

# PURDUE UNIVERSITY GRADUATE SCHOOL

Minutes of the Graduate Council Meeting

April 23, 2020

1:30 p.m.

Fifth Meeting

Via Zoom - No face to face meeting due to COVID-19

PRESENT: Linda J. Mason, chair, Council Members, Dulcy M. Abraham, Christopher R. Agnew, Taylor W. Bailey, Thomas W. Atkinson, Ryan A. Cabot, Kuan-Chou Chen, William (Bart) Collins, G. Jonathan Day, Duane D. Dunlap, Emad Elwakil, Keith B. Gehres, Margaret Gitau, Richard H. Grant, Patricia Hart, Signe E. Kastberg, Athena Kennedy, Samuel P. Midkiff, James L. Mohler, John A. Morgan, Melanie Morgan, Paul F. Muzikar, Zhan Pang, Tina L. Payne, Manushag (Nush) Powell, Paul Salama, Abraham Schwab, David G. Skalnik, John A. Springer, Rebecca H. Stankowski, Jill Sutor, Joseph D. Thomas, Xavier M. Tricoche, Candiss B. Vibbert (Provost's Representative), Eric Waltenburg, Nicole J. Widmar, Chenn Zhou, Daoguo Zhou

APOLOGIES FOR ABSENCE RECEIVED FROM: Blake A. Allan,

ABSENCES: Christopher K. Belous, Janice S. Blum, Rita A. Burrell, David S. Cochran, Timothy B. Lescun, William McCartney, Beth McNeil, Anson Soderberry, Mitchell L. Springer, Yoon Yeo,

GUESTS: Debbie Fellure, Korena Vawter

## I. MINUTES

The minutes of the Minutes of the March 26, 2020, Graduate Council meeting were approved as presented.

## II. DEANS REMARKS AND REPORTS

- a. Dr. Linda Mason noted that Zoom meetings are working well, so this may be some of the new policies put in place through next year. Dr. Mason noted the moving and adjusting of dates for students to have more flexibility to finish exams by shortening the window to deposit to meet the graduation deadline for the Graduate School staff to be able to clear audits for graduation.

Dr. Mason noted that there have been many things coming through the Graduate Council for approval to modify policies and work with colleges to help move degree options online for summer for those students that will not be able to leave and especially the international students. The students that are graduating and do not have a place to go because their jobs or internships have been frozen will need to be here, so we will offer them something educational while they are here and these will continue to roll out as we go forward for fall. One policy that will be changing is the pass/no pass that was put in place for the Spring semester due to the urgency of switching from a residential mode of delivery to an online mode. We, as well as the undergraduate, feel that there is a need to give students some flexibility and hopefully, faculty are working with students in those classroom situations as they may need adjustments. There have been questions regarding that policy when it relates to a student's qualifying exam or departments that do qualifying exams as a course that the student needs to pass and they need to receive a certain grade. Dr. Mason noted that we have allowed some flexibility within departments not to offer a pass/no pass. As we enter into Summer, people will know when they are signing up they will be signing up for an online course.

Dr. Mason noted that the Graduate School surveyed graduate students on a range of concerns from transitioning to working, teaching, and how to do research from home while homeschooling their children and who will take care of the baby since the Day Care is closed. Graduate students are dealing with the uncertainty of what will happen this Summer and Fall. Dr. Mason noted that President Daniels sent out the announcement regarding salaries noting that we would hold contracts even if they had less teaching for those that have academic appointments through the end of the semester and those on fiscal year were guaranteed through June. Dr. Mason noted other concerns for graduate students are: funding, when will they be able to get back to their research and those working with human subjects are concerned about how they will be able to do that. Some students have not heard from their major professors, so that is disconcerting the communication between professors and students is not happening. It is important for faculty to reach out to students. Dr. Mason noted that other students are concerned their roommates are not social distancing and their medical safety. A big concern for students feeling unsure about their funding and the cost of the University if they are delayed and they have an assistantship and they may run out of funding before they are finished. Dr. Mason noted that we are looking at how we will handle those. We have asked the colleges and departments that have offers that have not been accepted if they have an assistantship offer out and that offer has not been accepted rather than reassigning it to the next person on the list, that it be held as a possible cushion. Dr. Mason also noted that a research grant cannot shift between individuals with research grants. For assistantships that were given to students rather than turning those back in for emergency bridge funding would it be possible that we have flexibility with funding. As the endowment payouts continues to go down and if the market could hold the amount of money that will be available on our rolling average or 12 month rolling average on those is going to continue to go down, it will take a hit. We want to make sure that we try to protect the students that we currently have, and do as much as we can to get them jobs. Dr. Mason noted that a big concern is with international students coming in that will not be able to be here for the Fall. Surveys are being taken every week for teaching assistantships so international offers that have been made and accepted by

international students that have a teaching assistantship that affects some colleges more than others. For those that have teachers that will not be able to get here, how are you going to shift them around and there are plenty of students in many departments who you may be able to make an offer for one semester, and fill in until that other student gets here that you want to have? Dr. Mason noted that we have to look at some creative and flexible ways so that we can watch out for the students that are worried about where their funding is going. Dr. Mason noted that as she continues to have discussions with the university about what that package is offering in possibly delaying external funding that needs to come in that may be out of the Care Act. This would help students that are on research projects to help extend those students for another year or another semester as the case may be. It is a matter of understanding where we are and what we can do by thinking creatively as we move forward. Dr. Mason noted other concerns that students have is housing. We are working on an arrangement with housing on campus for students who are not graduating who will be terminated at the end of the semester but need housing for a short time. Several families are going to be shifting into either married student housing or to a dorm on campus so that they can do a monthly arrangement so they will not have to sign a year's lease for that extended period of time. Dr. Mason noted that we will continue to have flexibility, depending on what happens in the fall with the population that we bring back. If you know of students that are struggling, we have options available to them.

Dr. Mason noted that we need to be aware of how we engage students that are not going to be able to be here this semester, this summer, or this fall. Students that we have accepted, have a slightly higher acceptance rate, which is great for those students who are interested in coming to graduate school. Dr. Mason noted that at this time, 42% separates from those offers which were about 39% at this point a year ago. People are interested in coming here, so we have to figure out how to work and for those that are not going to be able to come and my guess is, probably not Fall. Dr. Mason noted that we hope they will be able to come in Spring, but we cannot guarantee that we will be able to have visas and everything available for students to arrive for the spring. Dr. Mason noted the importance of flexibility and how do we engage those students to keep those offers and what can we do to engage those students as faculty and departments in reaching out to them so that they continue to be interested in coming to Purdue. An economic model was distributed that is available for a small group of interested students who have been made financial offers by Purdue. They will not be for international students that are not currently in the US, and still want to come to Purdue, a way in which we can offer them that assistantship for them to continue their courses online in the Fall. We will not be able to offer the stipend to them because we cannot pay as an employee in another country, but we can pay that tuition fee remit. Dr. Mason noted that there are caveats on what monies can be used for. that but there are some students we might be able to capture and have them start their program.

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

*Graduate Council Document 20D*, Graduate Council Documents Recommended for Approval. See Appendix B. Voted via Qualtrics survey.

#### IV. PURDUE GRADUATE STUDENT GOVERNMENT -- PRESIDENT'S REPORT

Taylor Bailey, President of the Purdue Graduate Student Government (PGSG) noted that due to the COVID 19 the entirety of Spring semester has been canceled. PGSG will continue to meet as the Senate and the executive board; however, the Senate meeting was pushed back a week, so Mr. Bailey was not able to give an update as to who the incoming PGSG President will be. PGSG made a donation in response to supporting students to the Office of the Dean of Students Critical Need Funds specifically for COVID-19. A donation was made to the ACE Campus Food Pantry of \$15,000 and \$2,000 respectively. Most of that \$15,000 was given to graduate students. PGSG is looking forward to some of the Care Act funding being able to support that industry a little more to make sure that students in need are actually able to get some help. Mr. Bailey thanked the Graduate Council for being able to serve on the Council the last two years, as it has been heartening to see the conversations that shows that there are a lot of people at the institution who care about their students. Mr. Bailey also thanked everyone for the support for several projects the PGSG presented and all of the things that have been accomplished together.

#### V. OLD BUSINESS

Dr. Linda Mason noted there was two Task Force committees that was in operation this past year. We have received preliminary drafts of those reports from the committee chairs. We will be looking over those reports and move them forward to the administration on our graduate student's minimum pay, and the graduate student housing issue.

Dr. Nush Powell, Task Force Committee Chair, thanked the members of the task force, including Tom Atkinson. The task force was asked to make a report assessing the state of graduate minimum salary levels and graduate housing options. The committee quickly found that those two issues were very hard to pull apart, in part because of the way the undergraduate population has been growing and rents have been rising. They have had the effect of squeezing graduate students out of Purdue Village, Hilltop apartments, and generally, out of West Lafayette or they stay and the rents are higher, so students are spending more and more of a stagnant salary to maintain where they are. Dr. Powell noted that it was not easy to talk about one or the other without talking about both. The committee found they have more questions than hard data. There has been a pattern the last several years of decisions having been made that affect graduate student life that is not data-driven concerning graduate students. The decisions being made with respect to undergraduates targets lives and preferences with a vision for Purdue several years down the line of what it is going to look like that fails to adequately take into account the presence of graduate students on campus and how essential they are to the University's mission. We are trying to draw attention to that and that is why we do not have the data. The Graduate School, the Purdue Graduate Student Government (PGSG), and Professor Nicole Widmar will be working through the School of Agriculture next year to do some data gathering to do a graduate cost of living assessment economic analysis. We are expecting information from them with what

has happened this year for next year and that will give us a better look at how we might try to recommend setting a minimum salary level. Dr. Powell noted that while they were gathering information, they used the number \$20,000 for the fiscal year as the base salary for everyone. That number is not being recommended because the Task Force Committee picked it to have a number to work with since they did not have a basis on which they could recommend what the number needed to be. The minimum salary levels are low in comparison to the rest of the Big Ten, so they are low for what our students need for living here. While the committee mostly raised questions, they had some immediate recommendations: 1) The Task Force Committee very strongly recommends the number of on-campus units that have been designated for graduate students not decline any further than where it is the beginning of the 2021 academic year. 2) Most of Purdue Village has been demolished. The Community Center, which is a new building and the Preschool, may be demolished this summer. Units that can continue to house about 400 people are still there with approximately 170 family units and some single units. The Task Force recommended that that number not be reduced further and that the Purdue Research Foundation (PRF) hold off on further demolition until there is a plan for new long-term graduate housing. The Task Force offered a few suggestions: 1) Housing options to support graduate students need to be part of the long-range planning of the University, and when planning, we need to recognize that the needs of graduate students are substantially different from the needs of undergraduate students. The Task Force suggests that the PRF try to develop some high-density graduate housing, in conjunction with university private partnerships for dedicated off-campus graduate housing with an emphasis on housing for graduate families. One thing that keeps coming up is that the lack of graduate housing does not have the same impact across the entire population. Students with families, international students, and international students with families are hit much harder than young single students who have an easier time finding a roommate, finding housing, and being able to move around. 3) The Task Force suggested that Purdue keep thinking about alternative transportation systems such as the Leaper X Transportation experiment which was quite popular. As graduate students are being forced further from campus by rents, transportation becomes an issue for them, particularly since graduate students are often working non-normal business hours. They may be taking classes late at night after the buses have stopped running and they are often in their labs late at night after the buses have stopped running. Having safe cheap available transportation to get them to their homes, is an essential part of the quality of life and the way we need to serve them.

Dr. Linda Mason thanked Dr. Powell, the students, and faculty for taking on this major undertaking. Dr. Mason noted that there have been conversations with PRF regularly on housing options. At one point, they were looking for a major donor to separate the differential cost of building a new construction building in a dorm-like fashion versus what we could generate and rent out of that. They were able to find a different way to move forward and did not need as big of a donor to move forward in a public-private partnership with a corporation. That is where we were, and then the COVID 19 pandemic hit and now Dr. Mason noted that we are not sure where the construction is going. Dr. Mason noted that one thing that may help is, due to the COVID 19 pandemic, the need to separate students availability and have isolation housing, they are not looking at tearing down housing at this point if they are not going to build immediately on that site. This is an issue that we will be

moving forward on and working with the administration to come up with formal plans on both the housing and financial issue.

Dulcy Abraham thanked the Task Force subcommittee for doing this very important work and noted that this is going to be very encouraging for our graduate students to hear of graduate school, in particular, being interested in their welfare. Dr. Abraham asked if the findings of the Task Force will be passed on to the schools.

Dr. Mason noted that it will be passed on to the schools when the final report is approved by the Graduate Council for others to have the availability of the document.

Dr. Powell noted one thing that became clear from multiple angles over time was that many things that can be done for graduate students. There are many creative ways to approach both the salary and the housing question, but it needs to include those higher up in the University for that to happen. Dr. Powell noted that it is part of the mission of the task force and other people working here is that we need to kind of find a way to cause that wheel to blossom.

Dr. Mason noted that she attended the President's Council meeting in Naples this Spring and one of the Board of Trustees members talked Dr. Mason about graduate student housing. Dr. Mason noted that there is interest at that level and they are aware of what we were doing and asked for more details.

Dr. James Mohler reported on the Task Force for developing online Ph.D.'s. Dr. Mohler thanked the committee members. Dr. Mohler noted what spawned this discussion was the idea of could and should Purdue be in the online Ph.D. market and how do we want to define that. Dr. Mohler noted that the committee started with background first on what can we do currently. Purdue does have Ph.D. programs right now that can be up to 80% online without being classified as online, so up to 80% would be what we would call a hybrid. And we do have programs that are verging on that. Dr. Mohler noted that at least from the Commission for Higher Education their standpoint that it is okay. We currently have no Ph.D. program that is 100% online. Dr. Mohler noted that none of our research courses are even approved for distance. Now the reality exists that if you had a Ph.D. student who wanted to go away and do research, the old model was they do all the coursework on campus, and they do research in absentia and go work at NASA, or Rolls Royce, or you name your company to do your research. Dr. Mohler noted that what has changed is the fact that now students could do almost all of their coursework online and then do research in absentia and not be here. Dr. Mohler noted that he would be lying to say that that has not happened in certain cases. But, the question is, do we want to do that in a full-scale way and the committee talked about this. We have a limited number of doctoral programs that can be done online. One of them is the Doctor of Technology in the Polytechnic Institute. It is not a problem to have doctorates completely online, but we are talking about professional-oriented doctorates, not a Ph.D.

Given that background, the committee started talking about what defines the Ph.D. experience. There is no argument that coursework can be done online and what we are doing online is of quality. The real question is, can what we do online be the equivalent of what we would do face to face. Dr. Mohler noted that is where the committee talked and spent a lot of

time in that particular area. Dr. Mohler noted some can perceive a complete online Ph.D. and there are others that cannot. Dr. Mohler did not know that the committee was in total agreement that the Task Force Committee should take any hardline stance on this and the council needs to discuss this. Would this be something that the Commission for Higher Education, the President or Provost would even entertain? Dr. Mohler noted that there were many conversations and the committee did a lot of work behind the scenes. The report notes the following: 1) If this were possible, what is the list of questions for a complete online Ph.D.? 2) How to manage the scholarship portion of this? 3) How the mentorship that happens face to face is oftentimes difficult enough, but if you tried to manage this entire thing online, how would that work? Dr. Mohler noted that we are figuring that out right now with the COVID 19. 4) A particularly tricky part of this would be intellectual property. Generally, if students come here and they work at Purdue and do their research at Purdue, Purdue has a stake in that. What happens if someone is working abroad? That is why a lot of the Research in Absentia are very limited in number because they are complex as to who has the stake in the IP. How do you handle data issues, material transfer agreements, data transfer agreements? How are exams, qualifying, and otherwise going to be handled? Dr. Mohler noted that eventually, there needs to be a lengthy discussion within the Council, talking about two parts to this question - there is a could and a should question. Dr. Mohler noted that the committee was approaching it from the standpoint of not saying no immediately. If the door were open, what is the list of questions that we need to transpire?

Dr. Linda Mason noted that this is not something that will go forward to the Commission for Higher Education for approval of how we do degrees internally within the Graduate Council. Dr. Mason noted that when the council meets is to have a dedicated time is that we want to move our time spent on documents out of our meeting time, and spend the time having discussions about graduate student issues and graduate education issues in educating us so that we can disseminate this further. Dr. Mason noted that was another reason for adding more Council members because they may represent multiple departments and there are different ways in which members are selected to serve and who they represent. It is not always easy to spread that information and disseminate that information out to faculty running a graduate program in a department. Dr. Mason noted that one of the reasons for expanding it is to go more like the Senate model, is to have representation from every college/department so that their voices are heard and they are hearing things that we are discussing. As the Council discusses things as a larger body, that can filter on down and gather information and bring it up to us as we make policy decisions. Dr. Mason noted that we want to be able to spend an entire Council meeting discussing topics and have the opportunity to look at some of these ideas that come through the report this Fall. Dr. Mason noted that Council members can meet back with their constituents with the information report and report back to the Council on what are the issues, what might this look like, where are your concerns and where are your solutions to the concerns that others have brought up? The Council would decide if we are going to do this and it would then go to Indiana Commission for Higher Education (ICHE). If ICHE says that we can do this, then we need to decide how we want to do it. If we move forward, we need to decide on the policies and procedures needed to put it in place to have the safeguards to make sure this goes forward before we start accepting a proposal in Curriculog. Dr. Mason noted that we need to vet this idea next year and make a decision on how we will move forward.

Dr. Mohler noted that prior to COVID, we knew that we needed a mechanism to track off-campus research apart from Research in Absentia because some students are going away and doing research off-campus before they get to prelims and getting their coursework done, so a brand new form was created. Now COVID has made it even more important that we start using the form because one of the problems we ran into is when all this started we could not tell who was where. Dr. Mohler noted even though we process all these Research in Absentia and Research Leave forms there is not a master database; nor is it stored in Success Factors. Dr. Mohler noted that we realize we are going to have to track this closely, so if you see this funnel down to you and you have Ph.D. students or master's students who are planning to do off campus research from fall 2020 forward, we need them to start filling out this form. It is like the Research in Absentia form except that it is anytime in a student's studies prior to prelims or completion of their coursework, a Ph.D. student would need to file this. Dr. Mohler noted that it was embarrassing because he handles the Research Leave forms and Tom Atkinson handles the Research in Absentia forms. When the Provost came on that Friday before they were closing the gates of the United States on Monday and wanted to know how many students are away it was sad that they could not give the Provost this information, so we have to do a better job at that in the future. Hopefully, we never undergo this type of thing again, but we do need to be able to do that. It was another thing that came to our attention related to the online Ph.D.

Dr. Mason noted they were making calls that weekend to figure out how they were going to get people on evacuation plans but did not know where they were. Some were married and had children and now living in other countries and their major professors did not know where they were. Dr. Mason noted they were making phone calls and email contacts with students all over the world to figure out who needed to get back, how they needed to get back, were they safe, and trying to link HR system of where their paycheck was going. Dr. Mason noted that we need a way to track when things like this happen. We have to know if we need to get someone on an evacuation plan, and you have less than 48 hours to find them, and get them approved and on a plan. We can do it if we do not know where they are and who is with them and how long they are going to be there. Dr. Mason noted that we need a way to figure out where people are, which was not being communicated, so this will help. Dr. Mason noted that processes and procedures are being developed that we never thought would ever be needed and thanked the Task Force committee. Dr. Mason also noted that this is critical for us to decide what we are doing. When Dr. Mason asked this question initially to her counterparts at all of The Big 10 schools, they indicated there is no way they would ever consider doing something like this. We are ahead of the curve of even asking the questions of what we would do and how we were doing. Sometimes that is good to be out there ahead of the curve, but sometimes it is very scary to know what you are doing, are you going to do it right, and how are you going to do this. Dr. Mason noted that we will continue this discussion as we move forward for next year and thanked the Council for their service. The Council is the vital source of our contact of what is real and what is working and what the voice of graduate education and the problems that are out there in the departments and colleges. Dr. Mason noted that the Council does the work that allows the quality to be maintained here at Purdue, but also that we can continue to make policies, procedures, and changes that help our students and our faculty give the best quality of graduate education.



Dr. Mason noted that the Council service may not be rewarded well at the institution, so for people to step up who are willing to serve, we greatly appreciate that you help make graduate education work more efficiently and help our students get what they need to get where we need to go. Dr. Mason noted the Council does a wonderful job of having those discussions about graduate education on this campus of what that residential experience looks like for our traditional student that is going from an undergraduate degree to a graduate degree. Dr. Mason noted that we need to think creatively where we have been working with the folks in the online in those discussions, is the other part of graduate education that is all of those individuals that are looking for education beyond their bachelor's degree, no matter where they were in their career. Dr. Mason noted that graduate education is that continuing education that people need to keep up in a competitive field as the world changes and science changes, and the discipline changes that Graduate education is that touchpoint. It may not be a degree that we talked about they are coming from a Masters or Ph.D. and that is why we started talking about this ability of stackable units on how someone can build to a degree or someone may not want a degree, or they just need additional information. Dr. Mason noted that the council will spend some time next year talking about what does that look like, what are the things that we can offer in our colleges and our departments, and with the new Interdisciplinary degree. Dr. Mason noted that those other units might be able to offer individuals that want to come back to school, but do not need to come back to campus to get a traditional Master's or Ph.D. and we can extend that reach of Purdue graduate education to a huge population that is not our traditional students.

Dr. Mohler asked the Council if there was interest to hold a Council meeting in May as we enter into Summer where there will be a long period with very little information. There should be further information that Dr. Mason can relay to the Council by May 18<sup>th</sup>.

The council meeting was adjourned by Dr. Mason at 2:52 p.m.

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

## **APPENDIX A**

### **PENDING DOCUMENTS**

**(April 2020)**

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

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

***Graduate Council Document 20-14c, EDPS 50101, Collaboration In Special Education (PNW)***

***Graduate Council Document 20-14d, EDPS 50202, Autistic Spectrum Disorders (PNW)***

***Graduate Council Document 20-14e, EDPS 50303, Characteristics Of Students With Intense Intervention Needs (PNW)***

***Graduate Council Document 20-14f, EDPS 50404, Intervention Strategies For Students With Intense Needs (PNW)***

***Graduate Council Document 20-11b, SLHS 54401, School-Clinical Methods In Communication Disorders (PWL)***

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

***Graduate Council Document 20-22a, AT 54800, Aircraft Asset Management (PWL)***

***Graduate Council Document 20-22b, AT 54900, Aircraft Leasing (PWL)***

***Graduate Council Document 20-29a, CS 50023, Data Engineering I (PWL)***

***Graduate Council Document 20-29b, CS 50024, Data Engineering II (PWL)***

***Graduate Council Document 20-29c, CS 50025, Foundation of Decision Making (PWL)***

***Graduate Council Document 20-7a, ENGT 55000, Manufacturing System Design For Sustainability (PWL)***

***Graduate Council Document 20-19a, ME 53500, Design and Modeling of Fluid Power Systems (PWL)***

***Graduate Council Document 19-39c, MSE 67000, Atomistic View of Materials: Theory, Modeling And Simulations (PWL)***

***Graduate Council Document 20-18a, MSE 69600, Graduate Professional Practice (PWL)***

***Graduate Council Document 20-21a, MSTE 57800, Composite Materials For Automotive Applications, (IUPUI)***

***Graduate Council Document 20-21b, MSTE 57900, Design And Analysis Of Materials And Structures In Lightweight Vehicles, (IUPUI)***

***Graduate Council Document 19-65d, MSTE 58400, Advanced Motorsports Aerodynamics, (IUPUI)***

***Graduate Council Document 20-21c, MSTE 59200, Motorsports Simulations, (IUPUI)***

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

***Graduate Council Document 20-31a, BIOL 52020, Introduction To Virology (PNW)***

## **CERTIFICATES:**

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

***Graduate Council Document 20-26a, Graduate Certificate in Advanced Methodologies in Behavioral, Social, and Health Sciences submitted by the Graduate School Administration (PWL)***

Area Committee B, Engineering, Sciences, and Technology (Dulcy M. Abraham, interim chair; dulcy@purdue.edu):

***Graduate Council Document 20-3a, Graduate Certificate in Cybersecurity submitted by the Department of Computer Information Technology and Graphics (PNW)***

**MAJORS:**

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

***Graduate Council Document 20-17a, Major in Corporate Training and Communication Leadership submitted by the Graduate School Administration (PWL)***

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

***Graduate Council Document 20-15a, Major in Landscape Systems and Design submitted by Horticulture and Landscape Architecture (PWL)***

***Graduate Council Document 20-16a, Major in Health Physics submitted by the School of Health Physics (PWL)***

**DEGREES:**

Area Committee B, Engineering, Sciences, and Technology (Dulcy M. Abraham, interim chair; dulcy@purdue.edu):

***Graduate Council Document 20-27a, Ph.D. in Biomedical Engineering submitted by the Department of Biomedical Engineering (IUPUI) For SITE approval only.***

Area Committee C: Chemistry, Engineering, and Physical Sciences, John Morgan; chair, jamorgan@purdue.edu):

***Graduate Council Document 20-4a, Master of Nuclear Engineering (M.N.E.) submitted by the School of Nuclear Engineering (PWL)***

**APPENDIX B**

**DOCUMENTS RECOMMENDED FOR APPROVAL  
BY THE GRADUATE COUNCIL  
April 2020**

**GRADUATE COURSE PROPOSALS:**

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

*Graduate Council Document 20-14c, **EDPS 50101, Collaboration In Special Education*** (PNW) Sem. 1 and 2. Lecture 1 time per week for 150 minutes. Credit 3.

This course is designed to help candidates construct knowledge about techniques for collaborating with families and professionals to support the needs of children/youth with disabilities. This course will facilitate the development of professional practices and relationships by exploring current research on effective methods of interaction with key stakeholders which support inclusive educational practices.

<https://purdue.curriculog.com/proposal:12186/form>

*Graduate Council Document 20-14d, **EDPS 50202, Autistic Spectrum Disorders*** (PNW) Sem. 2. SS. Lecture 1 time per week for 150 minutes. Credit 3.

This course provides an overview of autism spectrum disorders, including history, etiology, characteristics, assessment, evidence-based interventions at home and school, service delivery models and alternative/complementary treatments.

<https://purdue.curriculog.com/proposal:12211/form>

*Graduate Council Document 20-14e, **EDPS 50303, Characteristics Of Students With Intense Intervention Needs*** (PNW) Sem.1 and 2. Lecture 1 time per week for 150 minutes. Credit 3.

This course is focused on the learning and behavioral characteristics of students with intense intervention needs. Assessment and identification criteria used in the identification of these children are discussed. Appropriate programming and placement is also primary focus. Diagnostic definitions used for classification are explained.

<https://purdue.curriculog.com/proposal:12192/form>

*Graduate Council Document 20-14f, **EDPS 50404, Intervention Strategies For Students With Intense Needs*** (PNW) Sem. 2. Lecture 1 time per week for 150 minutes. Credit 3.

This course provides an understanding of the interventions and teaching methods used to instruct children and students with intense special education needs. The nature of significant cognitive, emotional, behavioral, and physical disabilities, including the biological, psychological, and behavioral characteristics of various conditions are also discussed.

<https://purdue.curriculog.com/proposal:12222/form>

*Graduate Council Document 20-11b*, **SLHS 54401, School-Clinical Methods In Communication Disorders** (PWL) Sem. 1 and 2. SS. Distance. Credit 1.

The focus of this course is on the implementation of speech, language, and hearing services with preschool to secondary (P-12) school-aged children. Students develop a working knowledge of special education law, disability law, and other resources for school-aged children.

<https://purdue.curriculog.com/proposal:13067/form>

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

*Graduate Council Document 20-22a*, **AT 54800, Aircraft Asset Management** (PWL) Sem. 1 and 2. SS. Lecture 1 time per week for 150 minutes. Credit 3.

This course provides the student with a detailed exploration of aircraft asset management programs in both airlines and business aviation organizations. Students analyze and study the critical components of an asset management program, the financial methods in aircraft asset management, acquisition proposals, and development plans of aircraft acquisitions in this course. An airline industry-relevant project is used to improve student reasoning and application of industry standard aircraft asset management analysis procedures to include forecasting techniques, present value calculations, and benefit-cost analyses. This course serves as the foundational knowledge required for AT 54900.

<https://purdue.curriculog.com/proposal:12501/form>

*Graduate Council Document 20-22b*, **AT 54900, Aircraft Leasing** (PWL) Sem. 1 and 2. SS. Lecture 1 time per week for 150 minutes. Credit 3. Prerequisites: AT 54800.

This course provides students with training and experience managing aircraft leases using financial and risk management methodologies specific to the airline and business aviation industries. Students conduct financial evaluations of leasing versus ownership programs of airlines, as well as analyze debt, equity and capital markets for aircraft financing. The course includes an examination of taxation issues related to aircraft leasing, maintenance reserves, and auditing of aircraft financial performance. The prerequisite for this course is AT 54800.

<https://purdue.curriculog.com/proposal:12503/form>

*Graduate Council Document 20-29a*, **CS 50023, Data Engineering I** (PWL) Sem. 1 and 2. SS. Distance. Credit 1.

The course introduces students to the fundamentals of Data Engineering with a focus on tools and computational techniques to gather, construct, manipulate, summarize, and visualize

data sets as a means to extract knowledge from the underlying data. Python and Python libraries are used. Completion of the course will allow learners to perform basic data analysis on data sets. Experience in Python Programming and Linear Algebra is required. The course also prepares learners for additional instruction in the courses Data Engineering II and Foundations of Decision Making.

<https://purdue.curriculog.com/proposal:12475/form>

*Graduate Council Document 20-29b*, **CS 50024, Data Engineering II** (PWL) Sem. 1 and 2. SS. Distance. Credit 1.

This course introduces students to the fundamentals of database management systems (DBMS) from a user's perspective. The principles of modeling an enterprise using Entity-Relationship diagrams and transforming the model into a relational or NoSQL database are illustrated through a range of examples. The SQL language is used to create, query, aggregate, and update a relational database. NOSQL databases and the related data models (column, graph, and document-based) are introduced. Experience in Python Programming is required.

<https://purdue.curriculog.com/proposal:12476/form>

*Graduate Council Document 20-29c*, **CS 50025, Foundation of Decision Making** (PWL) Sem. 1 and 2. SS. Distance. Credit 1.

This course provides an overview of data science methods used for data-driven discovery, extraction of knowledge, and informed decision making. The course covers fundamental computational methods and statistical techniques used to correctly reason about uncertainty, conduct hypothesis tests, infer causal relationships, and apply and evaluate predictive models. The course highlights how sampling biases can impact fairness in decision making. Throughout, students get hands-on experience on how to make correct and explainable inferences from data. Experience in Python Programming, Probability, Statistics and Linear Algebra is required.

<https://purdue.curriculog.com/proposal:12477/form>

*Graduate Council Document 20-7a*, **ENGT 55000, Manufacturing System Design For Sustainability** (PWL) Sem. 1 and 2. SS. Individual Study. Distance. Credit 3. Cross-listed Course: SE 55000 (PFW) Meets with; not equivalent.

This course prepares manufacturing and information technology leaders to design and analyze manufacturing processes to achieve manufacturing system objectives that meet internal and external customers quality, cost and delivery requirements within a safe environment. The course project covers major aspects of manufacturing system design and Industry 4.0 in the context of meeting customer needs. Technology leaders and entrepreneurs learn how to work with others to develop the design of manufacturing systems that are sustainable (business, ecological, social, technological) for the long-term. When to use lean and six-sigma techniques in the context of the manufacturing enterprise system design to meet customer needs will be assessed from a system design perspective, through analytical and computer simulation techniques, and through the use of physical modeling tools.

<https://purdue.curriculog.com/proposal:10829/form>

*Graduate Council Document 20-18a, MSE 69600, Graduate Professional Practice (PWL)*  
Sem. 1 and 2. SS. Experiential. Credit 0.

Professional practice in Industry.

<https://purdue.curriculog.com/proposal:9823/form>

*Graduate Council Document 20-21a, MSTE 57800, Composite Materials For Automotive Applications, (IUPUI)* Sem. 1. Lecture 2 times per week for 75 minutes. Credit 3.

Prerequisites: Graduate standing or ME 27200.

Different composite materials have been used for many years in the automotive industry to create components that have unique characteristics, such as being strong and light. The trend in using composite materials is accelerating to meet lightweighting requirements to meet the next generation of fuel economy standards. An interesting lightweighting application combines the use of continuous fiber composite material with resin. The continuous fiber composite material forms a lightweight shell, while the necessary support structure can be created by supporting it with a fiber-filled plastic. This so-called hybrid technique can create extremely lightweight strong parts that can be manufactured in large volumes. This course focuses on Development of Low-Cost Carbon Fiber for Automotive Applications, Mechanical Properties of Advanced Pore Morphology Foam Composites, Automotive Composite Structures for Crashworthiness, Crashworthiness Analysis of Composite, Hybrid Structures Consisting of Sheet Metal and Fiber Reinforced Plastics for Structural Automotive and Design Solutions to Improve Crash-Box Impact Efficiency for Racing Applications. Permission of department required.

<https://purdue.curriculog.com/proposal:8872/form>

*Graduate Council Document 20-21b, MSTE 57900, Design And Analysis Of Materials And Structures In Lightweight Vehicles, (IUPUI)* Sem. 1. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisites: ME 27200.

The materials for the construction of automobiles are changing from mostly low carbon steels to a combination of steels, light alloys, such as aluminum and magnesium alloys, and polymer matrix composites. Many of these materials are already used in today's vehicles, albeit in smaller volumes. Future vehicles, which will have to be much lighter in weight for improved fuel economy and reduced environmental pollution, will contain much larger volumes of these materials. The selection of materials will not only be influenced by their weight reduction potential, but also by factors such as safety, durability, processing, joining, recycling and cost. This course focuses on materials, their properties, processing technology and design and materials selection issues pertinent to designing lightweight vehicles. It will provide first-hand knowledge and experience of working with these advanced materials. It starts with a broad review of the materials scenario and design considerations for lightweight automotive structures. It is then divided into two major parts: materials, and design and manufacturing. The materials part contains topics on advanced steels, aluminum alloys, magnesium alloys and polymer matrix composites. It will provide information on material properties, processing characteristics and application examples. The design and manufacturing part contains information on manufacturing processes for light alloys, joining, crashworthiness considerations, recycling and life-cycle issues. Permission of department required.

<https://purdue.curriculog.com/proposal:8873/form>

*Graduate Council Document 19-65d*, **MSTE 58400, Advanced Motorsports Aerodynamics**, (IUPUI) Sem. 2. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisites: MSTE 58200.

This advanced course is designed to adapt the secrets of the rapidly developing field of high-speed vehicle design. From F1 to Indy Car, Advanced drag simulation and Sedan racing, this course provides clear advanced explanations for students and engineers who want to improve their design skills and to interpret how their favorite race cars aerodynamics is designed. It differentiates how aerodynamics win races, why downforce is more important than streamlining and drag reduction, designing wings and venturis, plus wind tunnel designs and more. Appraises the development process of advanced motorsports aerodynamics engineering. Extensive use of CFD in the development of race car aerodynamics.

<https://purdue.curriculog.com/proposal:9015/form>

*Graduate Council Document 20-21c*, **MSTE 59200, Motorsports Simulations**, (IUPUI) Sem. 1. Lecture 2 times per week for 75 minutes. Credit 3. Prerequisites: Graduate standing or MSTE 29800 and MSTE 47200.

A course on mathematical modeling and computer simulation of mechanical systems offering a complete tool for modeling and simulation of integrated and complex systems for use within automotive and motorsports applications. Complex multi-disciplinary systems modeling and analysis problems will be solved, using a modeling and simulation environment for complex systems analysis such as Dymola's Modelica simulation technology. Dymola is a complete environment for model creation, testing, simulation and post-processing. Equal emphasis is placed on model development and simulation via Dymola GUI interface. Models range from simple spring-mass-damper system to whole vehicle models will be covered. Permission of department required.

<https://purdue.curriculog.com/proposal:8877/form>

## **CERTIFICATES:**

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

*Graduate Council Document 20-24a*, **Graduate Certificate in Agricultural Sciences Education, Extension and Communication** submitted by the Department of Agricultural Sciences Education and Communication (PWL)

<https://purdue.curriculog.com/proposal:12959/form>

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

*Graduate Council Document 20-28c*, **Graduate Certificate in Business Essentials** submitted by the Department of Management (PWL)

<https://purdue.curriculog.com/proposal:12991/form>

## **MAJORS:**

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



*Graduate Council Document 20-20a, Major in Motorsports Engineering* submitted by the Department of Engineering Technology (IUPUI)  
<https://purdue.curriculog.com/proposal:12290/form>

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

*Graduate Council Document 20-17a, Major in Corporate Training and Communication Leadership* submitted by the Graduate School Administration (PWL)  
<https://purdue.curriculog.com/proposal:12279/form>

*Graduate Council Document 20-17a, Major in Interdisciplinary Studies*, submitted by the Graduate School Administration, PWL  
<https://purdue.curriculog.com/proposal:13743/form>

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

*Graduate Council Document 20-15a, Major in Landscape Systems and Design* submitted by the Department of Horticulture and Landscape Architecture, PWL  
<https://purdue.curriculog.com/proposal:12647/form>

## **DEGREES:**

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

*Graduate Council Document 20-27a, Ph.D. in Biomedical Engineering (Site Only)* submitted by the Department of Biomedical Engineering, IUPUI  
<https://purdue.curriculog.com/proposal:10878/form>

## **NEW DOCUMENTS RECEIVED**

(After the April 23, 2020 Graduate Council Meeting)

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

*Graduate Council Document 20-14g, EDPS 50001, Foundations Of Online Learning* (PWL) Sem. 1 and 2. SS. Distance/ asynchronous for 7 weeks per term. Credit 1. Prerequisites: Must successfully be completed by the end of the 2nd semester (2 opportunities) in order to move forward within the program.

This course is designed to help you to understand the knowledge and skills necessary for your successful online learning in the Online MEd in Special Education program, with a focus on the process of completing University and Program specific requirements. In this orientation, you will explore what online learning entails and reflect on how you can best set yourself up to succeed in your studies.

*Graduate Council Document 20-14h, EDPS 50002, Foundations Of Licensure (PWL) Sem. 1 and 2. SS. Distance/ asynchronous for 7 weeks per term. Credit 1. Prerequisites: Must successfully be completed by the end of the 2nd semester (1 opportunity) in order to move forward within the program.*

This course is designed to guide candidates to complete required documents needed to determine appropriate clinical practice placement(s) for candidates within unique employment situations. This course includes two process applications required of all employed candidates: 1) Clinical Practice Pre-Application Process and 2) Clinical Practice Application Process.

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

*Graduate Council Document 20-39a, ILS 51200, Information Strategies For Science, Technology, and Engineering Research (PWL) Sem. 1 and 2. SS. Distance. Lecture 1 time per week for 50 minutes. Credit 1.*

This course focuses on information strategies for successful research in science, engineering, and technology disciplines. Students will learn about how scholarly information and discipline relevant grey literature (e.g., patents, technical standards) are created, organized, disseminated, retrieved, and managed. In addition, students will learn strategies to critically evaluate information and present their research effectively and ethically.