PURDUE UNIVERSITY
GRADUATE SCHOOL

Minutes of the Graduate Council Meeting
September 17, 2021
2:30 p.m.

First Meeting
Via Zoom

PRESENT: Linda J. Mason, chair, Council Members, Kola Ajuwon, Thomas W. Atkinson, Yong Bao, Janice S. Blum, Steven J. Burdick, David S. Cochran, Joy Colwell, G. Jonathan Day, Eric D. Deemer, Bryan DeWitt, Levon Esters, Keith B. Gehres, Jeffrey P. Greeley, Erla Heyns, Randolph D. Hubach, Tong Jin Kim, Ann L. Kirchmaier, Douglas J. LaCount, Jiliang Li, Yanjun Li, James L. Mohler, Melanie Morgan, Madelina Nuñez, Zhan Pang, Tina L. Payne, Jenna Rickus (Provost's Representative), Paul Salama, Megan Sapp Nelson, Abraham Schwab, Ann Shanahan, Michael G. Smith, John A. Springer, Jill J. Suitor, Joseph D. Thomas, Eric Waltenburg, Christine Wuenschel,

APOLOGIES FOR ABSENCE RECEIVED FROM: Christopher R. Agnew, Suzanne C. Bart, Christopher K. Belous, Emad Elwakil, Kevin D. Gibson, Margaret Gitau, Chong Gu, Timothy B. Lescun, Troy D. Janes, Judith Lewandowski, Chenn Zhou

ABSENCES: Raida Abuizam,

GUESTS: Debbie Fellure, April Ginther, Sharry Vahed, Korena Vawter

I. MINUTES
The April 2021 Graduate Council meeting minutes were approved via the Qualtrics Survey.

II. DEANS REMARKS AND REPORTS

Dean Linda Mason

- Welcomed all new members of the Graduate Council and all returning members.
- Continuing coffee hour with graduate students both virtual and online. Welcomed undergraduate students to let them know about Graduate School.

- Discussions last year to implement the growth of the Graduate Council. The council meetings are informational with discussions because it is important that each departments perspective is heard. With each department being represented on the Graduate Council, the ability to spread the information back to each unit can be shared. When there is no representation from each department those departments may not receive the information discussed at the Graduate Council meetings. The council will continue to grow in the future. Virtual allows us to do this because it is hard to find a room large enough to accommodate the Council as it grows.
- Email was sent to graduate students that they will be pulled for surveillance testing. 1,800 graduate students were pulled for the first round. Graduate students who have not been vaccinated could be pulled for surveillance testing. Graduate students who have been vaccinated will need to upload their vaccination cards. Vaccination cards in another language will need to be translated.
- January 19, 2022 will be the kickoff for January as Graduate Mentoring month. There will be keynote speakers, online workshops, and face-to-face workshops coming from the faculty and student perspective. There is a small growth of abusive mentoring. We want students to understand what mentoring expectations are, figure out what good mentoring is, how to get it and how to help faculty be better mentors to help students.
- The budget for the Equity Task Force work came through for specific programs in the Office of Graduate Diversity. Dr. Kevin Gibson, Associate Dean of the Graduate School along with Dr. Barrett Caldwell who is on the Equity Task Force with a half time appointment in the Graduate School and the other half on faculty issues looking at what we need to help the African Americans experience in graduate school.
- A 14% increase for graduate enrollment on the West Lafayette campus with a 20% increase in international students. A large part of that growth was the online student population. Sixteen percent underrepresented minorities in our graduate population and nearly 5.5% African American students (went from 333 to 377).
- There was a hate crime against an Asian student recently. Dean Mason along with Dr. Kevin Gibson sent out a strongly worded message that hate does not belong at Purdue University, and certainly against any of our population of students. Dean Mason will be reaching out to our Asian students this week.
- There will be more conversations about mental health this year with the Graduate Council. It is most distressing to find out that a graduate student committed suicide this week who had passed their qualifying exam and another graduate student who had taken a year off from graduate studies has also committed suicide in the past few days. We need to give better training in mentoring for faculty to understand how to have conversations and how to read the signs of students when they are feeling stressed in order to intervene earlier. Part of the work we will be doing is how we can provide better mental health services and support services for all students.

- A graduate student is working on a research project on mentoring and abusive mentoring about students telling their stories. There are situations when undue stress is imposed on students. The idea of mentoring research deliverables that faculty are being asked to do is that we do not give clear expectations to students. When we do not give clear expectations that causes stress because students are not sure what they should be doing. The point of the research deliverables is to have that conversation every semester to have an understanding of what those expectations are before the end of the semester in what a student is to do and how a student will be evaluated.
- Dean Mason asked to have encouragement from the Council to have those discussions with their faculty on: 1) What does mentoring look like in their discipline? 2) What do faculty in the department hold as the standards for what mentoring should be? 3) Having those discussions because it is related to discipline and culture within a department and students reside within that department in that culture. Accountability falls within the faculty to have an understanding where that expectation falls so that the student knows. This helps to alleviate some stress as well as understanding the resources.
- Last year the Taskforce on Stipends and Housing recommendation was to increase the minimums. Another stress for graduate students is the financial stress. A proposal to Fiscal Budget and Planning has been submitted to the Provost to request that the minimum stipend be raised from $19,000 to $25,000 in five years. That allows departments and colleges to plan for that and also granting where proposals are going to support that. It is a 6% raise every year for the next five years rather than a 3% raise. We have the numbers to understand how the model will work and how many students are at minimum this year and when we raise it 6% next year and what proportion they will automatically be raised up to the new minimum. We capture a new group of students each year so that it grows a little bit of the students we capture into who will now be below the minimum. We are waiting to hear back from Fiscal Budget and Planning in order that this can get the full Board approval as a cost to the institution and move through the entire system. This may help with the housing situation that will allow graduate students to get housing. We continue to work with Blackbird Farms to negotiate additional housing opportunities for graduate students to live close to campus.
- Purdue Office of Legal Counsel came up with new policy on employment for graduate students. Background information related to Curricular Practical Training (CPT) was also added. The new policy information may be found in the Graduate Staff Employment Manual on page 17. https://www.purdue.edu/gradschool/documents/gpo/graduate-student-employment-manual.pdf

III. AREA COMMITTEE REPORTS (Area Committee Chairs)
Graduate Council Document 21J, Graduate Council Documents Recommended for Approval. See Appendix B. Voted via Qualtrics survey. Qualtrics Proposals Approved by the GC Voting Members. See Appendix E.

IV. PURDUE GRADUATE STUDENT GOVERNMENT -- PRESIDENT'S REPORT
Madelina Nuñez, President of the Purdue Graduate Student Government (PGSG) presented the following information.

- Resolutions passed within the Senate on Wednesday, September 15th:
  - FA21-R002 - "*Mental Health Action Week to be recognized on Official Purdue University Calendar"*
  - FA21-B001 – "*Establishment of the Purdue Graduate Student Government Public Relations Committee"*

- PGSG Campus Partners Newsletter
  - Introducing a bimonthly newsletter to be addressed to campus partners.
  - PGSG wants to improve the visibility of Purdue graduate student resolutions, initiatives, and key events. This will be a streamlined newsletter that focuses on keeping graduate students at the forefront of Purdue's mind.
  - One (1) newsletter will be released in each of the following months: October, December, February, and April
  - PGSG is asking that everyone become a PGSG Campus Partner by signing up. Tina will send the information.

- PGSG has undergone a complete rebranding this past summer. Fellow graduate students have updated the logos and website. PGSG is excited for National Hispanic Heritage Month with the new celebratory logo. Tina will send information.

- Recent messaging
  - We Stand with Asian Boilermakers
  - You are not alone – it is okay to reach out for help
  - Ensuring that graduate students comply with Protect Purdue
    - Stand alone announcement
    - Social media
  - Free Preventative Health Screening and Flu Shots for graduate students

- PGSG Calendar 2020-2021
  - Key upcoming events:
    - Biweekly CAPS Drop in Sessions throughout Fall 2012

- PGSG and PSG immigration Attorney Informational Sessions and Consultation Sessions
- PGSG Fall Picnic @ Krach Lawn on Thursday, September 24th from 5-8 pm
- PGSG Homecoming Alumni Breakfast at the PGSC on Saturday, October 2nd from 8:30 - 10:30 am
- PGSG Mental Health Action Week (Graduate Focused) on Monday, October 4th – Friday, October 8th
- PGSG Fall Career Fair on Wednesday, October 20, 2021
  PGSG Speaker Series: Dr. Ronni Sanlo in the PMU South Ballroom on Thursday, October 21st from 6:00 - 7:30 pm

  - Everyone is welcome to attend. Please share with those who may be interested

- PGSG has partnered with ACE Food Pantry to have Purdue Graduate Student Center to be an ACE Pop-Up Shop with weekly re-stocks on food and supplies every Thursday

- PGSG Emergency Needs Grant
- Affordable Housing

V. NEW BUSINESS

a) Dr. James Mohler presented GC Doc 21-H, Purdue University Authorship Standard. The document will go to the Council for approval and will then go to the Senate for consideration. (See Appendix C).

VI. OLD BUSINESS

a. Dr. James Mohler presented GC Doc 21-G, Guidelines for Conducting Remote Thesis And Dissertation Defenses. The Graduate Council will need to consider adopting permanent distance capability for conducting remote thesis and dissertation defenses this Fall. (See Appendix D).

The council meeting was adjourned by Dean Mason at 3:35 p.m.

Linda J. Mason, Chair
Tina L. Payne, Secretary

APPENDIX A

PENDING DOCUMENTS

(September 2021)

BOLDED ITEMS ARE IN REVIEW WITH AN AREA COMMITTEE

Area Committee A, Behavioral Sciences (G. Jonathan Day, chair; gjday@purdue.edu):
Graduate Council Document 21-27a, **TLI 54000, Smart Manufacturing Enterprise: Organizational Behavior And Leadership In The Digital Enterprise (PWL)**

Area Committee B, Engineering, Sciences, and Technology (John A. Springer, chair; jaspring@purdue.edu):
Graduate Council Document 21-10c, **CNIT 51900, Natural Language Technologies (PWL)**
Graduate Council Document 21-10d, **CNIT 69100, Natural Language In Information Assurance, Security, And Privacy (PWL)**
Graduate Council Document 21-26a, **CS 57600, Machine Learning (PFW)**
Graduate Council Document 21-7c, **ME 55401, Design For IP Protection And Commercialization (IUPUI)**

Area Committee C: Chemistry, Engineering, and Physical Sciences, Margret Gitau, chair; mgitau@purdue.edu):
Graduate Council Document 21-20d, **CHE 56400, Organic Electronic Materials And Devices (PWL)**

Area Committee D, Humanities and Social Sciences (Jill Suitor, chair; jsuitor@purdue.edu):
Graduate Council Document 21-16a, **AMST 60600, American Studies Methods (PWL)**

Area Committee E: Life Sciences, (Timothy Lescun, chair; tlescun@purdue.edu):
Graduate Council Document 21-28a, **FNR 59000, Introduction To Teaching In Natural Resources (PWL)**
Graduate Council Document 21-28b, **FNR 59100, Teaching In Natural Resources Practicum (PWL)**

Area Committee F, Management Sciences (Chair TBD):
Graduate Council Document 21-4de **MGMT 65330, HR Strategy (PWL)**
Graduate Council Document 21-4df **MGMT 65390, HR Analytics (PWL)**
Graduate Council Document 21-4dg **MGMT 65410, Training And Development (PWL)**
Graduate Council Document 21-4d, **MGMT 65460, Talent Acquisition (PWL)**
Graduate Council Document 21-4dh **MGMT 65470, Talent Management (PWL)**

DEGREE(S):

Area Committee A, Behavioral Sciences (G. Jonathan Day, chair; gjday@purdue.edu):
***Graduate Council Document* 21-39a, New Degree in Educational Specialist, submitted by the Department of Education, PFW**

MAJOR(S):

Area Committee C: Chemistry, Engineering, and Physical Sciences, Margaret Gitau; chair, mgitau@purdue.edu):
***Graduate Council Document 21-47a,* Graduate Major in Applied Geospatial Data Analytics and Strategic Communications, submitted by the Graduate School Administration, PWL**

CERTIFICATE(S):

Area Committee F, Management Sciences Area Committee Chair (TBD):
***Graduate Council Document 21-51a,* Graduate Certificate in Nonprofit Management, submitted by the Department of Criminal Justice and Public Administration, PFW**

APPENDIX B

GC Document 21-J

DOCUMENTS RECOMMENDED FOR APPROVAL
BY THE GRADUATE COUNCIL
SEPTEMBER 2021

GRADUATE COURSE PROPOSALS:

Area Committee A, Behavioral Sciences (G. Jonathan Day, chair; gjday@purdue.edu):

Graduate Council Document 21-27a, **TLI 54000, Smart Manufacturing Enterprise: Organizational Behavior And Leadership In The Digital Enterprise** (PWL) Sem. 1 and 2. SS. Distance. Credit 3.
Smart manufacturing is about increasing efficiency and eliminating pain points in your system. It's characterized by a highly connected, knowledge-enabled industrial enterprise where all organizations and operating systems are linked, leading to enhanced productivity, sustainability, and economic performance. Implementing smart manufacturing techniques requires an effective understanding of organizational behavior and leadership skills required for the new digital enterprise. This knowledge of individuals' perceptions, attitudes, and behavior enables leaders to choose appropriate leadership styles and managerial practices to increase organizational effectiveness and positive human outcomes. This course will provide an overview of organizational behavior and leadership concepts important for implementing change within a smart manufacturing enterprise. Typically offered Fall Spring Summer.
https://purdue.curriculog.com/proposal:12782/form

Area Committee B, Engineering, Sciences, and Technology (John A. Springer, chair; **jaspring@purdue.edu**):
Graduate Council Document 21-10c, **CNIT 51900, Natural Language Technologies** (PWL) Sem. 1 and 2. SS. Lecture 2 times per week for 75 minutes. Credit 3.

This course serves as an introduction to natural language processing with the focus on current and emerging technologies and applications. The topics will review the state of the art of natural language processing, discuss their advantages and disadvantages for computational language processing, and look at some case studies. The assignments will range from pen and paper analysis to actual computational implementations. Typically offered Fall, Spring, Summer.
https://purdue.curriculog.com/proposal:14205/form

Graduate Council Document 21-10d, **CNIT 69100, Natural Language In Information Assurance, Security, And Privacy** (PWL) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3.

This course will serve as a seminar in natural language applications with the emphasis in information assurance, security, and privacy. The topics will review the state of the art of general information assurance, security, and privacy with the focus on natural language text and information received from and implied in it. The course will focus in a wide range of papers describing various techniques and applications, with identifiable advantages and disadvantages. The assignments will range in class paper presentations to group projects and written reports. Typically offered Fall Spring.
https://purdue.curriculog.com/proposal:14644/form

Graduate Council Document 21-26a, **CS 57600, Machine Learning** (PFW) Sem. 1 and 2. Lecture 1 time per week for 150 minutes. Credit 3.

Machine Learning is concerned with computer programs that "automatically" improve their performance through experience (based on data). As an introductory course to machine learning, the course introduces the fundamentals of modern machine learning. It will give a broad overview of many concepts and algorithms in machine learning, ranging from supervised learning to unsupervised learning. Topics include decision tree learning, instance-based learning, perceptron and linear modeling, probabilistic modeling, neural networks, support vector machines, ensemble learning, learning theory, and unsupervised learning with clustering. This course will provide a combination of theoretical knowledge and practical, hands-on experience in solving real-world problems through the application of machine learning. Basic computer science concepts, data structure, algorithm, programming experience, knowledge of linear algebra, basic statistics, and probability is required.
https://purdue.curriculog.com/proposal:15353/form

Graduate Council Document 21-7c, **ME 55401, Design For IP Protection And Commercialization** (IUPUI) Sem. 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisites: Undergraduate engineering/technology design coursework or instructor permission.

Present topics of intellectual property (IP) such as copyright, trademark, and trade-secret, topics directed to patents including a thorough introduction to subject matter eligibility, novelty, and non-obviousness as well as topics related to enablement and written description requirements of a patent and how each of these concepts can affect design choices. Learn how to navigate patent databases. Develop patentable designs, as well as designs that do not infringe on existing IP. Learn about technology commercialization from an IP perspective.
https://purdue.curriculog.com/proposal:14976/form

Area Committee C: Chemistry, Engineering, and Physical Sciences, Margaret Gitau; chair, mgitau@purdue.edu):

Graduate Council Document 21-20d, **CHE 56400, Organic Electronic Materials And Devices** (PWL) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3.
Prerequisite(s): CHM 26100 or equivalent (CHM 25500 or CHM 25700)

This course introduces the synthesis, optoelectronic properties, transport physics, and device operation of organic and hybrid electronic materials and devices. This course will review how the molecular architecture of small molecule and polymer semiconductors can be tuned to alter the optoelectronic properties of the materials in solution and in the solid state. A number of relevant materials interactions will be covered, including: photoexcitation and recombination, intermolecular charge transport mechanisms, and energy transfer processes. Additionally, we will observe how these processes are relevant to applications such as organic field-effect transistors (OFETs), organic light-emitting diodes (OLEDs), organic photovoltaic (OPV) devices, and organic memory elements. Finally, a new type of organic-inorganic hybrid material called hybrid halide perovskite will be introduced. Typically offered Fall Spring.
https://purdue.curriculog.com/proposal:16291/form

Area Committee E: Life Sciences, (Timothy Lescun, chair; tlescun@purdue.edu):

Graduate Council Document 21-28a, **FNR 59000, Introduction To Teaching In Natural Resources** (PWL) Sem. 1 and 2. Lecture 1 time per week for 50 minutes. Credit 1. Prerequisite(s): Graduate status in FNR or instructor approval.

This applied course introduces topics related to teaching science courses to facilitate and support the success of teaching assistants in Forestry and Natural Resources. Students will read and review assigned readings and then participate in a discussion at a weekly class meeting. Students also will have an opportunity to practice and apply concepts through development and presentation of a lesson plan. Permission of instructor required.
https://purdue.curriculog.com/proposal:16781/form

Area Committee F, Management Sciences Area Committee Chair (TBD):
Graduate Council Document 21-4de **MGMT 65330, HR Strategy** (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

Survey of theory and techniques used in human resource management within organizations. Emphasis is placed on HRM, Strategic HRM, Managing Human Resources Globally, and Strategically Managing Human Resource Functions.
https://purdue.curriculog.com/proposal:16914/form

Graduate Council Document 21-4df **MGMT 65390, HR Analytics** (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course provides an introduction to the field of HR analytics. HR Analytics is an advanced set of data analysis methodologies, tools and metrics for comprehensive workforce performance measurement and improvement. The objective of HR analytics is to drive evidence-based decisions and action in the workplace. In addition to your instructor, you may hear from expert practitioners and corporate leaders who have "been there and done that" leveraging a myriad of HR analytics along the way. We will also review (and hopefully expand) your understanding of handling data including conceptualizing models, identifying key metrics,

collecting data, analyzing data, and presenting data in ways that tell a powerful story. Throughout our course, I will infuse consulting concepts, methodologies, and lessons learned that combined with your analytic skills will help you to effectively serve as an HR Business Partner (internal HR consultant).
https://purdue.curriculog.com/proposal:16917/form

Graduate Council Document 21-4dg **MGMT 65410, Training And Development** (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course prepares students to design training and develop training programs and to identify principles, practices and methods of staff training and career development. Students will learn and practice how to deliver and evaluate said programs for return on investment (ROI). Emphasis is placed on the application of principles related to adult learning, instructional design and program development, evaluation and learning technologies. Specific objectives include topics related to communication, diversity, generational differences and group dynamics.
https://purdue.curriculog.com/proposal:16919/form

Graduate Council Document 21-4d, **MGMT 65460, Talent Acquisition** (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course focuses on the effective management of the flow of talent into and through organizations. It covers workforce planning, recruiting and selection, career transitions, and other workforce movements. It is designed to teach students the skills to recruit and select the best talent to help drive organizational strategy. Students will also learn how to design a process and framework for final individual or group selection. Lastly, they will learn several strategies to successfully orient and onboard new employees.
https://purdue.curriculog.com/proposal:16730/form

Graduate Council Document 21-4dh **MGMT 65470, Talent Management** (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course focuses on the employer-employee relationship and how managers work with employees to improve their performance. Attention is given to Talent, Talent Management, and Performance Management in work settings, with an emphasis, however, on contemporary approaches to managing the employer-employee relationship and the systems for managing talent. Various definitions of Employee Engagement will be explored, along with how it is, measured, and why it is so important to your organization. Finally, various methods to engage employees in the organization will be studied.
https://purdue.curriculog.com/proposal:16915/form

CERTIFICATE(S):

Area Committee F, Management Sciences Area Committee Chair (TBD):

Graduate Council Document 21-51a, Graduate Certificate in Nonprofit Management, submitted by the Department of Criminal Justice and Public Administration, PFW
https://purdue.curriculog.com/proposal:17182/form

APPENDIX C

Authorship of Scholarly Works (S-_)

Standard: [University Policy Office will complete]
Responsible Executive: Provost and Executive Vice President for Academic Affairs and Diversity
Responsible Office: Research Integrity Office
Date Issued: [University Policy Office will complete]
Date Last Revised: N/A

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CONTACTS

Clarification of Standard		
Title/Office	**Telephone**	**Email/Webpage**
Research Integrity Officer	765-496-3844	researchintegrity@purdue.edu

INDIVIDUALS AND ENTITIES AFFECTED BY THIS STANDARD

All Purdue Associates who make a scholarly contribution to research or the reporting of research in scholarly works.

STATEMENT OF STANDARD

Accuracy of authorship attribution is paramount to scholarly integrity and maintaining the public trust in the research and scholarship generated from Purdue University. Attribution of authorship is as critical to the integrity of the publication record as the reported methodology, interpretation or conclusions. Inaccurate identification of authors harms the participating scholars and the credibility of the research and the institution.

DRAFT

This standard affirms the university's commitment to research and scholarship integrity as represented by listed authors and associated acknowledgement sections. This standard and its requirements are rooted in, and informed by, Purdue's overarching Statement of Integrity and Code of Conduct.

Suitable Authorship Practices

All Purdue Associates are required to list authors of scholarly works in accordance with authorship norms commonly accepted within a particular domain of scholarship and in accordance with the following:

1. List authors accurately and completely;
2. Do not list any gift authors, guest authors or ghost authors (see Unacceptable Authorship Practices below); and
3. Apportion credit fairly and accurately (through the order of authorship or other means).

This standard applies to all situations that include, or allegedly should include, a Purdue Associate as a co-author.

Authorship Defined

Many organizations, journals and conferences publish guidelines for author identification. In the absence of such a guideline, include authors based upon the following from the Committee on Publication Ethics (COPE):

1. Substantial contribution to the work (e.g., conception, design, acquisition, analysis or interpretation); and
2. Accountability for the work that was done and its review, approval and presentation in a publication.

At Purdue University, substantial contribution to a work that deserves credit as an author requires both material participation and intellectual contribution. Credit for Co-author is expected when an individual both materially participates in a research project and provides intellectual contribution for which a resulting publication would suffer if it were lacking.

Acknowledgements may be used to denote contributions to the work that do not meet the criteria of authorship, such as supporting the study, general mentoring, acting as study coordinator and other related auxiliary activities.

Author Order

The meaning of author order may vary by discipline or publication. Purdue Associates are encouraged to follow discipline or source conventions in the ordering of authors. Typically, the order of authorship conveys level of contribution. If there is equal involvement, authors are often ordered alphabetically by surname.

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Where there is no prevailing convention and authorship is unequal, Purdue Associates should strive for correct representation based on contribution to the work. It is encouraged that Purdue Associates discuss and agree upon authorship and author order at the outset of a project.

Unacceptable Authorship Practices

Purdue Associates are required to avoid any manipulation of author identification to mislead the reader. In particular, the following practices are unacceptable:

1. Gift authorship – co-authorship given as reward or repayment to someone who did not contribute significantly to a work; "quid pro quo" authorship.
2. Guest authorship – co-authorship given due to reputation or influence to increase the potential for acceptance of the publication, when the co-author did not contribute significantly to the work; "honorary" authorship.
3. Ghost authorship – concealment of an author's hand in the research or report of research.

Resolution of Authorship Disputes

A Purdue Associate who experiences an inaccurate or omitted authorship identification is encouraged to seek satisfactory resolution from the lead author or Corresponding author. If attempts to resolve the issue fail, the associate may report the concern in writing to the Research Integrity Officer.

The Research Integrity Officer will identify an appropriate faculty member from the Faculty Mediation Committee to mediate among authors to obtain a voluntary resolution unless a faculty member external to that group provides unique situational or discipline-specific perspective germane to the situation. For a concern reported by a Purdue Associate who is a graduate student, the mediator may be the director of graduate studies in the student's academic unit. If a voluntary resolution is not reached, the Research Integrity Officer will, in consultation with the Office of Provost, refer the dispute to an appropriate academic head or dean to advise the Office of the Provost on an appropriate resolution.

In the event that an authorship dispute includes individuals outside Purdue University, the Research Integrity Officer will coordinate with the Office of the Provost and the relevant external parties to find an appropriate resolution.

In the event that a credible allegation of plagiarism exists in addition to the authorship dispute, the allegation will be subject to review under the University's policy on Research Misconduct (III.A.2).

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RESPONSIBILITIES

Purdue Associates

- Understand this standard and use it as a guide for establishing authorship credit, author order and appropriate acknowledgement in all scholarly activities.
- Report in good faith inaccurate, omitted or unacceptable authorship information as outlined in this standard.
- Abstain from the unacceptable practices of gift, guest and ghost authorship.
- Communicate this standard to other Purdue Associates in the course of research work and graduate advising at Purdue University.
- When requested, work with Purdue officials to resolve authorship disputes.

Dean/Associate Dean and School/Department Head/Chair

- Understand this standard and use it as a guide for establishing authorship credit, author order and appropriate acknowledgement in all scholarly activities.
- Report in good faith inaccurate, omitted or unacceptable authorship information as outlined in this standard.
- Using this standard as a guide, assist in resolving authorship disputes.

Provost

- With guidance from the RIO, assign an academic head or dean to mediate and propose an authorship dispute resolution if faculty mediation fails to resolve the situation.
- When disputes involve external parties, work with the RIO to assign an appropriate individual to mediate and propose an authorship dispute resolution.

Research Integrity Officer

- Administer this standard.
- Receive reports of inaccurate, omitted or unacceptable authorship information as outlined in this standard and coordinate resolution of authorship disputes.

DEFINITIONS

All defined terms are capitalized throughout the document. Refer to the central Policy Glossary for additional defined terms.

Acknowledgment
Recognition of a participant whose involvement does not meet the discipline's recognized criteria for authorship.

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Co-author
A participant whose contribution to a scholarly work meets the discipline's recognized criteria for authorship.

Corresponding Author
Sometimes also called primary author; a participant who takes primary responsibility for the submission and communication with the publisher and responds to any questions about the work during and after publication.

Principal Investigator
Principal Investigator is the primary individual responsible for the preparation, conduct, and administration of a research grant, cooperative agreement, training or public service project, contract, or other sponsored project in compliance with applicable laws and regulations and institutional policy governing the conduct of sponsored research.

Purdue Associate
See definition in the policy on Research Misconduct (III.A.2).

Research Misconduct
See definition in the policy on Research Misconduct (III.A.2).

RELATED DOCUMENTS, FORMS AND TOOLS

This standard is issued in support of the policy on Research Misconduct (III.A.2), as amended or superseded.

Authorship Determination Scorecard (PDF): A score sheet for quantifying contributions to a project to determine order of authorship.

Authorship Tie-breaker Scorecard (PDF): A score sheet used when two or more people achieve the same score on the authorship determination scorecard.

HISTORY AND UPDATES

[TBD]: This is the first standard to address this issue.

APPENDIX

There are no appendices to this standard.

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APPENDIX D

PURDUE UNIVERSITY | The Graduate School
ADVANCE TO A HIGHER DEGREE

Guidelines for Conducting Remote Thesis and Dissertation Defenses

In response to the COVID-19 pandemic, the Purdue University Graduate School modified the policy requiring thesis and dissertation defenses to be conducted in a face-to-face modality. After surveying faculty and students in the fall of 2020 on the effectiveness and convenience of this approach, the Graduate School is planning to extend this exception, possibly permanently, pending approval by theGraduate Council. Likely a decision concerning the permanence of this practice will be decided in thefall of 2021.

In the meantime, the guidelines in this document are being provided to create a set of shared expectations and guidance across campus. It is our hope that the information contained herein assists faculty advisors/chairs, graduate students and committees as plans are made for upcoming defenses.

Faculty Advisors/Chairs

Before the defense

- Work with the student to determine the best video conference software to use (Zoom, WebEx orTeams). Zoom is recommended. It is best if the faculty advisor creates the invitation and sends it out via Outlook to the student and all committee members.
- The faculty advisor/chair should be the host of the meeting and if possible, set up a "waiting room" or similar feature to facilitate private discussions amongst the committee members and tomanage who can get into the meeting. You may need to set preferences in the software to enablethis.
- Consider making at least one other committee member a host or co-host at the meeting.
- Ensure you know how to permit the student to share their slides and/or control the screen.
- Consider offering a practice run with your student to ensure the technology works and create abackup plan for how you might communicate if the technology fails (for example, texting or a voice call).
- A day before the defense, check in with committee members to ensure they have the information they need to access the meeting. Encourage

- them to wear headphones in themeeting to reduce noise, feedback and echoes.
- Ask the candidate if they plan to invite guests; have them provide you a list of names ahead oftime.
- With the increased security concerns of video conferencing, you may want to check the latestinformation provided by ITaP:
    - Zoom: https://www.itap.purdue.edu/zoom/
    - WebEx: https://itap.purdue.edu/services/webex.html
    - Teams: https://www.itap.purdue.edu/services/microsoft-teams.html

At the defense

- If possible, start the virtual defense at least 15 minutes before the scheduled start time and checkwith the candidate to ensure that the audio and video are working correctly.
- At the beginning of the meeting, have the members of the committee introduce themselves,which provides an opportunity to test microphones, speakers and cameras.
- Introduce the candidate as you would in a face-to-face meeting.
- To begin the defense, provide instructions to the candidate, committee and any guests as to theorder, etiquette and expectations of the meeting:
    - Microphones and cameras – Committee mics muted (recommended)? Cameras on or off?
    - Order of events – presentation, questions, deliberation, etc.
    - Questions - can they be provided during the presentation? Via audio, chat or handraising?
    - Public guests - Dismissed at some point or placed in a waiting room?
    - How will the committee privately deliberate?
    - How will results be communicated to the candidate?
    - What is the plan if a committee member or the candidate momentarily drop off themeeting?
    - If "board" work is expected of the candidate, makes sure plans are made to accommodatethis option.
    - If part of the committee is virtual and part is in the room, how will discussion occur?
- At the end of the meeting, remind committee members that they will receive electronic forms tocomplete in the Graduate School Database.

Committee Members

- All committee members are responsible for ensuring that they know how to use the chosenconferencing platform (Zoom, WebEx, or Teams) in advance of the defense.
- As with all video conference meetings, please ensure you remain muted and are in a distractionfree location.
- If needed, contact the faculty advisor/chair to do a practice run of the meeting to ensure yourtechnology is functioning correctly.

Candidate Defending

Before the defense

- Work with your graduate coordinator to complete the Graduate School Form 8: Request forAppointment of Examining Committee at least two weeks before the defense.
- Coordinate with your major advisor/chair on the video conference software being used (Zoom,WebEx, or Teams) and make sure you know how to use the software.
- Conduct a practice run with another graduate student to make sure your technology works andthat you are prepared for the presentation.
- Consider requesting a practice run with your major advisor/chair.
- Talk with your advisor about how questions will be handled: Chat? Raise hand? Vocally? Duringthe presentation or at the end of the presentation?
- Share your slides with at least your advisor so that they can run them from their computer ifsomething goes wrong on your end.
- Ask your major advisor/chair about the agenda for the meeting and how you will “step out” ofthe meeting during the committee deliberation period.
- Inform your major advisor/chair about any guests you are expecting to attend the meeting. If you plan to share a URL for the meeting (such as with Zoom or WebEx) do not post it broadly (for example, on Facebook) because it may increase the odds of a “Zoom bomber” or other suchevent.
- Plan your environment for the defense:
    - Reduce visual distractions (avoid glare, shadow, or an overly cluttered backdrops).
    - Make sure you are properly illuminated and can be seen without a shadow (use a ringlight if possible).

- Make sure you are in a quiet area that will not have distractions.
- If possible, use a computer that has two monitors so that you may see your slides andyour committee at the same time.
- If board work is expected, make sure you have the ability to accomplish this – ask and plan in advance.

At the defense

- Log onto the meeting at least 15 minutes before the scheduled start time.
- When delivering your presentation, make sure there is a good view of you in the camera from the shoulders up. The camera should be at eye level (not above looking down nor below lookingup).
- If possible, stand as you present to enable better gestures and non-verbal cues. Even if sitting,remember to use gesture and non-verbals.
- Remember to look at the camera when speaking rather than a computer screen or other areaaway from the camera.
  When sharing your screen, it is best to share a specific application window (such as PowerPoint)rather than the entire screen to avoid inadvertently sharing something you don't intend to.

For all participants (including "public" participants)

- Respect your colleagues and don't multitask during the defense.
- Latency creates delays in response; pause before speaking and yield conversational right of way.
- Reduce visual distractions (avoid glare, shadow, or an overly cluttered backdrops).
- Use headphones, if possible, to reduce any potential background noise, feedback or echoes.

Facial expressions and gestures are often more effective than audio. Use these more frequently.

This guidance has been adapted from The University of Maryland Graduate School's "Advice forRemote Dissertation/Thesis Defenses".

APPENDIX E

QUALTRICS PROPOSALS APPROVED BY THE GC VOTING MEMBERS SEPTEMBER 2021

GRADUATE COURSE PROPOSALS:

Area Committee A, Behavioral Sciences (G. Jonathan Day, chair; **gjday@purdue.edu**):

Graduate Council Document 21-27a, TLI 54000, Smart Manufacturing Enterprise: Organizational Behavior And Leadership In The Digital Enterprise (PWL) Sem. 1 and 2. SS. Distance. Credit 3.

Smart manufacturing is about increasing efficiency and eliminating pain points in your system. It is characterized by a highly connected, knowledge-enabled industrial enterprise where all organizations and operating systems are linked, leading to enhanced productivity, sustainability, and economic performance. Implementing smart manufacturing techniques requires an effective understanding of organizational behavior and leadership skills required for the new digital enterprise. This knowledge of individuals' perceptions, attitudes, and behavior enables leaders to choose appropriate leadership styles and managerial practices to increase organizational effectiveness and positive human outcomes. This course will provide an overview of organizational behavior and leadership concepts important for implementing change within a smart manufacturing enterprise. Typically offered Fall Spring Summer.
https://purdue.curriculog.com/proposal:12782/form

Area Committee B, Engineering, Sciences, and Technology (John A. Springer, chair; **jaspring@purdue.edu**):

Graduate Council Document 21-10c, CNIT 51900, Natural Language Technologies (PWL) Sem. 1 and 2. SS. Lecture 2 times per week for 75 minutes. Credit 3.

This course serves as an introduction to natural language processing with the focus on current and emerging technologies and applications. The topics will review the state of the art of natural language processing, discuss their advantages and disadvantages for computational language processing, and look at some case studies. The assignments will range from pen and paper analysis to actual computational implementations. Typically offered Fall, Spring, Summer.
https://purdue.curriculog.com/proposal:14205/form

Graduate Council Document 21-10d, CNIT 69100, Natural Language In Information Assurance, Security, And Privacy (PWL) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3.

This course will serve as a seminar in natural language applications with the emphasis in information assurance, security, and privacy. The topics will review the state of the art of general information assurance, security, and privacy with the focus on natural language text and information received from and implied in it. The course will focus in a wide range of papers describing various techniques and applications, with identifiable advantages and disadvantages.

The assignments will range in class paper presentations to group projects and written reports. Typically offered Fall Spring.
https://purdue.curriculog.com/proposal:14644/form

Graduate Council Document 21-26a, CS 57600, Machine Learning (PFW) Sem. 1 and 2. Lecture 1 time per week for 150 minutes. Credit 3.

Machine Learning is concerned with computer programs that "automatically" improve their performance through experience (based on data). As an introductory course to machine learning, the course introduces the fundamentals of modern machine learning. It will give a broad overview of many concepts and algorithms in machine learning, ranging from supervised learning to unsupervised learning. Topics include decision tree learning, instance-based learning, perceptron and linear modeling, probabilistic modeling, neural networks, support vector machines, ensemble learning, learning theory, and unsupervised learning with clustering. This course will provide a combination of theoretical knowledge and practical, hands-on experience in solving real-world problems through the application of machine learning. Basic computer science concepts, data structure, algorithm, programming experience, knowledge of linear algebra, basic statistics, and probability is required.
https://purdue.curriculog.com/proposal:15353/form

Graduate Council Document 21-7c, ME 55401, Design For IP Protection And Commercialization (IUPUI) Sem. 2. Lecture 2 times per week for 75 minutes. Credit 3.
Prerequisites: Undergraduate engineering/technology design coursework or instructor permission

Present topics of intellectual property (IP) such as copyright, trademark, and trade-secret, topics directed to patents including a thorough introduction to subject matter eligibility, novelty, and non-obviousness as well as topics related to enablement and written description requirements of a patent and how each of these concepts can affect design choices. Learn how to navigate patent databases. Develop patentable designs, as well as designs that do not infringe on existing IP. Learn about technology commercialization from an IP perspective.
https://purdue.curriculog.com/proposal:14976/form

Area Committee C: Chemistry, Engineering, and Physical Sciences, Margaret Gitau; chair, mgitau@purdue.edu):

Graduate Council Document 21-20d, CHE 56400, Organic Electronic Materials And Devices (PWL) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3.
Prerequisite(s): CHM 26100 or equivalent (CHM 25500 or CHM 25700)

This course introduces the synthesis, optoelectronic properties, transport physics, and device operation of organic and hybrid electronic materials and devices. This course will review how the molecular architecture of small molecule and polymer semiconductors can be tuned to alter the optoelectronic properties of the materials in solution and in the solid state. A number of relevant materials interactions will be covered, including: photoexcitation and recombination, intermolecular charge transport mechanisms, and energy transfer processes. Additionally, we will observe how these processes are relevant to applications such as organic field-effect

transistors (OFETs), organic light-emitting diodes (OLEDs), organic photovoltaic (OPV) devices, and organic memory elements. Finally, a new type of organic-inorganic hybrid material called hybrid halide perovskite will be introduced. Typically offered Fall Spring.
https://purdue.curriculog.com/proposal:16291/form

Area Committee E: Life Sciences, (Timothy Lescun, chair; tlescun@purdue.edu):

Graduate Council Document 21-28a, FNR 59000, Introduction To Teaching In Natural Resources (PWL) Sem. 1 and 2. Lecture 1 time per week for 50 minutes. Credit 1. Prerequisite(s): Graduate status in FNR or instructor approval.

This applied course introduces topics related to teaching science courses to facilitate and support the success of teaching assistants in Forestry and Natural Resources. Students will read and review assigned readings and then participate in a discussion at a weekly class meeting. Students also will have an opportunity to practice and apply concepts through development and presentation of a lesson plan. Permission of instructor required.
https://purdue.curriculog.com/proposal:16781/form

Area Committee F, Management Sciences Area Committee Chair (TBD):

Graduate Council Document 21-4de MGMT 65330, HR Strategy (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

Survey of theory and techniques used in human resource management within organizations. Emphasis is placed on HRM, Strategic HRM, Managing Human Resources Globally, and Strategically Managing Human Resource Functions.
https://purdue.curriculog.com/proposal:16914/form

Graduate Council Document 21-4df MGMT 65390, HR Analytics (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course provides an introduction to the field of HR analytics. HR Analytics is an advanced set of data analysis methodologies, tools and metrics for comprehensive workforce performance measurement and improvement. The objective of HR analytics is to drive evidence-based decisions and action in the workplace. In addition to your instructor, you may hear from expert practitioners and corporate leaders who have "been there and done that" leveraging a myriad of HR analytics along the way. We will also review (and hopefully expand) your understanding of handling data including conceptualizing models, identifying key metrics, collecting data, analyzing data, and presenting data in ways that tell a powerful story. Throughout our course, I will infuse consulting concepts, methodologies, and lessons learned that combined with your analytic skills will help you to effectively serve as an HR Business Partner (internal HR consultant).
https://purdue.curriculog.com/proposal:16917/form

Graduate Council Document 21-4dg MGMT 65410, Training And Development (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course prepares students to design training and develop training programs and to identify principles, practices and methods of staff training and career development. Students will learn and practice how to deliver and evaluate said programs for return on investment (ROI). Emphasis is placed on the application of principles related to adult learning, instructional design and program development, evaluation and learning technologies. Specific objectives include topics related to communication, diversity, generational differences and group dynamics.
https://purdue.curriculog.com/proposal:16919/form

Graduate Council Document 21-4d, MGMT 65460, Talent Acquisition (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course focuses on the effective management of the flow of talent into and through organizations. It covers workforce planning, recruiting and selection, career transitions, and other workforce movements. It is designed to teach students the skills to recruit and select the best talent to help drive organizational strategy. Students will also learn how to design a process and framework for final individual or group selection. Lastly, they will learn several strategies to successfully orient and onboard new employees.
https://purdue.curriculog.com/proposal:16730/form

Graduate Council Document 21-4dh MGMT 65470, Talent Management (PWL) Sem. 1 and 2. Lecture (3 Credit) 3 times per week for 90 minutes for 8 weeks. Lecture (2 Credit) 2 times per week for 90 minutes for 8 weeks. Distance or Lecture/Distance Hybrid. Credit 2 or 3.

This course focuses on the employer-employee relationship and how managers work with employees to improve their performance. Attention is given to Talent, Talent Management, and Performance Management in work settings, with an emphasis, however, on contemporary approaches to managing the employer-employee relationship and the systems for managing talent. Various definitions of Employee Engagement will be explored, along with how it is, measured, and why it is so important to your organization. Finally, various methods to engage employees in the organization will be studied.
https://purdue.curriculog.com/proposal:16915/form

CERTIFICATE(S):

Area Committee F, Management Sciences Area Committee Chair (TBD):

Graduate Council Document 21-51a, Graduate Certificate in Nonprofit Management, submitted by the Department of Criminal Justice and Public Administration, PFW
https://purdue.curriculog.com/proposal:17182/form

Graduate Council Summer Committee:

Graduate Council Document 21-32a, Graduate Certificate in Engineering Leadership, submitted by the Department of Technology Leadership and Communication, IUPUI
https://purdue.curriculog.com/proposal:16580/form

Graduate Council Document 21-24a, Graduate Certificate in School Administration, submitted by the School of Education, PFW
https://purdue.curriculog.com/proposal:15071/form

Graduate Council Document 21-25a, Graduate Certificate in Nurse Executive, submitted by the School of Nursing, PNW
https://purdue.curriculog.com/proposal:13982/form

Graduate Council Document 21-36a, Graduate Certificate in Medical and Healthcare Writing, submitted by the Department of English, PWL
https://purdue.curriculog.com/proposal:16971/form

DEGREES(S):

Graduate Council Summer Committee:

Graduate Council Document 21-33a, Master of Science in Athletic Training, submitted by the Department of Health and Kinesiology, PWL
https://purdue.curriculog.com/proposal:15036/form

Graduate Council Document 21-37a, Doctor of Technology, submitted by the College of Technology Administration, PNW
https://purdue.curriculog.com/proposal:15141/form

NEW DOCUMENTS RECEIVED

(After the September 17, 2021 Graduate Council Meeting)

Area Committee A, Behavioral Sciences (G. Jonathan Day, chair; gjday@purdue.edu):

Graduate Council Document 21-55a, **CFT 69500, Research And Writing In Couple & Family Therapy** (PNW) Sem. 1 and 2. Lecture 1 time per week for 150 minutes. Credit 3.

This course provides an introduction to conducting graduate level research and professional writing in couple and family therapy. Students will learn how to critically read empirical articles, conduct a literature search, write professionally using APA format, and write a literature review. Permission of instructor required.

https://purdue.curriculog.com/proposal:17917/form

Graduate Council Document 21-1i, **EDPS 51010, Counseling Children And Adolescents** (PNW) Sem. 1. Lecture 1 time per week for 170 minutes. Credit 3.

The purpose of this course is twofold: 1) to present theories, techniques, and strategies for working with children and adolescents and their families and 2) to provide an in-depth understanding of the etiology, symptomology, assessment, and treatment of child and adolescent psychopathology.

https://purdue.curriculog.com/proposal:17719/form

Graduate Council Document 21-1j, **EDPS 53010, Introduction To Addictions And Psychopharmacology** (PNW) Sem. 1. Lecture 1 time per week for 170 minutes. Credit 3.

A special course in selected area of education in addictions and pharmacology, designed to provide theories and practical knowledge in selected situations related to the candidate's area of specialization. Permission of instructor required.

https://purdue.curriculog.com/proposal:17720/form

Graduate Council Document 21-31d, **PUBH 60000, Professional Development In Public Health Seminar** (PWL) Sem. 1 and 2. Lecture. Meets once a month, four times a semester for 50 minutes. Rest is independent study and open hours with faculty instructor. Credit 0.

A professional development course designed to the meet the needs of MPH students in the Department of Public Health.

https://purdue.curriculog.com/proposal:17399/form

Graduate Council Document 21-31e, **PUBH 69400, Graduate Seminar In Public Health** (PWL) Sem. 1 and 2. Lecture. Meets once a month for 50 minutes. Four meetings per semester. Credit 0.

Seminar course covering a broad range of current research topics in public health and related fields of study. Seminar presentations by representatives from academia, industry, government, other external institutions and organizations, and members of the Purdue University community. Intensive analysis of application of various research and statistical methodologies to the study of public health.

https://purdue.curriculog.com/proposal:17602/form

Graduate Council Document 21-50a, **SLHS 67000, Integrative Audiology Grand Rounds** (PWL) Sem. 1 and 2. Distance. Credit 1.

This course provides advanced audiology students an opportunity to share and think deeply about the complex cases they are experiencing on off-campus placements. Students share cases online with their peer students who will provide thoughtful responses and reflections based on their own experiences. This course also provides a summative assessment of the students' knowledge in the final two years of their education. Due to the highly complex nature of the cases, students must use past clinical experiences and knowledge learned in multiple courses in order to successfully present cases and to respond in thoughtful ways that contribute to the online learning environment. Permission of department required; must also be currently enrolled in SLHS 57900 or SLHS 67900 completing an audiology externship.
https://purdue.curriculog.com/proposal:17406/form

Area Committee B, Engineering, Sciences, and Technology (John A. Springer, chair; jaspring@purdue.edu):

Graduate Council Document 21-42d, **ECE 60422, Primer On RF Design** (PWL) Sem. 1 and 2. SS. Lecture 3 times per week for 50 minutes for 5 weeks per term. Credit 1. Prerequisite(s): ECE 31100 or equivalent.

This course covers the fundamentals of RF design. It is designed as a first course for students or engineers with limited background in high-frequency electronics. Engineers that need to understand the 'RF language' and gain working knowledge of critical RF concepts will benefit from taking this course. Students in this class will learn the basic RF tools and design principles. By the end of this class students will be able to understand important RF concepts and how these are related to the design of practical RF blocks. Typically offered Fall Spring Summer.
https://purdue.curriculog.com/proposal:14255/form

Graduate Council Document 21-42e, **ECE 60423, RF System Design** (PWL) Sem. 1 and 2. SS. Lecture 3 times per week for 50 minutes for 5 weeks per term. Credit 1. Prerequisite(s): ECE 60422.

Following the 'Primer on RF Design' course, this class focuses on system-level issues. We discuss several important design considerations including noise, non-linearity, distortion, sensitivity and dynamic range and their impact in selecting the appropriate system architecture. The course also covers common receiver architectures including superheterodyne and direct-conversion receivers.
https://purdue.curriculog.com/proposal:18106/form

Graduate Council Document 21-42f, **ECE 60424, RF Design: Passive And Active Components** (PWL) Sem. 1 and 2. SS. Lecture 3 times per week for 50 minutes for 5 weeks per term. Credit 1. Prerequisite(s): ECE 60422.

Following the 'Primer on RF Design' course, this class focuses on passive and active components. We use the techniques learnt in the previous course, to design advanced RF devices including couplers, filters and amplifiers. Current research topics are discussed as appropriate.
https://purdue.curriculog.com/proposal:18108/form

Graduate Council Document 21-42g, **ECE 60858, Introduction To Operating Systems** (PWL) Sem. 1. Lecture 3 times per week for 50 minutes. Credit 3.

This course will cover basic design principles of major components of modern Operating Systems: 1. Processes Management: processes, threads, CPU scheduling, inter-process communication, process synchronization, mutual exclusion, deadlocks; 2. Memory Management: dynamic address relocation, segmentation, paging, virtual memory, page replacement algorithms, protection, sharing; 3. File Systems: file system interface, file system implementation, including directories, disk allocation, disk scheduling, memory-mapped files, journaling file system, Network File System; 4. Storage Systems: Disk structure, disk scheduling, swap-space management, RAID. The course will additionally introduce (1) system design principles including extra-level of indirection, optimizing the common case, separation of policy and mechanism, and the principle of locality and caching, (2) advance OS topics such as Network File System, and (3) Case study of a modern OS such as Linux. Students are expected to spend at least three hours per week gaining hands-on experience building major components of a modern time-sharing operating system. Typically offered Fall.
https://purdue.curriculog.com/proposal:14279/form

Graduate Council Document 21-54a, **FMGT 55500, Healthcare Facilities Management** (IUPUI) Sem. 1 and 2. SS. Lecture 1 time per week for 150 minutes for 16 weeks or 1 time per week for 120 minutes for 12 weeks. Credit 3. Prerequisites: ART 51500/FMGT 51500 with a C or better.

This course will provide an overview of hospital layout and associated building elements along with code compliance and functionality. Discussion includes operating rooms, medical/surgical units, OB/labor and delivery, radiology/MRI/CT/emergency department, electrical systems, medical gas systems, HVAC, fire protection, telecommunications/network and maintenance/regulatory requirements.
https://purdue.curriculog.com/proposal:17616/form

Graduate Council Document 21-54b, **FMGT 56000, Emergency Preparedness for Facilities Personnel** (IUPUI) Sem. 1 and 2. SS. Lecture 1 time per week for 150 minutes for 16 weeks or 1 time per week for 400 minutes for 6 weeks. Credit 3.

This course encompasses a broad survey of emergency management topics relevant to facility managers and related personnel. Issues such as mitigation, preparedness, response and recovery, planning, risk assessment, life-safety and regulations, natural disasters and terrorism will be discussed, and opportunities for personalized planning through applied exercises will be utilized to provide enhanced understanding to the student.
https://purdue.curriculog.com/proposal:17735/form

Graduate Council Document 21-54c, **FMGT 59800, Facilities Management Directed Project** (IUPUI) Sem. 1 and 2. SS. Individual Study 1 time per week for 150 minutes for 16 weeks or 1 time per week for 200 minutes for 12 weeks. Variable Credit 1 to 3.

The Directed Project is defined as an applied research project that is more extensive and sophisticated than a graduate-level independent study and less formal than a master's thesis. The overall objective of the requirement is to engage in a facilities management related study focused in industry, business or education. The focus is to be placed on a topic with practical implications rather than original research.
https://purdue.curriculog.com/proposal:16714/form

Graduate Council Document 21-7m, **ME 50810, Introduction To Two Phase Flow And Heat Transfer** (IUPUI) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisite(s): ME 41600.

This course is intended for graduate engineer or scientist who is interested in multiphase flow and heat transfer area (where several different phases of fluids co-exist, e.g. water boiling, combustion and the operation of the power plant). Thermo-fluid transport phenomena in multiphase system will be discussed as well as the methodology and techniques to formulate and solve problems associated with the phenomena. Permission of instructor required.
https://purdue.curriculog.com/proposal:17715/form

Graduate Council Document 21-7n, **ME 55610, Finite Element Method For Fluid Flow And Heat Transfer** (PNW) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisite(s): ME 41600.

This course is intended for the graduate engineer or scientist who is interested in learning the basic principles and foundation of the finite element method. In this course, the finite element method will be discussed utilizing the Galerkin Method of Weighted Residuals approach. Problems will be addressed to illustrate the basics of the numerical scheme. The intent of this course is to demonstrate the wide applicability of the finite element approach especially focus on solving problems in heat transfer, species transport and fluid flow. Permission of instructor required.
https://purdue.curriculog.com/proposal:17716/form

Graduate Council Document 21-7o, **ME 59310, Modeling Of Solar Cells And Batteries** (PNW) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3.

This course is an introductory graduate course on modeling solar cells and batteries based on current research in the field. Topics include 1) Mathematical analysis: Ordinary differential equation, Laplace transform analysis 2) Modeling and simulations with MATLAB/Simulink and COMSOL 3) Applied experiments using data acquisition systems.
https://purdue.curriculog.com/proposal:17684/form

Graduate Council Document 21-7p, **ME 59400, Modeling Of Micro/Nano Materials Systems** (PNW) Sem. 1 and 2. SS. Lecture 2 times per week for 75 minutes. Credit 3.

Students learn how to apply fundamental knowledge of materials science and solid mechanics to the modeling and simulation of nano/micro material systems such as interatomic bonding, crystal structure, crystal orientation, defects, elastic material properties, single vs. polycrystal, and viscoelastic properties. Students learn basic principles of 1) Creating micro/nano material systems: nanowires, nanoparticle-based systems, thin films, and polycrystalline materials 2) Simulating micro/nano material systems using Molecular Dynamics (MD) and Finite Element Method (FEM). 3) High resolution microscopy: AFM and SEM for characterizing micro/nano material systems. Permission of instructor required.
https://purdue.curriculog.com/proposal:17670/form

Graduate Council Document 21-7r, **ME 61700, Applied Thermal Physics And Molecular Spectroscopy** (PWL) Sem. 1 and 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisite(s): ME 20000 or ME 31500 or CHM 12500.

The fundamentals of statistical mechanics, kinetic theory, and molecular spectroscopy will be taught in order to predict and characterize the behavior of non-equilibrium gases using optical and laser diagnostics. This material will be taught within the context of applications involving combustion, plasmas, propulsion, energetic materials, shock waves and laser radiation.
https://purdue.curriculog.com/proposal:17717/form

Graduate Council Document 21-7q, **ME 62000, Combustion Of Energetic Materials** (PWL) Sem. 1. Lecture 3 times per week for 50 minutes. Credit 3. Prerequisite(s): ME 52500 or AAE 53900 or consent of instructor.

Students will learn the concepts of how to approach research in the area of Energetic Materials (EM) based on an understanding of the fundamental principles. Students will learn how energetic materials are fabricated, safety used, as well as understand life cycle issues, homogeneous & heterogenous combustion, and advanced energetic material concepts. Multiphase combustion phenomena will be introduced and emphasized. They will apply these concepts to a literature review and group research project, as well as that includes applying thermochemistry and chemical kinetic software. In addition, six hands-on labs are performed. This material will be covered in the context of real-world applications, with an emphasis on energetic materials, combustion, propulsion, explosives, pyrotechnics, and detonation phenomenon.
https://purdue.curriculog.com/proposal:17139/form

Area Committee F, Management Sciences (TBD):

Graduate Council Document 21-52a, **STAT 52700, Introduction To Computing For Statistics** (PWL) Sem. 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisite(s): Graduate students can automatically register, but undergraduates at the 3rd or 4th year level need to have passed STAT 51600 and STAT 51700.

This course provides a thorough introduction to the R programming language, and its use for statistical computing and data science. The course will first look at the fundamentals of R, including different data-structures, control-flow, and the basic vocabulary. An emphasis will be placed on learning idiomatic and efficient R, covering ideas such as recycling, vectorization and

functional programming. The course will then look at principles and tools for tasks like organizing data (‘tidy data’), manipulating data (‘data carpentry’), querying data (through topics like regular expressions) as well as visualizing data (including interactive visualizations). The material and the homework will encourage development of modular reusable code and reproducible research through ideas such as object-oriented programming and dynamic documents in R Markdown. The last part of the course will study statistical procedures such as least-squares regression, LASSO, Monte Carlo sampling and Markov chain Monte Carlo. Besides exams and homework, the course will involve a final project that students can collaborate together on.
https://purdue.curriculog.com/proposal:17679/form

Graduate Council Document 21-52b, **STAT 65600, Bayesian Data Analysis** (PWL) Sem. 2. Lecture 2 times per week for 75 minutes or 3 times per week for 50 minutes. Credit 3. Prerequisite(s): Mirror pre-requisites for STAT 54500: (Student Attribute: GR May not be taken concurrently.) or (Course or Test: STAT 51600 Minimum Grade of D- May not be taken concurrently. and Course or Test: STAT 51700 Minimum Grade of D- May not be taken concurrently. and Rule: 1.: CS 15900 or 17700 for a total of 1 conditions) CS 15900 Minimum Grade of D- May not be taken concurrently. CS 17700 Minimum Grade of D- May not be taken concurrently. End of rule 1.

Bayesian data analysis refers to practical inferential methods that use probability models for both observable and unobservable quantities. The flexibility and generality of these methods allow them to address complex real-life problems that are not amenable to other techniques. This course will provide a pragmatic introduction to Bayesian data analysis and its powerful applications. Topics include: the fundamentals of Bayesian inference for single and multiparameter models, regression, hierarchical models, model checking, approximation of a posterior distribution by iterative and non-iterative sampling methods, and Bayesian nonparametrics. Specific topics and the course outline are subject to change as the semester progresses. All topics will be motivated by problems from the physical, life, social, and management sciences. Conceptual understanding and inference via computer simulation will be emphasized throughout the course. Permission of department required.
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