psychological Services) presented an introduction and overview of Graduate Students and Mental Health.

Themes seen by clinicians who work with graduate students:

- Difficult relationships with/difficulties with advisors
  - Lack of support for addressing grievances and perceived injustices within department or with advisor
  - Feeling disillusioned with graduate program
- Felt sense of extreme pressure to perform and accomplish more
  - Workload balance
  - High personal expectations
  - High expectations from advisor
    - Publishing/research pressure
    - Ambiguity related to what program requirements are, and what advisor-driven requirements are that may not have much to do with program
- Feeling isolated
  - Competitive (versus supportive) environment with peers and colleagues
- International students: lack of familiarity w/ advisor/advisee relationship development; high stakes of trying to be employable in the U.S.; language and cultural barriers; discrimination; isolation
- Overall stress
- Financial stress
- Impostor

Dr. Prieto-Welch noted that WellTrack was introduced to campus November 15, 2018.

- Software tool designed to help students enhance already existing coping skills, and continue to develop resilience.
- It accomplishes these goals by providing information about various moods, how we can better understand when we're struggling with upset or challenging moods, and then describing ways that people can cope and address feelings of depression, anxiety and stress.
- To help develop these skills, there are ways to monitor how you're feeling, and various types of guided exercises and strategies for you to learn about and use.
- Students can access it by going to [www.purdue.edu/caps](http://www.purdue.edu/caps), then clicking on the WellTrack button, or by downloading the WellTrack app and using your Purdue credentials to log in.
  - Set up your account using your Purdue username and login, and begin.
  - If signing in on your phone, cut and copy Duo Mobile password first, then go to WellTrack app to sign in

#### IV. AREA COMMITTEE REPORTS (Area Committee Chairs)

*Graduate Council Document 19A*, Graduate Council Documents Recommended for Approval:

Area Committee A, Behavioral Sciences (Signe Kastberg; chair, [skastber@purdue.edu](mailto:skastber@purdue.edu)):

*Graduate Council Document 18-24b*, **PSY 60901, Multilevel Modeling** (PWL)

*Graduate Council Document 18-24c*, **PSY 62601, Bayesian Statistics for Psychological Sciences** (PWL)

Dr. Signe Kastberg presented two courses for consideration. The courses were approved by the council, upon a motion by Dr. Kastberg.

Area Committee E: Life Sciences, Ryan Cabot, chair; [rcabot@purdue.edu](mailto:rcabot@purdue.edu)):

*Graduate Council Document 18-15a*, **BTNY 56000, Survey of Mathematical Biology** (PWL)

Dr. Ryan Cabot presented one course for consideration. The courses was approved by the council, upon a motion by Dr. Cabot.

## **DEGREE PROGRAMS:**

Area Committee B, Engineering, Sciences, and Technology (Samuel Midkiff; chair, smidkiff@purdue.edu):

GCdoc18-43a, Ph.D. in Mechanical Engineering, submitted by the Department of Mechanical Engineering, IUPUI

Dr. Samuel Midkiff presented one degree program for consideration. The degree was approved by the council, upon a motion by Dr. Midkiff.

## **V. PURDUE GRADUATE STUDENT GOVERNMENT -- PRESIDENT'S REPORT**

Mr. Taylor Bailey, President of the Purdue Graduate Student Government (PGSG) noted that The Graduate Student Bill of Rights responsibilities was a project that was initiated through a task force in the Graduate Student Senate in 2016. The document was a response to specific incidences or occurrences with graduate students. The problems that graduate students face are unique compared to those of undergraduates. Mr. Bailey explicitly stated that the Graduate Student Bill of Rights is meant to be an aspirational document that helps provide context for the expectations that a student should have: 1) what they should expect from the University and 2) what should be expected from them as a student. The document was originally twice as long; the current document has received a lot of input from the Graduate School leadership and other faculty members, as well as the Senate Student Affairs Committee and from the Graduate Council. The PGSG has been able to reduce the document to about 45 pages depending on the formatting. The document at present is identical to the document that was presented to the Graduate Council last April. In that meeting, there were a couple of specific points that were raised by the Council. Specifically, there was concern that there is redundancy with the document that the PGSG is trying to have endorsed and other documents that exist. Thematically, there is overlap between the Graduate Council's guidelines for graduate mentoring (written by and for faculty) and the PGSG document. From the perspective of a student, the document does not have the same purpose as the document of suggested guidelines for faculty (it is instead written by and for students). While thematically there is overlap because it is from the perspective of the student, we don't think that redundancy causes any issues as it does not conflict with existing materials (it reinforces them).

Mr. Bailey noted that there is a Purdue University Bill of Student Rights for West Lafayette students that does pertain to all students. Fundamentally, that document sets up the legal relationship between students and the University in the fact that students will not be discriminated against, students have a right to use University facilities, and does little to help describe the expectations of what it is to be a graduate student. The comment was made that the document is called, *The Bill of Rights and Responsibilities* and there may be some problem with the implication of using the word, "rights". Mr. Bailey noted that they followed up with Purdue legal and replacing the word "right" with any other word such as "expectation" would lead to no improvement and there is no meaningful expectation that is enhanced by using the word "right" over using the word expectation. The intention of this document is not meant to be policy or to be enforced or have authority. It is a statement of value that can be used to initiate conversation about some

issues that were already discussed such as empowering students to realize they are allowed to ask questions or to seek resolution of problems they may have with their advisor or with uncertainties surrounding their graduate programs. Mr. Bailey noted that since that meeting, he met with the Office of the Dean of Students in the Office of Students Rights and Responsibilities making it very clear that this document is aspirational; it is not intended to be policy enforceable. Those offices gave their blessing on what PGSG is trying to do, noting that their offices cannot do anything to follow up with students in the sense that these rights are not enforceable by the Office of Students Rights and Responsibilities. However, the intention is to connect students who end up in conflict with other resources such as The Office of Graduate Assistants in Conflicts and Resolutions in the Graduate School or to help support their efforts in trying to communicate either with their major professors or with other resources that they may have.

Mr. Bailey noted that the document was presented in January to the Senate, where he stated everything that he has spoken about at the Graduate Council meeting today. The Senate endorsed the document by nearly a unanimous vote in January. At this time, the Senate will revisit the endorsement of the document. With the interest of the Graduate Council this discussion today is to update everyone that there have been some points that have been made since the last meeting in April.

LJM: We will open the floor for any discussion of concerns to take under consideration.

Graduate Council Member: The statement was made that the practices for The Bill of Rights does not have any legal merit. Could a student file a complaint or lawsuit if this has been approved by the Graduate Council and the Senate? Regardless of whether the Senate has any right to approve it or not, could it be used in a lawsuit?

Taylor Bailey: The answer from Trent Klingerman, Assistant Legal Counsel - when the Senate endorses a document that discusses policy or something that a student may interpret as an expectation it creates a meaningful expectation. The result of a lawsuit stemming from a document that was otherwise well contextualized to not be intended to be a legal right, would result in the student having no case. There would be a particular responsibility in making sure that those students know that this document is not intended to be used, and cannot be used, in that manner.

Graduate Council Member: I was wondering about people from the last time who objected to the use of the word "*rights*". I will continue that objection simply because the document reference having a right to a competitive salary. I firmly believe that we can pay our graduate students enough that they are not concerned about feeding themselves and having a place to live so that they can move forward with their research. There are factors over and above what individual faculty do - such as what funding agencies will pay and what corporations will pay on contract. It does not make sense from a semantic point of view and I do not see the purpose of asserting such a right when there is no way it can be fulfilled. Part of the issue on this is my department gives graduate fellowships out of our endowment. We have some choices on how much to make those fellowships for compared to certain institutions. We are significantly below what they offer their fellowships. Were we to follow the guidelines or the rights outlined in this, we would

probably increase by 50% to doubling our fellowships. The consequence of that is we would have students that would otherwise be able to come to Purdue because they would not have the funding because we doubled up the funding to give to other students.

LJM: First, graduate stipends minimums are set by the Graduate School. You cannot pay beneath that stipend level. You can go as much as you want above that and there is considerable difference on what salaries are paid across campus within the faculty. For an assistant professor hired at Purdue, one could say that, competitively, the job is the job. You are faculty and you're going to do research teaching and whatever as a tenure track job. Certainly, there are not uniform competitive equal wages across that. It would be the same with the student population. That is the only legal thing that you would have now if you are being paid as part of a grant and the grant says this, this is what the money is, just like a job. You have the right to take the job or not take the job. If someone is going to offer you more money at another institution, you get a decision to decide. Do I want to be paid this or this; the cost of living is there and there. This document is not going to say what an individual gets paid and what is a fair wage and what is the cost of living. It just says that you have an expectation to at least meet the standard of which the university sets, which is a graduate student set minimum.

Graduate Council Member: What the document says is, "you have a competitive salary relative to their colleagues in comparable departments in peer universities".

JLM: Standardized to cost of living for an individual who is renting housing in Greater Lafayette area.

Graduate Council Member: We are in some cases behind that.

LJM: In most cases, we are way below where that competitive wage is.

Graduate Council Member: There are two things: 1) this is either a dead letter that we approve because it in fact does not have any effect on anything, or 2) it does have some sort of effect and my worries are valid. There is a finite pool of money that most offices are getting funding from. If we raise those salaries and if this has any effect and approve it, the consequences of that will be the fact that we will have fewer graduate students employed at the University.

LJM: It should have no influence on what you are currently paying within your department. Those are decisions that you make within your department where you want to go with your graduate program, where the stipends are competitive for you to get the students that you want as long as you are above our minimum.

Graduate Council Member: Does this document have any effect or does this not have any effect?

LJM: It is meant to be aspirational; it is not meant to be policy.

Taylor Bailey: There is no net effect. Outside of fostering an environment where students have the presumption that their needs matter also. So, no one can use this document to say that I deserve to be paid better, but you can argue that the culture at the university endorses an environment where staff members have a right to fair compensation and we define what we consider to be a fair compensation. If there is a faculty member in the

department who otherwise disagrees, irrespective of the reason for fundamentally opposing (e.g., they just don't have the money), this document does nothing to them. It is at least, from perspective of students, a way to start the conversation or it is something to think about that you may not realize as a whole.

Graduate Council Member: I am taking from that the document really has no effect.

Taylor Bailey: No real effect in the sense that it is aspirational. It is meant to be a statement of values where the net effect to a student is fostering an environment where students feel that they actually matter, that their needs matter, and not everything is a system where they are systematically disenfranchised.

LJM: This is not policy. It will not dictate policy.

Graduate Council Member: I strongly continue to endorse this document. I was a member of the Graduate Council last year. I believe it is an important statement with fundamental values even if there are no legal rights here. There are moral rights that attend to aspirational codes of ethics that many of us have in our profession. Some of the codes are important; some are not, but they are still important statements of aspiration that we want to work towards and endorsements of expectations on both sides in graduate students' relationships with the faculty and the University. I think anything we can do to articulate the importance of these values for graduate education and strengthen them in Graduate School for graduate students empowers graduate students. I am strongly in favor of this document and I hope that we can continue to score a path to its endorsement.

Graduate Council Member: I must confess that I just came to Graduate Council last semester I had not really read the document well until a few days ago. I love the sentiments; I support the sentiment for the Bill of Rights gives. One of the major concerns that I have is how well is it going to be accepted by the faculty. That is my question because I think everything that has been stated out here as far as rights goes to what we should morally do for the wellbeing of our students and for the wellbeing of our community and for wellbeing of who we are as Purdue. But, if the document itself does not have any standing or nothing can be done about it other than it just being a list of aspirational needs or aspirational goals, then have we done anything other than put that on paper?

Taylor Bailey: The fact that it is aspirational I don't think it's important contractually - the importance is what it can do for the environment of graduate education from the perspective of a student. There is nothing else that does this as thoroughly as this does trying to tell a student this is what it should look like to be a graduate student. There is a lot of disparity between the resources from department to department that would explain to a student things such as how you set up a committee meeting or other things that are fundamental to the experience. This helps at least without discussing things that are quite that specific. It standardizes at least the expectation if no one else has told you any of this. There are instances wherein the mentoring relationship fails because of the major professor or the student. Sometimes students do not know otherwise. Whereas it may not create the enforceable follow-up, it still meaningfully impacts the perception of graduate education at Purdue because all of these points stem from experiences that students have had. If it were not for that and it was all hypothetical I would argue that maybe it is not worthwhile. But the fact that it is in response to real experiences even if it is not forcible it is still effective at fostering a better environment.

Graduate Council Member: I think anyone of them is based on multiple experiences of students because a graduate chair has had to leave. Most of these issues including salary discrepancies for instance and so on. I don't know whether this document has enough review and support. Is it supposed to be a document that is going to enhance the joint graduate experience of the student as well as the faculty member? I think there has to be input from the faculty members also. I am sure there was at the Graduate Council level. In my department, we did not talk about this at all and I do not know whether we did at the College of Engineering graduate committee meetings. In my opinion, I think getting more buy-in from the faculty will make this document go much more than just being an aspirational Bill of Rights.

LJM: There are two things: 1) This was not meant for faculty; it is for the students to understand the experience, not to educate faculty what they need to be doing to be a good mentor or a student. 2) Faculty needed to be involved in the discussions, so it would be realistic for students to have an understanding of what is realistic for a graduate student in the eyes of the majority of faculty.

Dean Linda Mason introduced Senate Chair Natalie Carroll, Head of University Senate and Joe Camp, Secretary of Faculties who have been dealing with the faculty side of this issue.

Natalie Carroll: I was on this Council last year and the Bill of Rights was brought to us with good discussion and why it was not taken back to the Senate and I don't know. We looked at this in detail with the Student Affairs Committee and met with Taylor Bailey and others. I believe when they say it is aspirational, we want to help students know more. We have all seen when things go bad and that is not good. We do not want to lose those students and we do not want them to lose time. The Senate voted overwhelmingly to say we support this document and we did vote on it. There was one person who was very upset and contacted us after the meeting who was on the Senate last year when it was presented. We are not sure what happened and that person asked for a recall. It (the recall) did not get 89 votes, but did get 75, so what is going to happen now with the Senate, with our affirmation, is going back to committee again to decide if they want to bring it up again or if they want to ask the students to change anything. Again, we support the idea.

Joe Camp: This action does not have any impact on the document itself, the Bill of Rights; the Senate's vote merely supports it. The individual of concern, I understand, has provided his thoughts which you have in front of you. You have read it; agree or not agree. Dean Mohler has provided a rebuttal in front of you with pros and cons. Now the Student Affairs Committee can decide whether we reaffirm the original Senate document 1802 with no changes. They might decide they will take Dr. Landry's suggestions and revise them. Either way, amended or not amended 1802 will return to the Senate and we will see what happens. If the Senate and Student Affairs reaffirm the original with no amendment, it then goes to a mail ballot of the entire faculty at the University. The University does not have a mechanism to do that so it will be very interesting to see what happens.

Natalie Carroll: If the students still can have their document whether or not we (the Senate) say we bless this or not.



LJM: I will tell you the way the Council may go if this draft drags on to the end of the semester. Council will make an endorsement independent of the Senate so that the students can go forward with this after it, after lingering for three years. Then it can go on however it wants to do in the life of the Senate. I think that we owe it to PGSG to make a decision of whether or not we will eventually endorse this document, allowing them to go with what they want to do with it, or to not endorse it. In the realm of the University, it is this body that really has the oversight of graduate education and the interaction with graduate students. It is more relevant than the Senate vote. Although Senate represents all faculty and the faculty are the ones that interact with the students, so it would be nice to have an agreement between what is going on between the Faculty Senate and the University Graduate Council. Yet, in graduate matters, it is the Council and the faculty as a faculty group that are the ones that are nominated and serve to represent a graduate faculty. On matters of graduate education, this body has control of that. Again, it is the Purdue Graduate Student Government's document; we are not editing, we are not accepting it, or it is not becoming part of graduate council policies at all. This is their document to go forward with.

Graduate Faculty Member: Is this benchmarked at all? Do we see this at other universities?

Taylor Bailey: Not every university has a Student Bill of Rights that specifically singles out graduate students or graduate professionals. It is not consistent across the Big Ten. Michigan State, Michigan University, Nebraska and Penn State all have a separate Graduate Student Bill of Rights and Responsibilities - I believe with that specific title. Only at one of those institutions, I believe it is Michigan State, is a Board of Trustees' endorsed document that stands separate from another Bill of Student Rights. In this case, we are not trying to go that far with the document as it is written. At this point, we want this to be aspirational. Perhaps it is a first step to something that may be made into an actual policy. It is common for this type of document, at least in my interpretation of the documents in what notes they have included that they are more aspirational; not enforceable policy.

Graduate Council Member: Within our graduate program, we have professional master's students and we really don't have the same aspirations for them as we do for our Ph.D. students. We don't expect to pay them anything not even a non-living wage. We are up to almost 70 students now and they have one sole advisor and the expectations or the aspirations for them to have received mentoring on the level outlined in the document are not the level of mentoring we expect for our Ph.D. students. This is because it is relatively new professional master's program and is experiencing exponential growth right now. We had eight students just two years ago. So, I don't know that we have the blanket aspirations for all graduate students at this time.

LJM: That is one of the things, why graduate staff vs student, was focused on early in this document - that there are many different kinds of students. There are professional students, master students, Ph.D. non-thesis, and so on. It is different from graduate staff as an employee category. What do we do with students that are on graduate assistantships and are considered staff for some part of their student life, but as just students for other rules, we must consider this aspect differently. So professional masters for example, where we say you cannot pay, they are not included in this graduate staff, instead are considered graduate students. This document addresses both students as employees and student as students.

Graduate Council Member: I thought it said “graduate students”. Actually, it is precise in the wording.

Taylor Bailey: The first article in the section specifically specifies - graduate staff and there is another section that specifically specifies – graduate staff.

Graduate Council Member: I will go back and find it.

Graduate Council Member: It may have been awhile since some of us have read this document; I am just speaking for myself. Perhaps other faculty have not seen it and I take to heart Dulcy Abraham’s comment that this an important thing if we really want to change culture; we really need to get buy-in from the parties. Maybe it is time to send this draft out again. Maybe it is our responsibility as the representatives of the Council to make sure that our faculty sees this original document.

Graduate Council Member: I want my colleagues to buy-in to this. We may not be able to pay it, but we do an assessment of salaries every two or three years. There was a seven-year period when our students got the same salary. There was a lot of hiccup when I brought up the issue of having salaries raised. We finally got it to happen because faculty bought-in to it and it was unanimously supported and I would like to see that.

LJM: Faculty control many of these issues.

Graduate Council Member: Right, so I would like to see the buy-in because I really appreciate what you have done Taylor because it brings together everything that makes for a good environment. We don’t want it to just be aspirational, I want it to be part of who we are as Purdue.

LJM: So I will tell you one of the responsibilities of a Council member is that you have been chosen to represent a group of faculty. It is hoped that your colleagues will take that responsibility seriously and bring this back to those individuals that you represent in whatever way, shape or form you can and have these discussions. You are appointed by your Deans to serve on the Graduate Council, but those that you elect as Faculty Senate also need to read the documents that are put in front of them and if they are not reading the documents and not even showing up you need to challenge this. In my younger days, we would often fight for quorum in Senate because faculty get elected and do not show up. They are representing you and if they don’t represent you well by not bringing back the information that they are given vote them out. That is their job and we need to take that seriously, when we take on a committee responsibility, we need to take that seriously. If the vote in the Senate happened because people didn’t read a document and are blindly raising their hands for those that are there, that is not on these students and it is not on the policies that we pass. That is on the individuals that serve and raise their hand without reading a document and we need to put it back on them. Yes, we need to take this back and have as many discussions as we need to have, but again we also need to give a fair shake to those individuals that have been doing this for three years and it is our fault we didn’t take it back and read it. I know my department student senator sent it to the faculty and the faculty made comments, it was sent back to that senator and passed it on. It was a surprise when they got the document again this spring, that this was still going on after years that they had made comments back in the College of Agriculture. Again, this is what we hope to do.

Natalie Carroll: Thank you for your words and it is true it is frustrating when you don't always have people paying attention. I don't want your comments to refer the fact that it wasn't in support of the document. In this case they were very supportive of the intention. I think they possibly used this document to send some of that message back to the Senate that you just shared to take this seriously. The Student Affairs Committee did look at it seriously and they brought it for a vote, so as long as you don't get the two mixed up.

LJM: We do know this. We will send the document out again. Look at it, read it, distribute it, have discussions, talk about it. If you have questions, please send them to Taylor.

## VI. CLOSING REMARKS AND ADJOURNMENT

The council meeting was adjourned by Dr. Mason at 2:50 p.m.

Linda J. Mason, Chair

Tina L. Payne, Secretary

## APPENDIX A

### PENDING DOCUMENTS

(January 17, 2019)

#### **BOLDED ITEMS ARE IN REVIEW WITH AN AREA COMMITTEE**

Area Committee A, Behavioral Sciences (Signe Kastberg; chair, skastber@purdue.edu):

***Graduate Council Document 18-24b, PSY 60901, Multilevel Modeling (PWL)***

***Graduate Council Document 18-24c, PSY 62601, Bayesian Statistics for Psychological Sciences (PWL)***

Area Committee B, Engineering, Sciences, and Technology (Samuel Midkiff; chair, smidkiff@purdue.edu):

***Graduate Council Document 18-22a, IE 68500, Competitive Strategy (PWL)***

Area Committee E: Life Sciences, Ryan Cabot, chair; rcabot@purdue.edu):

***Graduate Council Document 18-15a, BTNY 56000, Survey of Mathematical Biology (PWL)***

Area Committee F, Management Sciences (Nicole J. Widmar, chair; nwidmar@purdue.edu)

***Graduate Council Document 17-11a, ECON 63300, Macroeconomics with Heterogeneous Agents (PWL)***

***Graduate Council Document 17-11b, ECON 64100, Computational Economics/Numerical Methods (PWL)***

***Graduate Council Document 17-11c, ECON 65300, Economics of Early Childhood and Skill Formation (PWL)***

***Graduate Council Document 17-11d, ECON 68100, Bayesian Econometrics I (PWL)***

***Graduate Council Document 17-11e, ECON 68200, Bayesian Econometrics II (PWL)***

***Graduate Council Document 18-9f, MGMT 58600, Python Programming (PWL)***

***Graduate Council Document 18-9a, MGMT 58800, Business Insights with Spreadsheets and Macro Programming (PWL)***

**NEW DOCUMENTS RECEIVED**  
(After the January 17, 2019 Graduate Council Meeting)

Area Committee A, Behavioral Sciences (Signe Kastberg; chair, skastber@purdue.edu):

*Graduate Council Document 19-12b, ASEC 54500, Teaching STEM Through Agriculture, Food and Natural Resources* (PWL) Sem. 2. Lecture 1 time per week for 150 minutes. Credit 3.

The course focuses on the background and history of STEM movement and agricultural education, contemporary models, strategies, and justification for incorporation of science, technology, engineering and mathematics (STEM) concepts and practices into K-12 formal and non-formal agricultural education programs. Consider and develop the best practices for STEM teaching and learning and enhancement of STEM content in agriculture, food and natural resources (AFNR) context. The goal of the course is to help students develop knowledge about STEM integration and equip them with teaching knowledge and skills for designing K-12 lesson plans by using integrated STEM through AFNR. Students will learn strategies that promote engagement in integrated STEM through AFNR activities. At the end of the course, students should be able to design and implement research-based integrated STEM through AFNR lesson plans and assessment plans.

*Graduate Council Document 19-12a, ASEC 58500, Science Communication* (PWL) Sem. 2. Lecture 1 time per week for 150 minutes. Credit 3.

This course utilizes foundational research and commentary from scholars to track the evolution of media and our ability as scientists to understand and effectively communicate these issues to a non-science audience. Science and technology are evolving faster than societies ability to understand, assimilate, and make policies to address these increasingly complex issues. As a result, controversies arise over issues such as climate change, forest management, genetically modified foods, energy choices, genetic engineering, nanotechnology, water management, and agricultural practices, etc. This course covers the range of issues in the field of science communication including: the nature of science, how to translate evidence for a lay audience, media practices, reporting and qualifying uncertainty, human psychology and belief systems, information processing, and the most current research for messaging science. We will work together to examine the foundational scholarly literature in this area and how it is/ or is not reflected in construction of popular media. You will use this knowledge to construct both compelling oral science narratives, and a science story for popular consumption.

*Graduate Council Document 19-6a, EDCI 63300, Instructional Design Project Management* (PWL) Sem. 1 and 2. SS. Lecture 1 meeting per week for 150 minutes or Distance 8 weeks. Credit 3.

This course focuses on the application of project management ideas, concepts, and strategies in instructional design settings. Students will be asked to consider the relationship between instructional design and project management, tools that can assist with managing instructional design projects, and factors influencing the instructional design project management process. Students will explore these topics by creating deliverables for instructional design cases and other interactive assignments.

*Graduate Council Document 19-4a, EDU 50700, Assessment Theory And Practice* (PFW) Sem. 2. Lecture 3 hours per meeting/4 meetings per term/8 weeks per term. Credit 3.

This course provides a foundation in psychometric theory. It surveys current trends in assessment and examines the specific role of standardized testing in evaluating students and schools. Students will explore important considerations for test selection and interpretation for diverse student populations, and develop expertise in data literacy and use of test results for instructional planning. Students will learn to create formal and informal assessment instruments. Authentic assessment, peer assessment, and student self-assessment will be addressed.

*Graduate Council Document 19-14a, ENE 50101, Foundations Of Engineering Education (PWL)*  
Sem. 1. Lecture 3 times per week for 50 minutes. Credit 3.

Credit Hours: 3.00. In this course, new doctoral students in engineering education explore their roles within the field of engineering education, create a learning plan that maps to program requirements, and develop habits of mind to support their ongoing professional development. Students learn to write clearly and coherently in an academic context. Students examine research trends and faculty interests so they can make informed choices about advising and program opportunities. Permission of instructor required. Typically offered Fall.

Area Committee B, Engineering, Sciences, and Technology (Samuel Midkiff; chair, [smidkiff@purdue.edu](mailto:smidkiff@purdue.edu)):

*Graduate Council Document 19-d, CGT 57500, Data Visualization Tools And Applications (PWL)* Sem. 1. Lecture 1 time per week for 180 minutes. Distance. Credit 3.

This course provides hands-on experience in data visualization tools and applications. The course is designed for students with little or no background in Data Visualization. It introduces students to design principles for creating meaningful displays of quantitative and qualitative data to facilitate insight and decision-making. The goal is to introduce visualization as a tool, explore and identify which visualization tools are better suited to visualize different types of data, and understand the role visualization plays in understanding what the data represent. This course gives students an in-depth view of the various branches of visualization and the visualization tools in each area. After taking the course, students will be able to evaluate data visualization tools and determine which tool to use for different types of data. This course is targeted towards students interested in using visualization in their own work and future academic courses.

*Graduate Council Document 19-15a, ECE 61020 Operation of Modern Power Systems (PWL)*  
Sem. 2. Lecture 3 times per week for 50 minutes. Credit 3.

Introduction to modern power system operations. Economic dispatch of assets as a constrained optimization problem, and solution methods. The unit commitment problem formulation, and solution methods. Power flow solution methods. Security-constrained economic dispatch and unit commitment. The optimal power flow. Automatic generation control. Operation of power markets. Typically offered Spring.

*Graduate Council Document 19-16a, IE 54100, Nature-Inspired Computation (PWL)*  
Sem. 1 and 2. Lecture 3 times per week for 50 minutes. Credit 3.

Prerequisites: (CS 15900 or CS 15800 or CS 18000) and IE 33500 and IE 33000

This course is about algorithms that are inspired by naturally occurring phenomena and applying them to optimization, design and learning problems. The focus is on the process of abstracting algorithms from the observed phenomenon, their outcome analysis and comparison as well as their “science”. This will be done primarily through the lens of evolutionary computation, swarm intelligence (ant colony and particle-based methods) and neural networks.

*Graduate Council Document 19-16b, IE 54900, Machine Vision in Intelligent Robotic Systems (PWL)* Sem. 1 and 2. Lecture 3 times per week for 50 minutes. Credit 3.

Prerequisites: MA 26500 and (CS 15900 or CS 15800 or CS 18000) and IE 23000.

Introduction to machine vision and learning algorithms from a human-machine interaction standpoint, and application of machine vision techniques to the design of human-integrated cybernetic systems, such as, robotic systems, flexible automation, and wearable electronics.

*Graduate Council Document 19-16c, IE 57800, Applied Ergonomics (PWL) Sem. 1 and 2. SS. Lecture/Distance 3 times per week for 50 minutes. Credit 3.*

Analysis, modeling, and design of jobs and systems to be consistent with human factors and ergonomic principles.

*Graduate Council Document 19-17a, ME 53100, Characteristics Of Particles, Powders, And Compacts (PWL) Sem. 2. Lecture 2 times per week for 50 minutes. Lab 1 time per week for 100 minutes. Credit 3.*

Alternate Years - Familiarize students with the properties and methods used to characterize the mechanical behavior of particles, powders, and compacts, with the intention of using these properties for process and performance design. Students work with a subset of the measurement methods in a laboratory setting. Students successfully completing the course will be able to define and describe the significant properties of particles, powders, and compacts; describe and demonstrate techniques used to measure these properties; and demonstrate how these properties are useful in product and manufacturing performance.

Area Committee C: Chemistry, Engineering, and Physical Sciences, Chair to be determined):

*Graduate Council Document 19-13a, BCHM 61200, Bioinformatic Analysis of Genome Scale Data (PWL) Sem. SS. Lecture 2 times per week for 50 minutes for 8 weeks. Credit 3. Prerequisites: BCHM 60100, 60200 and 60501 or approval of instructor.*

This course provides a hands-on experience for life science researchers in the bioinformatic analysis of genome-scale data. The various disciplines in the life sciences are generating a wealth of experimental and annotation data. Today's graduate students need experience with modern tools that can help them to access, explore, analyze, interpret and manage the data that they generate in the lab.

Students will use the R programming language and packages from Bioconductor, the R bioinformatics project, as their principal tools for this course. Students will develop workflows in R that bridge established algorithms for bioinformatics such as limma, edgeR or DESeq2, incorporating methods to import, QC, transform and visualize genome-scale datasets derived from next generation sequencing experiments. A critical aspect of bioinformatics that is often inadequate is workflow documentation. This course will use Rmarkdown to integrate computer code, data and results to manage complex bioinformatics projects.

The class has lecture, lab and distance components. Lectures will focus on the theoretical and biological aspects of bioinformatics analysis using recent examples from the literature. In lab, students will work on programming exercises or projects using published datasets. Advanced students will also have the opportunity to work with their own data. Distance instruction will include R tutorials and videos that students can work through at their own pace (subject to completion deadlines). Particular emphasis will be placed on the theoretical and practical limitations of next generation sequencing data.

No prior computer programming experience is required, but it is assumed that students have a firm grasp of the fundamental principles of molecular biology and how they relate to complex processes such as gene expression and genome organization.

*Graduate Council Document 19-11a*, **BME 55600, Introduction to Clinical Medicine for Engineering Solutions** (PWL) Sem. 1 and 2. SS. Lecture 2 times per week for 75 minutes. Distance. Credit 3.

This course introduces students to the physiology and medicine underlying major human diseases likely to become research targets in biomedical engineering and medical device development. It encourages students to upgrade research target selection to include projects that promise to improve patient care, with a major emphasis on pathophysiology and disease mechanisms. The information and intellectual approach offered will help students recognize needs for engineering solutions to current challenges in medicine.

The course also previews the intellectual content of medical school, including rigor and level of detail, for engineering students considering designing medical solutions or translational engineering research as a career, emphasizing the key “11-points” necessary for practical understanding of any disease: definition of the condition, causes, functional abnormalities, structural abnormalities, early signs, history and physical findings, differential diagnosis, special studies (lab, imaging, etc.), treatment strategy, specific steps of treatment, and follow up, as well as current clinical needs for innovation and research opportunities for the future.

To avoid possible redundancy with the Weldon School undergraduate curriculum, focal areas of the course include topics and body systems not covered in BME 25600, including infectious diseases, cardiopulmonary diseases, hematology-oncology, and gastrointestinal diseases.

Area Committee D, Humanities and Social Sciences (Manushag (Nush) Powell, chair; [mnpowell@purdue.edu](mailto:mnpowell@purdue.edu)):

*Graduate Council Document 19-5a*, **GRAD 55000, Fellowship And Grant Application Writing** (PWL) Sem. 1. Lecture 1 time per week for 50 minutes. Credit 1.

GRAD 590: Fellowship Application Writing is open to any graduate student who is interested in applying for fellowships and other grant opportunities. Graduate students will be taught how to write personal statements, research statements, and extended research plans that they can submit for fellowship applications. Organization of research background, methods, and significance will be emphasized. Writing mechanics and addressing grant agency requirements and procedures will also be covered. Additionally, fellowship and grant opportunities will be discussed along with professional communication skills.

Area Committee E: Life Sciences, Ryan Cabot, chair; [rcabot@purdue.edu](mailto:rcabot@purdue.edu)):

*Graduate Council Document 19-19a*, **FNR 58600, Urban Ecology** (PWL) Sem. 1. Lecture 2 times per week for 50 minutes and Recitation 2 times per week for 50 minutes. Credit 3.

Urbanization is on the rise, transforming natural ecosystems into coupled human-natural ecosystems that encompass complex, novel functional and structural characteristics shaped by people and the inherent environment. Through local field trips and readings of the primary scientific literature, we examine the unique characteristics of coupled human-natural ecosystems. The course is designed to be broadly accessible to students from a variety of backgrounds, interests, and majors who are interested in environmental science and engineering and emphasizes the importance of incorporating an ecological perspective in environmental engineering and natural resource management. This course covers fundamental principles of ecology as applied in urban and other coupled human-natural systems with emphasis on the impacts of modern industrial society on



ecosystem structure and function. Organizing themes addressed in this class include macroscale processes, systems thinking, and topics related to urban systems.

Area Committee F, Management Sciences (Nicole J. Widmar, chair; [nwidmar@purdue.edu](mailto:nwidmar@purdue.edu))

*Graduate Council Document 19-18a, **MGMT 66600, International Business** (PNW)*  
Sem. 1 and 2. SS. Lecture 1 time per week for 75 minutes and Distance 50% or Lecture 150 minutes per meeting or Distance 100%. Variable Title Credit 2 to 4.

This course focuses on the opportunities and threats of the complex environment of international business, with an emphasis on the unique problems involved in managing international operations. Main topics include the relevance of the foreign economic, political, legal, international trade issues, the cultural environment, international market analysis, foreign exchange risk management, international human resource management, and import/export transactions.

*Graduate Council Document 19-18b, **MGMT 66800, International Business Practicum** (PNW)*  
Sem. 1 and 2. SS. Lecture 1 time per week for 100 minutes plus Experiential 2 weeks study abroad. Credit 2. Prerequisites: MGMT 61100.

International business practicum, in the form of a study abroad. Practicum is field-based and involves the completion of team and individual projects about businesses in the destination country. The projects address a current and significant problem identified by the firms during the visit. Students work in teams, effectively demonstrating interpersonal and teamwork skills as well as communication abilities appropriate in a collaborative business setting. The international travel component is preceded by an extensive review of recent literature featuring case studies and primary research about businesses in the destination country or region.

## **MAJORS:**

Area Committee A, Behavioral Sciences (Signe Kastberg; chair, [skastber@purdue.edu](mailto:skastber@purdue.edu)):

*Graduate Council Document 18-52a. **Major in Clinical Psychological Sciences**, submitted by the Department of Psychological Sciences, PWL*

*Graduate Council Document 18-53a. **Major in Cognitive Psychology**, submitted by the Department of Psychological Sciences, PWL*

*Graduate Council Document 18-54a. **Major in Industrial-Organizational Psychology**, submitted by the Department of Psychological Sciences, PWL*

*Graduate Council Document 18-55a. **Major in Mathematical and Computational Cognitive Science**, submitted by the Department of Psychological Sciences, PWL*

*Graduate Council Document 18-57a. **Major in Social Psychology**, submitted by the Department of Psychological Sciences, PWL*