The Graduate Council Curriculum Report (GCCR), which includes all graduate curricular proposals approved through the Graduate Council curricular review process, is published 12 times each calendar year.

Questions/comments regarding the GCCR or its contents may be directed to the Director of Graduate Education Administration.

January 11, 2017

Graduate Degree Programs

CHANGE

Bioengineering – discontinue extension to Hershey (Intercollege Graduate Degree Programs), page 5

Human Development and Family Studies – adopt dual-title Ph.D. in Social Data Analytics and discontinue offering dual-title Ph.D. and M.S. degrees in Comparative and International Education (College of Health and Human Development), page 13

Media Studies – add a non-thesis track for the M.A. degree (College of Communications), page 40

Graduate Courses

ADD

AEREC 532
Applied Computational Economics
APPLIED COMP ECON (3)
The course explores four topics: computable general equilibrium modeling, growth modeling, uncertainty and formal monte carlo analysis, and agent-based modeling.
PROPOSED START: SU2017

BMS 512
Data Analysis For the Biomedical Laboratory Scientist, A Practical Approach
DATA ANALYSIS (2)
Biology is becoming increasingly computational as new technologies are producing massive amounts of data. The quantitative data need to be organized, graphed, and interpreted. This course will teach students the theoretical and practical aspects of experimental design, hypothesis testing, statistical analysis, and linear and non-linear curve fitting. This course will pair lectures describing theory with applications involving problem solving. Students will learn to program so they can analyze complex data sets. The students will increase their understanding of statistics and have the wherewithal to analyze big data sets. The course will end with a final project involving image analysis in which the students will create scripts and functions to analyze the co-localization of fluorescent proteins in cells.
PROPOSED START: SU2017
ENTR 810
Emerging Trends, Technology, and Corporate Innovation
TRNDS TECH & INNOV (3)
This course explores emerging trends and disruptors in technology and industry that create new markets and influence decision making, product development, business models, and business practices associated with innovation. This course covers the major areas of concern that affect disruptive innovation and examine the role of disruptive innovation in fostering new business ventures. Specific examples of disruptive innovation will be analyzed. Students will gain insight into how breakthroughs in technology, science, and business modeling play out in establishing new products and markets. Students will be exposed to, and investigate, the best practices of key industries (e.g., healthcare, manufacturing, banking, retail, etc.) and organization functions (e.g., marketing, finance, research and development, sales, etc.) as they relate to fostering and supporting innovation and entrepreneurship in a business enterprise. Students will learn the importance of taking an interdisciplinary approach to thinking about and planning innovation projects and programs, in terms of both internal and external forces.
PROPOSED START: FA2017

ENTR 820
Corporate Innovation Strategies and Entrepreneurial Methods
CORP INNV STRATGS (3)
This course is designed to survey and explore the methods used to foster innovation and entrepreneurship in a corporate setting. Emphasis will be placed on the methods used in organizations to foster creativity, innovation, and new venture creation. This course covers both tactical and strategic approaches to innovation and entrepreneurship, and examines these in multiple contexts, including technology, business process, product, and strategy. Furthermore, the course will expand on widely accepted frameworks and perspectives for managing innovation, such as agile product development, and the lean startup approach. Students will also delve into the more abstract notion of how to create and enable an organizational culture of innovation, manage conflict, and negotiate agreements effectively. Lastly, a final objective of the class is to ensure students understand how to protect and manage intellectual property.
PROPOSED START: FA2017

ENTR 830
Entrepreneurial Business Planning and Strategy Execution
ENTR PLAN & STRAT (3)
This course is designed to allow students to integrate, synthesize, and apply what they have learned in prior courses, and gain further insight into two major drivers of business success, innovation and entrepreneurship. As such, this course will serve as a culminating experience in innovation and entrepreneurship learning. The strategic implications of innovation are examined, including an emphasis on how to be critically aware of factors which may inhibit or facilitate innovation in an organization or team. Students will gain insight into how to write a business case to clearly and effectively outline the pros and cons of taking a specific course of action. Business case development will also rely on how to perform cost-benefit analysis. The course will also teach students the key issues, elements, and approaches associated with translating a sound business model into a compelling business plan (preferably for a new venture). The key elements of a formal business plan will be explored in-depth, including how to write an executive summary, product description, market assessment, team formation plan, pricing models, sales forecasting, financial planning, and implementation planning. The course will emphasize the context and issues associated with developing a formal business plan, developing and understanding business models, and using the planning process to formulate and execute
implementation strategies. Various implementation approaches will be compared and contrasted. The
course will also enable students to construct business models and plans that present key points in a
direct, clear, and appealing way.

PROPOSED START: FA2017

MATSE 504
Solid State Materials
SOLID STATE MATLS (3)
The main course objective is to present fundamental concepts and models to develop students' quantitative understanding of mechanical, electrical, optical, and thermal phenomena in solid-state materials. Emphasis is placed not only on the discussion of material properties, but also on building a comprehensive understanding of how structure affects properties in solid state materials and vice versa. An overview of quantum mechanics is given and applied to understanding confinement effects and their implication for electronic and optical properties in nanostructured materials. It is further used to provide a solid foundation for understanding LCAO, MO theory, and tight binding approximations as powerful tools towards a modern understanding of structure property relationships in materials science, bridging all the way from the atomic scale of structure to macroscopic scale of properties. The course content is reinforced by utilizing interactive simulation programs.

The structure and physical properties of most solids can be understood from fundamental building blocks developed in the last century, namely, crystal structure and symmetry of the organization of atomic nuclei in a solid, and the organization of electrons throughout this periodic Coulombic potential generated by the nuclei in a crystal. These are the essential concepts that will be emphasized in this course. It will begin with a description of crystal structure and diffraction theory to understand the crystal structure in real and momentum spaces in the form of a review. This will be followed by classical and semi-classical description of solids beginning from the free electron theory in metals, to tight binding theory in insulators, and band structure in semiconductors. Examples are given for how these different materials are employed in modern electronics and optoelectronics. One of the unique aspects of this course is that computer simulations will be used to aid in "visualizing" the concepts learnt in the class to develop an intuitive understanding of the structure in solid-state materials and their properties.

The goal of the course is to equip the student with the knowledge necessary to master the modern framework in solid state materials that describes phenomena, such as electronic band structure, electronic transport, and the vibrational and thermal properties of solid state materials at an atomic level, and to prepare them for higher level graduate courses.

The course is suitable for anyone interested in the science and engineering aspects of materials.

PROPOSED START: SU2017

MATSE 556
Polymer and Composite Materials for Additive Manufacturing
ADDITIVE MFG POLYM (3)
This course will focus on how polymers are used in 3D printing including topics of thermal processing, photopolymerization, composites, and modern topics at the intersection of polymer science and additive manufacturing. Of particular importance will be the description of how additive manufacturing processes influence the final properties of polymeric and composite materials. The details of polymer chemistry and material structure will be covered to give students foundational knowledge in materials and additive processes. Basic ASTM processes in additive manufacturing will be described along with hybrid processes and topics in modern research. This course will give students a competitive advantage in understanding both materials and new manufacturing processes. The unique aspects of additive
manufacturing will be discussed in the context of manufacturing economics and its impact on polymer processing as the industry and the technology develops.

PROPOSED START: SU2017

**METEO 891**
Professional Development for Graduate Students
PROF DEV GRADS (1)
The one-credit pass/fail course will offer practical and helpful advice to graduate students who are ready to begin exploring career opportunities. The course will cover professionalism and ethics, writing and reviewing scientific papers, how to succeed at grant writing, post-doctoral opportunities and examples, careers in industry, careers in government and academic, the job application process, how to interview, career planning after college, financial literacy, the value of professional societies for your career, dealing with new media, and leadership development. There will be guest speakers, including successful alumni, university staff, and others whose participation will enhance the value of the class. Finally, students will be paired with an alum in a similar or related discipline and will interview this alum about their career and any advice they would offer a recent graduate. The students will share what they learned during their alumni interviews with the class. Class discussion is strongly encouraged.

PROPOSED START: SU2017

**MKTG 812**
Evaluating Marketing Communications in the Digital World
EVAL MKTG COMM (3)
This course provides students with the basic principles, procedures, and objectives of using analytics to assess digital marketing communications. Course content focuses on key areas of marketing communication evaluation, including audience engagement, messaging and content effectiveness, campaign reach and influence, marketing mix allocation, social sentiment and impact, and mobile and website user experience. Students will gain practical experience with a variety of analytic tools and software.

PROPOSED START: FA2017

**PHS 556**
Cancer Epidemiology
CANCER EPIDEM (3)
Cancer is the second leading cause of death in the U.S. Therefore, public health professionals need to know the basic principles and methods of cancer epidemiology. This course will provide a foundation in basic cancer biology, the frequency of disease for the most common cancers, study design, data analysis, and the interpretation of data for cancer epidemiologic studies. The goal is to provide students with the knowledge and skills to apply epidemiologic methods to design and conduct cancer studies, to know study limitations due to biases, and to critically evaluate epidemiologic studies.

PROPOSED START: SU2017

**PHS 890**
Colloquium
COLLOQUIUM (1-3)
Continuing, professionally oriented seminars that consist of a series of individual lectures by faculty, students, or outside speakers.

PROPOSED START: SU2017
Graduate Council
Program, Option, or Minor Proposal Form

Submit 1 original, signed Graduate Council proposal form and 2 hardcopies of the graduate program proposal document, with a copy of the signed proposal form attached to each proposal copy, to the Curriculum Coordinator, University Faculty Senate, 101 Kern Graduate Building, University Park. The proposals will be transmitted to the Office of the Dean of the Graduate School for entry into the Graduate Council curricular review process; for more information about the process, see the Overview of the Graduate Council Curricular Review Process.

The Program Proposal Procedures provide guidance for the development of a graduate program proposal. If you have questions regarding the preparation of a graduate program proposal or how to complete this Graduate Council proposal form, contact the Office of the Dean of the Graduate School.

College/School: College of Engineering
Department or Instructional Area: Bioengineering

New Graduate Program, Option, or Minor: ☐ Add

Designation of new graduate program:
Classification of Instructional Programs (CIP) Code: 
Designation of new graduate option:
Designation of new graduate minor:

Indicate effective semester:
☐ First semester following approval
☐ Second semester following approval

Existing Graduate Program Option, or Minor: ☐ Change ☒ Drop

Current designation of graduate program: Dropping of the Hershey campus offering
Current designation of graduate option:
Current designation of graduate minor:

New designation of existing graduate program (if changing):
New designation of existing graduate option (if changing):
New designation of existing graduate minor (if changing):

Brief description of the change (if not noted above):

Indicate effective semester:
☒ First semester following approval
☐ Second semester following approval

Submitted by Graduate Program Head

William O. Hancock
Printed name
Signature
Date: 10/4/16

Noted by College/School Representative to Graduate Council Subcommittee on New and Revised Programs and Courses:

M. Vandeveer
Printed name
Signature
Date: 10/18/16

Approved by College/School Dean/Chancellor (or Designee):

M. Vandeveer
Printed name
Signature
Date: 10/8/16
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October 4, 2016

To Whom It May Concern:

The purpose of this letter is to formally request that the option for application to the Hershey Medical Center Campus for the Bioengineering IGDP be dropped in the GRADS application form. There is one Bioengineering IGDP at Penn State that encompasses both the UP and HY campuses, and is administered from the UP campus. Students who may do their research at Hershey should apply to the IGDP independent of campus, and having the HY option confuses everybody.

Sincerely,

William O. Hancock, Ph.D.

William O. Hancock, Ph.D.
Jenna N. Sieber

From: Lang, Charles <clang@hmc.psu.edu>
Sent: Tuesday, October 4, 2016 10:49 AM
To: Jenna N. Sieber
Subject: RE: Removing HY Campus From GRADS

Jenna,
I've spoken with all parties involved down here at HY and no one expresses any concern regarding this change. Please feel free to make change as time permits. Thanks for seeking our input.
Chuck

From: Jenna N. Sieber [mailto:jns5431@engr.psu.edu]
Sent: Tuesday, October 04, 2016 9:42 AM
To: chl1@psu.edu
Subject: Removing HY Campus From GRADS

Good morning Charles,

We would like to remove the Hershey Campus option from GRADS (Graduate Admission Decision System). Due to there being only one Bioengineering IGDP at Penn State that encompasses both UP and HY campuses, but is administered from only the UP campus. Students who may complete their research at Hershey should apply to the IGDP independent of campus. When we list the HY option, it confuses a lot of people.

I just wanted to reach out to you to make sure that you were okay with this change before we proceed. Please feel free to discuss with any of your necessary parties at Hershey and let me know.

Thank you,
Jenna

Jenna Sieber
Graduate Program Assistant
Biomedical Engineering Department
Penn State University
205 Hallowell Building
University Park, PA 16802
p: 814-865-8087
f: 814-863-0490
www.bioe.psu.edu

PennState
College of Engineering
Bioengineering (BIOE)

Program Home Page

WILLIAM HANCOCK, Professor and Chair of the Intercollege Graduate Degree Program in Bioengineering
205 Hallowell Building
814-865-1407
814-863-0490 (Fax)

Degrees Conferred:
Ph.D., M.S.

This intercollege program provides graduate-level training in engineering, the life sciences, and their integration. Students graduating from this program will have acquired expertise in the application of engineering principles to fundamental problems in biology, clinical problems in medicine, or in the development of new biomedical instrumentation. They are also expected to produce scholarly work to be published in peer-reviewed journals and presented at national conferences. Graduate curricula and student assessment in bioengineering is under the direction of the program chair and a graduate curriculum committee that is composed of graduate faculty representing several departments in the Colleges of Engineering, Health and Human Development, Science, and Medicine.

Opportunities for specialized research are offered by graduate faculty working on electrical, mechanical, and biophysical properties of biological materials and the application of this knowledge to understanding molecular, cellular, tissue, and organ level processes involved in health and disease. Specific applications include: artificial organs, biomaterials, bioMEMs, nanotechnology, biophotonics, cellular and medical imaging, cardiovascular engineering, cell signaling and protein dynamics, mechanobiology, neural interfaces, tissue engineering, and regenerative medicine. Extensive computer facilities and specialized equipment are available to support a combination of studies that employ experimental observations and their analysis through mathematical modeling and computer simulations.

Admission Requirements
Requirements listed here are in addition to requirements stated in the GENERAL INFORMATION section of the Graduate Bulletin. Applicants apply for admission to the program via the Graduate School application for admission.

Students with a degree in engineering, physics, or the life sciences are eligible for admission. All students must have a strong background in physics and mathematics. This background should include chemistry, calculus-based physics, and mathematics through calculus and differential equations. Students who lack this background may still be considered for provisional admission but will have to make up any deficiency early in their graduate program. These remedial courses will be required in addition to the stated graduate program course requirements. Students with a 3.0 junior/senior grade-point average and with appropriate course backgrounds will be considered for admission. The best-qualified applicants will be accepted up to the number of spaces available. Exceptions to the minimum average may be made for students with special backgrounds, abilities, and interests, at the discretion of the program.
Scores from the Graduate Record Examinations (GRE) are required for admission. However, at the discretion of the program a student may be admitted for graduate study in the Bioengineering program without these scores.

Master's Degree Requirements

Requirements listed here are in addition to requirements stated in the DEGREE REQUIREMENTS section of the Graduate Bulletin.

A minimum of 30 credits are required for a Master’s Degree in Bioengineering, with at least 24 credits at the 500, 600, or 800 level. Students must take the following: at least 12 credits of lecture- or laboratory-based coursework at the 500-level, an additional 6 credits of lecture- or laboratory-based coursework at the 400- or 500-level, a 1-credit research ethics course (BIOE 591), a 1-credit graduate seminar for every semester in attendance, and a minimum of 6 credits of 600-level thesis research.

Courses: Upon entering the program, a student, along with his/her research adviser, will select an academic advisory committee, consisting of three members of the IDGP in Bioengineering Graduate Faculty (including the adviser). Working with this committee, students will select courses appropriate to their research and their professional goals. Students must select at least 18 credits of lecture- or laboratory-based courses that include at least 12 credits at the 500-level and the remaining credits at the 400- or 500-level. Coursework must include at least 6 credits each in bioengineering, life sciences, and technical/quantitative electives. In addition, students will register for the graduate program seminar series during each of the semesters in attendance and will complete a 1-credit research ethics course (BIOE 591). Students will select additional coursework and research credits from a list of approved electives maintained by the program office, as appropriate, to obtain the total minimum of 30 credits.

Graduate credits earned at other institutions but not used to earn a degree may be used to satisfy master’s degree requirements, subject to restrictions outlined in the Transfer Courses section of the Graduate Bulletin.

Thesis: A thesis is required for the M.S. degree. This thesis will be defended in front of the student’s academic advisory committee. The thesis must be accepted by the academic advisory committee members, the head of the graduate program, and the Graduate School, and the student must pass a thesis defense.

Doctoral Degree Requirements

Requirements listed here are in addition to requirements stated in the DEGREE REQUIREMENTS section of the Graduate Bulletin.

Courses: Upon entering the program, a student, along with his/her research adviser, will select an academic advisory committee, consisting of three members of the IDGP in Bioengineering Graduate Faculty (including the adviser). Working with this committee, students will select courses appropriate to their research and their professional goals. Students must select courses totaling at least 6 credits each in bioengineering, life sciences, and technical/quantitative electives. At least 12 credits must be lecture- or laboratory-based (not independent study) and at the 500-level. Students must then complete at least 6 additional credits at the 500-level in courses relevant to their research. In addition to these minimum 24 course credits, students will register for the graduate program seminar series for every semester until
passing the comprehensive exam and will complete a 1-credit graduate course in bioengineering ethics (BIOE 591). The total minimum number of course credits to be completed is 29, which includes 24 course credits (with at least 18 course credits at the 500-level and the remaining credits at the 400-level or above), 1 credit of bioengineering ethics, and at least 4 graduate seminar credits. 600-level research credits are assigned every semester in attendance. Graduate credits earned at other institutions, including those used toward a degree, may be used to satisfy some of the Ph.D. degree requirements at Penn State, but in these cases credits are not transferred. Regardless of previous courses taken, every doctoral student must take a minimum of 6 course credits at the 500-level at the University Park campus.

Supporting courses are available at University Park in anatomy, biochemistry, biology, biophysics, chemistry, laboratory animal medicine, materials science, mathematics, physics, physiology, and the engineering departments.

Exams: After completion of the first year, completion of at least 18 graduate credits and within three semesters (not including summer) of entry into the doctoral program, all students must complete and pass the candidacy exam, which consists of a written research proposal and oral defense of that proposal on a topic other than the subject of the student’s dissertation. This exam also tests for English competency, which is a Graduate Council requirement. A comprehensive examination consisting of a written research proposal and oral defense of that proposal on the student’s Ph.D. dissertation topic is administered by the student’s doctoral committee, typically at the end of second year of residency. A final oral examination based on a defense of the doctoral dissertation is required of all candidates. This exam occurs typically after the fourth or fifth year of residency and consists of a formal public seminar followed by a closed meeting of the doctoral committee and the candidate.

In preparation for the comprehensive exam, students, along with their adviser, will choose a doctoral committee in accordance with Graduate Council policy. The doctoral committee consists of a minimum of four members of the Graduate Faculty including the adviser who serves as the chair. The adviser must be a member of the Intercollege Graduate Degree Program (IGDP) in Bioengineering. At least three committee members must be members of the IGDP in Bioengineering. The committee must also include an “Outside Field Member” who is not a member of the IGDP in Bioengineering. Finally, at least one member of the doctoral committee must have his/her primary appointment outside the administrative unit in which the adviser’s primary appointment is held. The Graduate School will appoint the committee and notify all persons.

To earn the Ph.D. degree, doctoral candidates must write a dissertation that is accepted by the doctoral committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).

Student Aid

Graduate assistantships and other forms of student aid are described in the STUDENT AID section of the Graduate Bulletin. Students on graduate assistantships must adhere to the course load limits set forth in the Graduate Bulletin.

Courses
Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

BIOENGINEERING (BIOE) course list: http://www.bioe.psu.edu/students/GRCourses.html
Last reviewed by Graduate School:
Last updated by Publications:
Graduate Council  
Program, Option, or Minor Proposal Form

1. Submit 1 original, signed Graduate Council proposal form and 2 hardcopies of the graduate program proposal documents, with a copy of the signed proposal form attached to each proposal copy, to the Curriculum Coordinator, University Faculty Senate, 101 Kern Graduate Building, University Park. The proposals will be transmitted to the Office of the Dean of the Graduate School for entry into the Graduate Council curricular review process; for more information about the process, see the Overview of the Graduate Council Curricular Review Process.

2. The Program Proposal Procedures provide guidance for the development of a graduate program proposal. If you have questions regarding the preparation of a graduate program proposal or how to complete this Graduate Council proposal form, contact the Office of the Dean of the Graduate School.

3. College/School: Health and Human Development  
   Department or Instructional Area: Human Development and Family Studies (HDFS)

4. New Graduate Program, Option, or Minor: ✔ Add
   Designation of new graduate program:
   Classification of Instructional Programs (CIP) Code: ____________________________
   Designation of new graduate option: Dual Title in HDFS and Social Data Analytics
   Designation of new graduate minor: ____________________________

5. Indicate effective semester:
   ☐ First semester following approval  
   ☐ Second semester following approval

6. Existing Graduate Program Option, or Minor: ☐ Change  ✔ Drop
   Current designation of graduate program: ____________________________
   Current designation of graduate option: Dual Title in HDFS and Comparative & International Education (CIEED)
   Current designation of graduate minor: ____________________________

7. New designation of existing graduate program (if changing):
   New designation of existing graduate option (if changing):
   New designation of existing graduate minor (if changing):

8. Brief description of the change (if not noted above):

9. Indicate effective semester:
   ☐ First semester following approval  
   ☐ Second semester following approval

10. Submitted by Graduate Program Head:
    Lisa Gatke-Kopp  
    Printed name: ____________________________  
    Signature: ____________________________  
    Date: 9/28/16

11. Noted by College/School Representative to Graduate Council Subcommittee on New and Revised Programs and Courses:
    John Chailis  
    Printed name: ____________________________  
    Signature: ____________________________  
    Date: 9/30/2016

12. Approved by College/School Dean/Chancellor (or Designee):
    Kathryn Drager  
    Printed name: ____________________________  
    Signature: ____________________________  
    Date: 9-28-16
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For use by Graduate Council only.
A Proposal to Graduate Council to Adopt the Dual-Title Doctoral Degree Program in Social Data Analytics

Submitted by
Department of Human Development & Family Studies

Contact:
Doug Teti
Head, Department of Human Development & Family Studies
HHD 105
814-863-9570
dmt16@psu.edu

Lisa Gatzke-Kopp
Professor-in-Charge of Human Development & Family Studies Graduate Program
HHD 228
814-867-2371
lmk18@psu.edu
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I. Overview

The graduate program in Human Development & Family Studies (HDFS) proposes to adopt the dual-title Ph.D. degree program in Social Data Analytics.

The graduate program in Human Development & Family Studies proposes to eliminate its association with the dual title in Comparative & International Education (CI ED).

II. Justification for the Dual-Title Ph.D. in HDFS and Social Data Analytics

Easy access to exceptionally large data sets, the ability to collect detailed and time-intensive data that create large person-based observational matrices to study change, the growing availability of high dimensional relational data, and the possibility of capturing millions of observations from social media or web-based applications has spurred the development of techniques to manage and analyze massive amounts of data. These developments in data science and analytics are creating a new trans-disciplinary field of inquiry, which combines statistics, computer science, and visual analytics. Socially-generated big data capturing networks of interactional data present the social sciences with an opportunity to develop analytic tools that address the structure and content of these interactions. Although the underlying social processes are addressed by sociological theory, these structural concepts and the processes in which they are embedded have been difficult to test. New interaction technologies, such as web-based exchanges recorded in real-time, mobile devices, and distributed sensors have added a quantifiable dimension to these core dynamics of social relationships. Digitization, sharing of document and image archives, and unprecedented increases in data storage capacity have transformed what was once a scarce resource—information—into massive compilations of data that can be linked, visualized, and transformed. The challenge is to develop appropriate techniques that allow us to organize this information into meaningful patterns of social relevance.

Many of the standard techniques of data analysis are based on the assumption of limited information sampled from large populations. The goal was to connect the findings from analyzing sample data to the population. Extensive technical literatures were developed to apply probability theory to sampling, weighting, measurement, and analysis. Big and complex social data challenge these conventional inferential research models in the social sciences, computational and information sciences, and statistics and visualization. The scale and complexity of data expanded faster than the capabilities of hardware, algorithms, and research designs of conventional social science, forcing us to catch up and adapt to data availability. At the same time, theoretical foundations of data analytics must drive the techniques, and both are moving quickly. Although the traditional training in research methodology provided by Ph.D. programs builds an essential foundation for data analytics, big and complex social data require additional strategies that reflect the emerging contexts of social research.

In 2009, the Penn State Quantitative Social Science Initiative, with the Department of Human Development & Family Studies as a core member, began discussions with faculty across Penn State about mechanisms for leveraging existing and emerging strengths in component disciplines to develop an interdisciplinary training model to meet these challenges. These efforts culminated in 2012 with a $3
million award from the National Science Foundation’s Integrative Graduate Education and Research Traineeship (IGERT) program (which has received further support totaling over $2 million from the College of Liberal Arts, the College of Human Health & Development, the College of Information Sciences & Technology, the College of Sciences, the College of Earth & Mineral Sciences, the College of Engineering, the Social Science Research Institute, the Institute for CyberScience, and the Office of the Vice President for Research) to develop a new model for interdisciplinary Ph.D. training in “Big Data Social Science,” to be instantiated in a new dual-title Ph.D. program in “Social Data Analytics.”

Since 2012, the Big Data Social Science IGERT (BDSS-IGERT) has funded three cohorts totaling 19 Ph.D. students, and selected a fourth cohort of six Ph.D. students – in Political Science, Human Development & Family Studies, Sociology, Demography, Statistics, Geography, and Information Sciences & Technology – for two-year traineeships involving research rotations, collaborative research projects, externships, and a transitional curriculum in Social Data Analytics. The proposal for the Social Data Analytics dual-title was developed, refined, and detailed in the multiyear IGERT proposal process, and refined through the experience of the first three years of BDSS-IGERT.

A unique and defining feature of the proposed Social Data Analytics dual-title Ph.D. degree program, within the current explosion of programs in “data science,” “analytics,” “big data,” and similar areas, is the integration of social science perspectives to the field of study. We distinguish this, sharply, from the usual characterization of social science as a “domain” of data science, and characterize social scientific thinking as a core pillar of Social Data Analytics.

Further, the multidisciplinary, comparative intellectual vision of the proposed Dual-Title Doctoral Degree Program in Social Data Analytics is fundamental to the mission of Penn State’s College of the Liberal Arts (CLA), as set forth in the College’s Strategic Plan for 2014-2019, titled “Excellence for the 21st Century.” In this document, CLA makes the following commitment to the development of new and exciting intellectual programs, including dual-title doctoral degree programs:

“Drawing on our past success with innovative dual-title Ph.D. programs, we will continue to invest strategically in new interdisciplinary dual-title programs. Specifically, we will continue to provide substantial support for our NSF-funded big data social science IGERT graduate training program, which spans several disciplines and colleges. We aim to develop a dual-title Ph.D. program in Social Data Analytics and create an undergraduate degree and M.P.S. in social data analytics both in-residence and online.”

Despite the push for training in the field of Big Data and Social Science, only a few cohesive doctoral level programs exist to date, and most do not provide multidisciplinary degrees: Stanford’s Social Data Lab and Harvard’s Institute for Quantitative Social Science are great examples of sites for big data research in the social sciences, but do not offer doctoral programs. Most of the programs available are

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1 The IGERT (and now National Research Traineeship - NRT) programs are highly competitive and an explicit strategic target of the University’s Strategic Initiatives and Research Office (SIRO). SIRO’s official best practice guidelines, which govern the internal “downselect” process to determine the Penn State submission, include the proposal of a dual-title degree: https://www.research.psu.edu/limitedsubs/information/igert/IGERT_BP_Recomm.pdf. Penn State’s only other successful IGERT is instantiated in the Dual-Title Graduate Program in Biogeochemistry: http://www.biogeochemistry.psu.edu/.

2 http://www.la.psu.edu/about/documents/LiberalArtsStrategicPlan81214.pdf/at_download/file
master’s degree programs, and few, if any, focus on big data in the social sciences. Anecdotal evidence of extensive interest in this type of program is found in the queries, calls, and emails received from students, directors of graduate studies, and other faculty since the announcement of the Big Data Social Science IGERT award at Penn State in September 2012. The dual-title program will leverage the collaborative relationships, activities, and funding established within the ongoing IGERT program as a foundation on which to build a program for the study of big data integrating a social science orientation. Owing to its uniqueness, the proposed program provides an academic niche, which will contribute to Penn State’s vision of becoming a leader in multidisciplinary, international, and multicultural scholarship. Moreover, we aim not only to place graduates in highly competitive academic positions to lead this new science, but also to demonstrate the relevance of Ph.D. training for some portion of those nonacademic positions in “deep analytics.” These career goals challenge the conventional approach of Ph.D. education in the social sciences, where academic employment has been the primary focus.

For students in Human Development & Family Studies, the Social Data Analytics dual-title offers an intellectual opportunity to combine the strength of developmental and family methodology with interdisciplinary approaches to big data and analytics. An essential component of this training involves instruction by faculty from computational, informational, statistical, and visual analytic sciences, as well as other social sciences.

In summary, the proposed dual-title Ph.D. in Human Development & Family Studies and Social Data Analytics will:

- Provide a cohesive curriculum for in-depth training in human development and family processes sufficient to succeed as a developmental and/or family scientist and a breadth of training across computational, informational, statistical, and visual analytic sciences sufficient to be a leader in the emerging field of social data analytics.
- Train HDFS Ph.D.s to play a leadership role in expanding the capabilities of social data analytics and use those capabilities in creative ways to answer important social scientific questions.
- Supply to both the academic and nonacademic markets, HDFS Ph.D.s whose training improves their ability to consider diverse perspectives on social data access, use, and distribution and in considering those issues, to prioritize ethics, scientific responsibility, and social consequences.
- Enhance their communication skills so they can make the complexity and the challenges of Social Data Analytics accessible to members of both scientific and nonscientific communities and expert and general audiences.

III. Description of Required Social Data Analytics Course Work

A. General Course Work Requirements in the Dual-Title Ph.D. program in Social Data Analytics

The minimum course work requirements for the dual-title Ph.D. degree in Social Data Analytics are as follows:
• Course work and other requirements for the primary program.
• SO DA 501 (3 credits)
• SO DA 502 (3 credits)
• 12 or more elective credits in Social Data Analytics from a list of courses maintained by the Social Data Analytics Committee. Collectively the elective credits must satisfy the following requirements:
  o (A) Core analytics distribution. 3 or more credits in courses focused on statistical learning, machine learning, data mining, or visual analytics. Courses approved as meeting this requirement are designated (A) on the list of approved electives.
  o (Q) Quantification distribution. 6 or more credits in courses focused on statistical inference or quantitative social science methodology. Courses approved as meeting this requirement are designated (Q) on the list of approved electives.
  o (C) Computational / informational distribution. 6 or more credits in courses focused on computation, collection, management, processing, or interaction with electronic data, especially at scale. Courses approved as meeting this requirement are designated (C) on the list of approved electives.
  o (S) Social distribution. 6 or more credits in courses with substantial content on the nature of human interaction and/or the analysis of data derived from human interaction and/or the social context or ethics or social consequences of social data analytics. Courses approved as meeting this requirement are designated (S) on the list of approved electives.
  o Cross-departmental distribution.
    ▪ 3 or more credits in approved courses with the prefix STAT or that of a primarily social science department.
    ▪ 3 or more credits in approved courses with the prefix IST, GEOG, or that of a primarily computer science or engineering department.
    ▪ 6 or more credits in approved courses outside the primary program.
    ▪ 3 or fewer credits in approved courses at the 400-level.

Students or faculty may request that the Social Data Analytics Committee consider approval of elective designations for any course, including temporary approvals for experimental or variable-title courses. Students are encouraged to take interdisciplinary courses that carry multiple (A), (Q), (C), (S) designations, as well as to select SO DA electives that also meet requirements of the primary program. Within this framework, final course selection is determined by the student in consultation with academic advisers from their home department and Social Data Analytics.

Through satisfaction of home degree requirements and appropriate choice of electives to satisfy multiple criteria, students may fulfill these requirements with as few as 12 credits outside their home program (SO DA 501, SO DA 502, and 6 credits of appropriate interdisciplinary electives). In particular, students are encouraged to take courses carrying multiple AQCS designations.

There is no formal maximum number of credits from the primary degree that can be double-counted toward the SO DA degree. For those meeting the SO DA elective requirement with the minimum of 12 credits, the outside-program minimum effectively limits the number of primary degree credits that count toward SO DA at 6. Adopting programs and advising committees may limit the number of credits taken for the SO DA degree that can count toward home degree requirements.
B. Course Work Requirements, Dual-Title Ph.D. in HDFS and Social Data Analytics

The following provides a side-by-side summary of how Social Data Analytics course work requirements interact with HDFS course work requirements in the dual-title Ph.D. in HDFS and Social Data Analytics.

Table 1. Comparison of Course work Requirements

<table>
<thead>
<tr>
<th></th>
<th>Ph.D. in HDFS</th>
<th>Ph.D. in HDFS &amp; Social Data Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total credits</td>
<td>A minimum of 40.5 post-baccalaureate credits of course work.</td>
<td>A minimum of 40.5 post-baccalaureate credits of course work.</td>
</tr>
<tr>
<td>Required substantive core courses</td>
<td>All students must take the following courses:</td>
<td>All students must take the following courses:</td>
</tr>
<tr>
<td></td>
<td>• HDFS 501 (3 credits)</td>
<td>• HDFS 501 (3 credits)</td>
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<tr>
<td></td>
<td>• HDFS 503 (3 credits)</td>
<td>• HDFS 503 (3 credits)</td>
</tr>
<tr>
<td></td>
<td>• HDFS 525 (3 credits)</td>
<td>• HDFS 525 (3 credits)</td>
</tr>
<tr>
<td>Required methods course work</td>
<td>• HDFS 516 (3 credits)</td>
<td>• HDFS 516 (3 credits)</td>
</tr>
<tr>
<td></td>
<td>• HDFS 519 (3 credits)</td>
<td>• HDFS 519 (3 credits)</td>
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<tr>
<td></td>
<td>• HDFS 523 (3 credits)</td>
<td>• HDFS 523 (3 credits)</td>
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<tr>
<td></td>
<td>• HDFS 526 (3 credits)</td>
<td>• HDFS 526 (3 credits)</td>
</tr>
<tr>
<td></td>
<td>These also satisfy certain SO DA distribution requirements.</td>
<td>These also satisfy certain SO DA distribution requirements.</td>
</tr>
<tr>
<td>Methodology electives</td>
<td>A minimum of 6 additional credits in methodology.</td>
<td>A minimum of 6 additional credits in methodology.</td>
</tr>
<tr>
<td></td>
<td>These also satisfy certain SO DA distribution requirements.</td>
<td>These also satisfy certain SO DA distribution requirements.</td>
</tr>
<tr>
<td>Additional electives</td>
<td>A minimum of 12 additional credits in 400 &amp; 500 level courses, 9 of which must be in HDFS seminars</td>
<td>A minimum of 12 additional credits in 400 &amp; 500 level courses, 9 of which must be in HDFS seminars</td>
</tr>
<tr>
<td></td>
<td>These also satisfy certain SO DA distribution requirements.</td>
<td>These also satisfy certain SO DA distribution requirements.</td>
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<tr>
<td>Professional development seminar</td>
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<td></td>
<td></td>
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<tr>
<td>Required Social Data Analytics core seminars</td>
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<tr>
<td>---------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• SO DA 501 (3 credits)</td>
<td></td>
<td></td>
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<tr>
<td>• SO DA 502 (3 credits)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SO DA-approved distribution electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 or more credits in approved courses,</td>
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<tr>
<td>collectively meeting the following distribution</td>
</tr>
<tr>
<td>requirements:</td>
</tr>
<tr>
<td>• A: Analytics (3+ cr)</td>
</tr>
<tr>
<td>• Q: Quantification (6+ cr)*</td>
</tr>
<tr>
<td>• C: Computational/informational (6+ cr)</td>
</tr>
<tr>
<td>• S: Social (6+ cr)*</td>
</tr>
<tr>
<td>• Cross-department distribution</td>
</tr>
<tr>
<td>• 6 or more credits outside HDFS</td>
</tr>
<tr>
<td>• 3 or more credits in disciplinary cluster 1:</td>
</tr>
<tr>
<td>STAT or social science*</td>
</tr>
<tr>
<td>• 3 or more credits in disciplinary cluster 2:</td>
</tr>
<tr>
<td>IST, GEOG, CSE, CMPSC or engineering</td>
</tr>
<tr>
<td>• 3 or fewer credits at the 400-level.</td>
</tr>
</tbody>
</table>

* The Q, S, and social science elective requirements are fulfilled by the methods sequence courses in the HDFS Ph.D.

The remaining 6 of the above 12 credit elective requirements can be met by as few as two courses, as long as one course is in the GEOG/IST/Engineering cluster, the other is outside HDFS, both carry the C designation, and one carries the A designation. Examples of such pairs:

- IST 557 (Data Mining: Techniques and Applications) & STAT 540 (Statistical Computing)
- STAT 557 (Data Mining I) & GEOG 560 (Seminar in Geographic Information Science)
- I E 561 (Data Mining Driven Design) & CSE 583 (Pattern Recognition—Principles and Applications)
C. Example Course Work Path, Dual-Title Ph.D. in HDFS and Social Data Analytics

Table 2 illustrates an example path through course work and other milestone requirements of the dual-title Ph.D. in HDFS. It is modeled on course paths actually taken by HDFS Ph.D. students in BDSS-IGERT.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Department/#</th>
<th>Course Title</th>
<th>A</th>
<th>Q</th>
<th>C</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>HDFS 501</td>
<td>Human Development (3 credit)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 525</td>
<td>Introduction to Family Studies (3 credit)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 516</td>
<td>Methods of Research in Human Development (3 credit)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 518</td>
<td>Applied Statistics Lab (1 credit)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 596A</td>
<td>Grad Student Orientation (1 credit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>HDFS 503</td>
<td>Human Development Intervention (3 credit)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 519</td>
<td>Methods of Statistical Analysis in Human Development (3 credit)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 546</td>
<td>Family Relationships and Health Seminar (3 credits)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>HDFS 600</td>
<td>Thesis Credits (3 credits)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Department/#</th>
<th>Course Title</th>
<th>A</th>
<th>Q</th>
<th>C</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>HDFS 526</td>
<td>Measurement in Human Development (3 credits)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 569</td>
<td>Midlife Seminar (3 credits)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IST 557</td>
<td>Data Mining: Techniques and Applications (3 credits)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 600</td>
<td>Thesis Credits (3 credits)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>HDFS 523</td>
<td>Data Analysis in Developmental Research (3 credits)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 515</td>
<td>Professional Issues in HDFS (1.5 credits)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDFS 530</td>
<td>Longitudinal SEM (3 credit)</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>
### Year 3

<table>
<thead>
<tr>
<th>Department/#</th>
<th>Course Title</th>
<th>A</th>
<th>Q</th>
<th>C</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO DA 502</td>
<td>Issues in Social Data (3 credits)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>HDFS 534</td>
<td>Person Specific Data Analysis (3 credits)</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>STAT 540</td>
<td>Statistical Computing (3 credits)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDFS 596</td>
<td>Individual Studies (6 credits)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDFS 539</td>
<td>Adolescent Development (3 credits)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

* Candidacy: Semester 6  
* Comprehensive exam: Semester 8  
* Dissertation proposal defense: Semester 9

| 3 | 28 | 6 | 37 |

This example satisfies HDFS course requirements:

- Required courses (22.5 cr + 6 credits of thesis hours): HDFS 501, HDFS 503, HDFS 525, HDFS 516, HDFS 519, HDFS 523, HDFS 526, HDFS 515, HDFS 600
- 6 additional Methods Credits (6cr): HDFS 530, HDFS 534
- 12 additional credits in 400 & 500 level courses, 9 of which must be in HDFS seminars (24 cr > 12 cr): HDFS 546, HDFS 539, HDFS 569, IST 557, SO DA 501, SO DA 502, HDFS 534, STAT 540,

This example satisfies Social Data Analytics course requirements:

- Required courses (6 cr): SO DA 501, SO DA 502
- SO DA-approved electives (43 cr > 12 cr): All courses marked A, Q, C, or S in Table 2.
- Analytics distribution (3 cr = 3 cr): IST 557,
- Quantification distribution (28 cr > 6 cr): 8 HDFS courses, IST 557, STAT 540
- Computational / informational distribution (6 cr = 6 cr): IST 557, STAT 540,
- Social distribution (37 cr > 6 cr): 13 HDFS courses,
- Disciplinary cluster 1 (STAT / Social Science) (40 cr > 3 cr): 13 HDFS courses, STAT540
- Disciplinary cluster 2 (IST / GEOG / Engineering) (3cr = 3cr): IST 557
- Out-program distribution (non-HDFS) (6 cr = 6cr): IST 557, STAT 540

**IV. Additional Requirements, Dual-Title Ph.D. in Social Data Analytics**

The following provides a side-by-side summary of how additional Social Data Analytics requirements compare to and interact with HDFS requirements in the dual-title Ph.D. in HDFS and Social Data
Table 3. Comparison of Other Requirements

<table>
<thead>
<tr>
<th>Ph.D. in HDFS</th>
<th>Ph.D. in HDFS &amp; Social Data Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Candidacy Committee</strong></td>
<td><strong>Candidacy Committee</strong></td>
</tr>
<tr>
<td>Prior to candidacy exam, a dossier is created that contains: list of courses and grades, CV, prior plans of study, and statement of professional educational goals and plans, timeline, and writing sample. The statement of goals and plans must include future courses, research activities, teaching activities, and other aspects of professional development. The student, in consultation with the Graduate Professor-in-Charge, selects a candidacy committee to represent all 4 areas of the department (methodology, individual, family, and prevention). The committee makes a recommendation to the HDFS faculty at large, and the HDFS faculty vote on the outcome of the candidacy exam. After admission to candidacy, Ph.D. students complete an annual plan of study and meet with their advisers for the purpose of discussing the candidates’ progress on their plans of study and revising such plans as appropriate. The adviser makes a recommendation to the Graduate Professor-in-Charge each year on the student’s status in the program.</td>
<td>Prior to candidacy exam, a dossier is created that contains: list of courses and grades, CV, prior plans of study, and statement of professional educational goals and plans, timeline, and writing sample. The statement of goals and plans must include future courses, research activities, teaching activities, and other aspects of professional development. The student, in consultation with the Graduate Professor-in-Charge, selects a candidacy committee to represent all 4 areas of the department (methodology, individual, family, and prevention). The committee makes a recommendation to the HDFS faculty at large, and the HDFS faculty vote on the outcome of the candidacy exam. After admission to candidacy, Ph.D. students complete an annual plan of study and meet with their advisers for the purpose of discussing the candidates’ progress on their plans of study and revising such plans as appropriate. The adviser makes a recommendation to the Graduate Professor-in-Charge each year on the student’s status in the program.</td>
</tr>
<tr>
<td><strong>Candidacy Exam</strong></td>
<td><strong>Candidacy Exam</strong></td>
</tr>
<tr>
<td>Held the semester after the completion of the Master’s degree, usually Fall 3rd year (or earlier if they enter the program with an empirical master’s degree from another program).</td>
<td>Because students must first be admitted to a graduate major program of study before they may apply to and be considered for admission into a dual-title graduate degree program, dual-</td>
</tr>
</tbody>
</table>

There will be a single candidacy exam, containing elements of both HDFS and Social Data Analytics. The candidacy committee must contain at least one member from the Social Data Analytics graduate faculty. Faculty members who hold appointments in both programs’ graduate faculty may serve in a combined role.
<table>
<thead>
<tr>
<th>Doctoral Committee</th>
<th>Doctoral Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>The doctoral committee must conform to all requirements of the Graduate Council. In accordance with Graduate Council requirements, the doctoral committee is composed of at least four members of the graduate faculty, at least one of whom must be from outside the HDFS department or represent a different disciplinary perspective (based on scholarly work or field in which the Ph.D. was received). The committee must include at least two HDFS faculty members, and more generally, faculty members with recognized expertise in the areas of specialization selected by the student. One faculty member is designated chair of the doctoral committee; ordinarily this person also serves as general adviser and director of the dissertation. Students are strongly encouraged to choose a committee chair as early as possible.</td>
<td>The doctoral committee must conform to all requirements of the Graduate Council. In accordance with Graduate Council requirements, the doctoral committee is composed of at least four members of the graduate faculty, at least one of whom must be from outside the HDFS department or represent a different disciplinary perspective (based on scholarly work or field in which the Ph.D. was received). In addition, at least one of the committee members must be a member of the Social Data Analytics graduate faculty. Faculty members who hold appointments in both programs’ graduate faculty may serve in a combined role. If the committee chair does not serve in this combined role, Graduate Council policy dictates that the Social Data Analytics graduate faculty member must be designated as co-chair of the committee. The committee must include at least two HDFS faculty members, and more generally, faculty members with recognized expertise in the areas of specialization selected by the student. The ideal arrangement is for a member of the Social Data Analytics graduate faculty with primary appointment in the primary program to act as chair of the doctoral committee, and for a member of the Social Data Analytics graduate faculty with primary appointment outside the administrative unit of the primary program to act as both Outside Field Member and Outside Unit Member.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comprehensive Exam</th>
<th>Comprehensive Exam</th>
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<tbody>
<tr>
<td>The comprehensive examination consists of written and oral segments. The student will prepare a list of 80-100 readings, and a</td>
<td>The comprehensive examination consists of written and oral segments. The student will prepare a list of 80-100 readings, and a</td>
</tr>
</tbody>
</table>
statement of research interests. The doctoral committee will compile questions for the student. The student has a 2-3 month reading period, and then, upon receiving the questions, 3 weeks to write a 40-60 page response.

The oral portion of the comprehensive examination is a scheduled meeting of the candidate with the candidate’s doctoral committee. Normally, the oral part of the exam occurs within one month of the written exam. The oral exam is an occasion for feedback and discussion of the student’s written examination performance.

<table>
<thead>
<tr>
<th>Dissertation Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>The dissertation proposal occurs after passing the comprehensive exam, and includes a written proposal and an in-person meeting. The student submits a dissertation proposal to the doctoral committee, which then meets with the student to discuss the proposal, provide feedback, and approve the dissertation plan.</td>
</tr>
</tbody>
</table>

Dissertation Defense

Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. The oral examination is administered by the doctoral committee. The dissertation must be accepted by the doctoral committee, the head of the graduate program, and the Graduate School.

<table>
<thead>
<tr>
<th>Dissertation Defense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. The oral examination is administered by the doctoral committee. The student must write and orally defend a dissertation that reflects their original research and education in HDFS and Social Data Analytics. The dissertation must be accepted by the doctoral committee, the head of the graduate</td>
</tr>
</tbody>
</table>

The written comprehensive exam will incorporate material on Social Data Analytics. The Social Data Analytics graduate faculty member on the doctoral committee will participate in the writing of the exam questions and evaluation of the examination.

The oral portion of the comprehensive examination is a scheduled meeting of the candidate with the candidate’s doctoral committee. Normally, the oral part of the exam occurs within one month of the written exam. The oral exam is an occasion for feedback and discussion of the student’s written examination performance.
V. Proposed Amendment to Graduate Bulletin for Human Development & Family Studies (HDFS)

(Changes relevant to dual-title program tracked in red. NOTE: We are using this opportunity to update our Graduate Bulletin entry for the overall program and include a description of our dual-title program in HDFS and Demography comparable to that of SoDA. In that sense, this entire entry changes the text under Human Development & Family Studies)

Human Development and Family Studies (HD FS)

Program Home Page
(Opens New Window)
DOUGLAS M. TETI, Department Head, Human Development and Family Studies
LISA GATZKE-KOPP, Professor in Charge of Graduate Programs in Human Development and Family Studies
119 Health and Human Development
814-863-8000

Degrees Conferred
Ph.D., M.S. (The program does not admit applicants for the terminal master's degree.)
Dual-Title M.S. and Ph.D. in HDFS and Demography
Dual-Title Ph.D. in HDFS and Social Data Analytics

The Graduate Faculty

The Program
This interdisciplinary program is one of the graduate programs of the College of Health and Human Development. It is administered through the Department of Human Development and Family Studies. The Human Development and Family Studies graduate program is designed to educate students about research, theory, and methodology related to the study of individuals and families across diverse populations and diverse settings. There is a strong interest in the ways in which social institutions and settings such as day care facilities, schools, neighborhoods, and social policy institutions facilitate (or inhibit) opportunities for development and change for individuals and families. Understanding the characteristics and conditions that place individuals or families at risk for developing problems, designing effective prevention programs to address those risks, and mounting rigorous evaluations of such programs is a growing emphasis in the program. All students, regardless of substantive area, are encouraged to develop strong skills in research methods, a hallmark of our graduate training. Through course work and apprenticeship experiences, students develop an understanding of the program's multidisciplinary life span/life course, and applied orientation. As students progress through the program, they are expected to develop specialized expertise in two or more of the department's areas of concentration: individual development, family studies, intervention research, and research methods.
Admission Requirements
Requirements listed here are in addition to general Graduate School requirements stated in the GENERAL INFORMATION section of the Graduate Bulletin. Applicants apply for admission to the program via the Graduate School application for admission.

Scores from the Graduate Record Examinations (GRE) are required for admission. Entering students should have some course work in social sciences, such as developmental and family science courses from psychology or sociology programs; and foundational courses in research methods and statistics. At the discretion of the program, students not meeting these requirements may be provisionally admitted with limited deficiencies to be made up concurrently with their graduate work.

Students with appropriate backgrounds will be considered for admission for fall semester only. The best-qualified applicants will be accepted up to the number of spaces that are available for new students.

Degree Requirements
Requirements listed here are in addition to requirements stated in the DEGREE REQUIREMENTS section of the Graduate Bulletin.

Students who enter the graduate program without a master’s degree must complete a master’s degree en route to the Ph.D. For the Master of Science degree, a minimum of 30 credits at the 400, 500, or 800 level is required, with at least 18 credits in the 500 and 600 series combined. Students are required to complete three 3-credit substantive core courses: HDFS 501, HDFS 503, and HDFS 525. Students are also required to complete two 3-credit courses in research methods: HDFS 516 and HDFS 519. In addition to the required courses, students take a minimum of 9 credits of course work (400 and 500 level) in their substantive field, 6 of which must be in HD FS (excluding independent study), and 6 credits of thesis research (HDFS 600 or 610). The thesis must be accepted by the advisers and/or committee members, the head of the graduate program, and the Graduate School, and the student must pass a thesis defense. Course work completed for the HD FS master’s degree at Penn State can be applied to satisfy the degree requirements for the HD FS Ph.D.

For the Ph.D., a minimum of 40.5 credits at the 400, 500, or 800 level is required. Students are required to complete three 3-credit substantive core courses: HDFS 501, HDFS 503, and HDFS 525. Students are also required to complete four 3-credit courses in research methods: HDFS 516, HDFS 519, HDFS 523, and HDFS 526. In addition to the required courses, students must take a minimum of 6 additional credits in methodology, for a total of 18 credits in methodology. Students will also take a minimum of 12 credits of elective course work (400 and 500 level) in their substantive field, 9 of which must be in HD FS seminars. These 12 credits must be in addition to the 6 additional credits in methodology and cannot be double-counted towards that requirement. Students must also take HDFS 596: Professional Development Orientation (1 credit) in their first year and HDFS 515 (1.5 credits) by the end of their second year in the program.

All doctoral students must pass a candidacy examination, a comprehensive written and oral examination, and a final oral examination (the dissertation defense). To earn the Ph.D. degree, doctoral students must also write a dissertation that is accepted by the doctoral committee, the head of the graduate program, and the Graduate School.

Dual-Title Doctoral Degree in HDFS and Demography
This program is designed for students who want to integrate Population Studies (including such foci as fertility, marriage, cohabitation, labor force participation, mortality) with the study of human development and family studies. Details can be obtained from the HDFS graduate officer or director of the graduate program in Demography. Please see the Demography website for more information.

Admission Requirements
Students must apply and be admitted to the graduate program in HDFS and the Graduate School before they can be admitted to a dual-title degree program. Applicants interested in the dual-title degree program may note their interest in their applications to HDFS. Students admitted to the HDFS program will be admitted to the dual-title program in Demography upon the recommendation of a Demography Program faculty member in HDFS. Ph.D. students must apply and be admitted to the dual-title degree program in Demography prior to taking the candidacy exam.

Additional admissions requirements are listed in the Admissions Requirements section of the Demography Bulletin page.

Degree Requirements
To qualify for the dual-title degree, students must satisfy the requirements of the Ph.D. in HDFS, listed above. In addition, students pursuing the dual-title Ph.D. in HDFS and Demography must complete the degree requirements for the dual-title Demography Ph.D., listed on the Demography Bulletin page.

The Candidacy Examination committee for the dual-title degree will be composed of Graduate Faculty from HDFS and must include at least one Graduate Faculty member from Demography. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. There will be a single candidacy examination, containing elements of both HDFS and Demography. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the candidacy examination may be delayed one semester beyond the normal period allowable.

The chair and at least one additional member of the student’s doctoral committee must be members of the Graduate Faculty in Demography. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. The Demography faculty members on the student’s committee are responsible for administering an examination in demography that constitutes a portion of the comprehensive examination of the doctoral student in the dual-title.

Ph.D. candidates must complete a dissertation on a topic that reflects their original research and education in both HDFS and Demography. In order to earn the dual-title Ph.D. degree, the dissertation must be accepted by the doctoral committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).
**Dual-Title Doctoral Degree in HDFS and Social Data Analytics**

HDFS doctoral students interested in having a degree that reflects interdisciplinary training in an array of tools, techniques, and methodologies for social data analytics, while maintaining a close association with HDFS, may apply to pursue a dual-title Ph.D. in HDFS and Social Data Analytics.

Social data analytics is the integration of social scientific, computational, informational, statistical, and visual analytic approaches to the analysis of large or complex data that arise from human interaction. The dual-title Ph.D. program provides additional training with the aim of providing scientists with the skills required to expand the field of social data analytics, creatively answer important social scientific questions, and communicate effectively with both academic and nonacademic audiences.

**Admission Requirements**

Students must apply and be admitted to the graduate program in HDFS and the Graduate School before they can be admitted to a dual-title degree program. Applicants interested in the dual-title degree program may note their interest in their applications to HDFS. Students admitted to the HDFS program will be admitted to the dual-title program in Social Data Analytics upon the recommendation of a Social Data Analytics Program faculty member in HDFS. Students must apply and be admitted to the dual-title degree program in Social Data Analytics prior to taking the candidacy exam.

Additional admissions requirements are listed in the Admissions Requirements section of the Social Data Analytics Bulletin page.

**Degree Requirements**

To qualify for the dual-title degree, students must satisfy the requirements of the Ph.D. in HDFS, listed above. In addition, students pursuing the dual-title Ph.D. in HDFS and Social Data Analytics must complete the degree requirements for the dual-title Social Data Analytics Ph.D., listed on the Social Data Analytics Bulletin page.

The Candidacy Examination committee for the dual-title degree will be composed of Graduate Faculty from HDFS and must include at least one Graduate Faculty member from Social Data Analytics. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. There will be a single candidacy examination, containing elements of both HDFS and Social Data Analytics. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the candidacy examination may be delayed one semester beyond the normal period allowable.

The doctoral committee of a dual-title doctoral degree student must include at least one member of the Social Data Analytics Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. If the chair of the committee representing HDFS is not also a member of the Graduate Faculty in Social Data Analytics, the member of the committee representing Social Data Analytics must be appointed as co-chair. The Social Data Analytics representative on the student’s doctoral committee will develop questions for and participate in the
evaluation of the comprehensive examination.

Ph.D. candidates must complete a dissertation on a topic that reflects their original research and education in both HDFS and Social Data Analytics. In order to earn the dual-title Ph.D. degree, the dissertation must be accepted by the doctoral committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).

**Student Aid**
Graduate assistantships available to students in this program and other forms of student aid are described in the Student Aid section of the Graduate Bulletin. Students on graduate assistantships must adhere to the course load limits set forth in the Graduate Bulletin.

**Courses**
Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

**HUMAN DEVELOPMENT AND FAMILY STUDIES (HD FS) course list**

**V. Proposed Amendment to Graduate Bulletin for Social Data Analytics**

**Social Data Analytics**

Burt Monroe, *In Charge*
230 Pond Lab
814-865-9215
burtmonroe@psu.edu

**Degrees Conferred**

Students electing this degree program through participating programs earn a degree with a dual title at the Ph.D. level, i.e., in *(graduate program name)* and Social Data Analytics.

The following graduate programs offer a dual degree in Social Data Analytics: Ph.D. in Human Development and Family Studies and Social Data Analytics; Ph.D. in Political Science and Social Data Analytics; Ph.D. in Sociology and Social Data Analytics; Ph.D. in Statistics and Social Data Analytics.
Graduate Faculty\textsuperscript{3}

The Program
The Social Data Analytics dual-title degree program is administered by the Social Data Analytics Committee, which is responsible for the management of the program. The committee maintains program definition, identifies faculty and courses appropriate to the program, and recommends policy and procedures for its operation to the Dean of the Graduate School. The program enables students from diverse graduate programs to attain and be identified with an interdisciplinary array of tools, techniques, and methodologies for social data analytics, while maintaining a close association with a home discipline. Social data analytics is the integration of social scientific, computational, informational, statistical, and visual analytic approaches to the analysis of large or complex data that arise from human interaction. To pursue a dual-title degree under this program the student must apply to the Graduate School and register through one of the approved graduate programs.

Admission Requirements
Students must apply and be admitted to the graduate program in their home department and The Graduate School before they can apply for admission to the dual-title degree program. Applicants interested in the dual-title degree program may make their interest in the program known on their applications to the major programs and include remarks in their statement of purpose that address the ways in which their research and professional goals in their chosen home field reflect an expanded interest in Social Data Analytics.

To be enrolled in the Dual Title Doctoral Degree Program in Social Data Analytics, a student must submit a letter of application and transcript, which will be reviewed by the Social Data Analytics Admissions Committee. An applicant must have a minimum grade point average of 3.0 (on a 4 point scale) to be considered for enrollment in the dual-title degree program. Students must apply for enrollment into the dual-title degree program in Social Data Analytics prior to obtaining candidacy in their home department.

General Graduate Council admissions requirements are stated in the \textbf{GENERAL INFORMATION} section of the Graduate Bulletin.

Degree Requirements
Requirements listed here are in addition to requirements stated in the \textbf{DEGREE REQUIREMENTS} section of the \textit{Graduate Bulletin}.

To qualify for the dual-title degree, students must satisfy the requirements of their major doctoral program in which they are primarily enrolled. In addition, they must satisfy the requirements described below, as established by the Social Data Analytics Committee.

The minimum course work requirements for the dual-title Ph.D. degree in Social Data Analytics are as

\textsuperscript{3} As officially listed.
follows:

- Course work and other requirements of the primary program.
- SO DA 501 (3 credits)
- SO DA 502 (3 credits)
- 12 or more elective credits in Social Data Analytics from a list of courses maintained by the Social Data Analytics Committee. Collectively the elective credits must satisfy the following requirements:
  - (A) Core analytics distribution. 3 or more credits in courses focused on statistical learning, machine learning, data mining, or visual analytics. Courses approved as meeting this requirement are designated (A) on the list of approved electives.
  - (Q) Quantification distribution. 6 or more credits in courses focused on statistical inference or quantitative social science methodology. Courses approved as meeting this requirement are designated (Q) on the list of approved electives.
  - (C) Computational / informational distribution. 6 or more credits in courses focused on computation, collection, management, processing, or interaction with electronic data, especially at scale. Courses approved as meeting this requirement are designated (C) on the list of approved electives.
  - (S) Social distribution. 6 or more credits in courses with substantial content on the nature of human interaction and/or the analysis of data derived from human interaction and/or the social context or ethics or social consequences of social data analytics. Courses approved as meeting this requirement are designated (S) on the list of approved electives.
  - Cross-departmental distribution.
    - 3 or more credits in approved courses with the prefix STAT or that of a primarily social science department.
    - 3 or more credits in approved courses with the prefix IST, GEOG, or that of a primarily computer science or engineering department.
    - 6 or more credits in approved courses outside the primary program.
    - 3 or fewer credits in approved courses at the 400-level.

Students or faculty may request that the Social Data Analytics Committee consider approval of elective designations for any course, including temporary approvals for experimental or variable-title courses. Students are encouraged to take interdisciplinary courses that carry multiple (A), (Q), (C), (S) designations, as well as to select SoDA electives that also meet requirements of the primary program. Within this framework, final course selection is determined by the student in consultation with academic advisers from their home department and Social Data Analytics.

The Social Data Analytics Program maintains a list of background and skills that it recommends students have in place by the time they begin the interdisciplinary coursework required to complete the Social Data Analytics degree.

**Candidacy Committee Composition**

The candidacy committee must conform to all requirements of the primary program and the Graduate Council. In accordance with Graduate Council, the candidacy committee must include at least one member of the Social Data Analytics Graduate Faculty. Faculty members who hold appointments in both
programs’ Graduate Faculty may serve in a combined role.

**Candidacy Exam**

The dual-title degree will be guided by the Candidacy Exam procedure of the primary program and the Graduate Council. In accordance with the [Graduate Council](#), there will be a single candidacy examination, assessing candidacy for both primary program and the dual-title program. Because students must first be admitted to a graduate major program of study before they may apply to and be considered for admission into a dual-title graduate degree program, dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the candidacy examination may be delayed one semester beyond the normal period allowable.

**Doctoral Committee Composition**

The doctoral committee must conform to all requirements of the primary program and the Graduate Council. In addition to the general [Graduate Council requirements for doctoral committees](#), the doctoral committee of a Social Data Analytics dual-title doctoral degree student must include at least one member of the Social Data Analytics Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. If the chair of the doctoral committee is not also a member of the Graduate Faculty in Social Data Analytics, the member of the committee representing Social Data Analytics must be appointed as co-chair.

**Comprehensive Exam**

The dual-title degree will be guided by the Comprehensive Exam procedure of the primary program. After completion of required course work, doctoral candidates for the dual-title doctoral degree must pass a comprehensive examination. In programs where this includes evaluation of a written exam, the Social Data Analytics representative on the student's doctoral committee will participate in the writing and evaluation of the exam, in accordance with procedures maintained by the primary program. In programs where the comprehensive exam involves defense of a dissertation prospectus, the Social Data Analytics representative on the student’s doctoral committee will participate in the evaluation of the prospectus, including ensuring the proposed dissertation has substantial Social Data Analytics content.

**Dissertation and Dissertation Defense**

Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. Students enrolled in the dual-title program are required to write and orally defend a dissertation on a topic that reflects their original research and education in their home discipline and Social Data Analytics. The dissertation must be accepted by the doctoral committee, the head of the graduate program, and the Graduate School.

**Social Data Analytics Doctoral Minor**

Doctoral students may take a doctoral minor in Social Data Analytics. This is the appropriate option for doctoral students in programs that have not adopted the dual-title Ph.D. degree in Social Data Analytics, and for students otherwise pursuing an incompatible degree program, such as another dual-title.
As with all graduate minors, a student seeking a minor must have the approval of the student's major program of study, the Social Data Analytics program, and the Graduate School, and official requests to add a minor to a doctoral candidate's academic record must be submitted to Graduate Enrollment Services prior to establishing the doctoral committee and prior to scheduling the comprehensive examination. At least one Graduate Faculty member from Social Data Analytics must serve on the candidate’s doctoral committee.

The doctoral minor in Social Data Analytics requires at least 15 credits in approved courses, with at least 6 at the 500 level, and a minimum of 9 elective credits from a list of approved electives maintained by the Social Data Analytics program. Additional deviations from distribution minimums and maximums may be allowed, but must be approved by the Social Data Analytics program.

VII. Proposed Revision, Human Development & Family Studies

Graduate Student Handbook

The Handbook already accurately describes how general requirements apply to dual-title students in the existing Demography program. Therefore, the only revision required is insertion of a new section entitled “Dual-title Doctoral Degree in HDFS and Social Data Analytics” after the section on the dual-title program in HDFS and Demography. The proposed new text, to be inserted beginning on page 6 is highlighted below:

E. Dual-Title Doctoral Degree in HDFS and Social Data Analytics

HDFS doctoral students interested in having a degree that reflects interdisciplinary training in an array of tools, techniques, and methodologies for social data analytics, while maintaining a close association with HDFS, may apply to pursue a dual-title Ph.D. in HDFS and Social Data Analytics.

Social data analytics is the integration of social scientific, computational, informational, statistical, and visual analytic approaches to the analysis of large or complex data that arise from human interaction. The dual-title Ph.D. program provides additional training with the aim of providing scientists with the skills required to expand the field of social data analytics, creatively answer important social scientific questions, and communicate effectively with both academic and nonacademic audiences.
ENDORSEMENTS FROM OTHER PROGRAMS:

1. **Endorsement from Social Data Analytics:** See separate letter.

2. **Endorsement by Sociology:**

   Eva,
   
   Formalizing the dual title program across departments is a crucial part of sustaining Penn State's innovative training in social data analytics. I fully support your efforts to establish this dual title degree in HDFS as it will significantly strengthen the overall program. I am happy to endorse your proposal.
   
   best,
   
   Melissa

   Melissa Hardy
   Professor of Sociology and Demography
   Director, Sociology Graduate Program
   502 Oswald Tower
   The Pennsylvania State University
   University Park, PA 16802
   (814) 867-4337 Office
   (814) 863-7216 FAX
   http://sociology.la.psu.edu/graduate

3. **Endorsement by Geography:**

   Alexander Klippel <klippel@psu.edu>   Sun, Mar 13, 2016 at 4:20 PM
   Reply-To: klippel@psu.edu
   To: "Eva S. Lefkowitz" <exl20@psu.edu>
   Cc: Burt Monroe <burtmonroe@psu.edu>
   Dear Eva,
   
   On behalf of the Department of Geography and the Graduate Program Committee I am, in my function as Director of the Graduate Program, delighted to support HDFS' adoption of the Social Data Analytics dual-degree program.
   
   If you need any further documentation please do not hesitate to contact me.
   
   Apologies for the delay,
   
   alex

4. **Endorsement by Statistics**

   Aleksandra Slavkovic <sesa@psu.edu>   Sun, Mar 13, 2016 at 1:49 PM
   To: "Eva S. Lefkowitz" <exl20@psu.edu>
   Cc: "Aleksandra (Sesa) Slavkovic" <sesa@stat.psu.edu>, Burt Monroe burtmonroe@psu.edu
   
   Dear Eva,
I support the HDFS’s proposal for the dual title in Social Data Analytics.

Best,
Aleksandra

-------
Aleksandra (Sesa) Slavkovic, Ph.D.
Professor
Associate Head for Graduate Studies
Departments of Statistics and Public Health Sciences
421A Thomas Building
The Pennsylvania State University
University Park, PA 16802-2601

Phone: (814) 863-4918
Fax: (814) 863-7114
Web: http://www.stat.psu.edu/~sesa

5. Endorsement by Political Science:

LEE ANN BANASZAK lab14@psu.edu

Mon, Mar 14, 2016 at 3:39 PM

To: "Eva S. Lefkowitz" <exl20@psu.edu>
Cc: BURT MONROE III <burtmonroe@psu.edu>

Hi Eva,

My apologies for the delay in getting back to you on the dual title SoDA PhD proposal with HDFS. Political science welcomes your participation in the dual PhD program in Social Data Analytics. We foresee only positive impacts on political science and the dual SoDA PhD.

Best,

Lee Ann Banaszak

Lee Ann Banaszak
Professor and Head
Department of Political Science
The Pennsylvania State University
319 Pond Laboratory
University Park, PA 16802
E-mail: lab14@psu.edu
Tel.: 814/865-6573
FAX: 814/863-8979
Graduate Council
Program, Option, or Minor Proposal Form

Submit 1 original, signed Graduate Council proposal form and 2 hardcopies of the graduate program proposal document, with a copy of the signed proposal form attached to each proposal copy, to the Curriculum Coordinator, University Faculty Senate, 101 Kern Graduate Building, University Park. The proposals will be transmitted to the Office of the Dean of the Graduate School for entry into the Graduate Council curricular review process; for more information about the process, see the Overview of the Graduate Council Curricular Review Process.

The Program Proposal Procedures provide guidance for the development of a graduate program proposal. If you have questions regarding the preparation of a graduate program proposal or how to complete this Graduate Council proposal form, contact the Office of the Dean of the Graduate School.

College/School: College of Communications
Department or Instructional Area: Media Studies

New Graduate Program, Option, or Minor: ✔ Add
Designation of new graduate program: Media Studies (MEDIA)--Non Thesis Option
Classification of Instructional Programs (CIP) Code: 09.0102
Designation of new graduate option:
Designation of new graduate minor:

Indicate effective semester:
☐ First semester following approval
☐ Second semester following approval

Existing Graduate Program Option, or Minor: ☐ Change  ☐ Drop
Current designation of graduate program:
Current designation of graduate option:
Current designation of graduate minor:
New designation of existing graduate program (if changing):
New designation of existing graduate option (if changing):
New designation of existing graduate minor (if changing):
Brief description of the change (if not noted above):
Indicate effective semester:
☐ First semester following approval
☐ Second semester following approval

Submitted by Graduate Program Head
Matthew McAllister
Printed name
Signature
Date: 10/7/16

Noted by College/School Representative to Graduate Council Subcommittee on New and Revised Programs and Courses:
Michael Schmierbach
Printed name
Signature
Date: 10/10/16

Approved by College/School Dean/Chancellor (or Designee):
Ford Risley
Printed name
Signature
Date: 10/7/16
Recommended by Chair, Graduate Council Subcommittee on New and Revised Programs and Courses:

On Behalf of John Challis
Printed name
Signature
Date: 1/11/2017

Recommended by Chair, Graduate Council Committee on Programs and Courses:

On Behalf of M. Kathleen Heid
Printed name
Signature
Date: 1/11/2017

Noted by Dean of the Graduate School:

On Behalf of Regina Vasilatos-Younken
Printed name
Signature
Date: 1/11/2017
Table of Contents

Justification .................................................................................................................. 1
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Graduate Bulletin Description ....................................................................................... 2

Media Studies (MEDIA)—Non Thesis Option Justification

In consultation with and with approval from the student’s committee, a master’s paper may be
demed more appropriate based on the student’s career aspirations. Students who choose to
write a master’s paper instead of a thesis will still be required to earn 36 credits. Students
choosing to write a thesis will be required to take 6 credits of COMM 600 Thesis Research, and
students choosing to write a master’s paper will be required to take 3 credits of COMM 596.
Therefore the students choosing to write a master’s paper will need to take an additional class,
for 33 credits of course work, in addition to 3 credits of COMM 596 for the master’s paper.

The scope and scale of the master’s paper will follow Graduate Council’s expectations for
original scholarly work that advances knowledge, such as a manuscript suitable for journal
publication. The master’s paper should not be considered or used as a lesser intellectual activity
than a thesis, but should be used only when it is appropriate to the type of research the student
is doing as a capstone for their master’s degree. The student should be able to articulate his or
her case for writing a master’s paper instead of a thesis. The College of Communications will
require a student who chooses to write a master’s paper to hold a final defense of his or her
paper. It is expected that a Master’s student who plans to continue on to a Ph.D. will complete
a thesis.

The final decision of whether a student will write a thesis or a master’s paper will be made at
the student’s program plan meeting.

Degree Requirements:

<table>
<thead>
<tr>
<th>M.A. MEDIA Thesis Option</th>
<th>M.A. MEDIA Non Thesis Option</th>
<th>Integrated Undergraduate/Graduate MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 credits</td>
<td>36 credits</td>
<td>36 credits at the graduate level, 120 credits at the undergraduate level, with up to 12 credits double counted.</td>
</tr>
</tbody>
</table>
A minimum of 50% of double-counted courses must be at the 500 or 800 level.

<table>
<thead>
<tr>
<th>30 credits of course work</th>
<th>33 credits of course work</th>
<th>*see thesis/non thesis requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 credits of thesis research (COMM 600)</td>
<td>3 credits of master’s paper research (COMM 596)</td>
<td>*see thesis/non thesis requirements</td>
</tr>
<tr>
<td>3 credits of either COMM 506 or COMM 511 (Research Methods; students may take both)</td>
<td>3 credits of either COMM 506 or COMM 511 (Research Methods; students may take both)</td>
<td>3 credits of either COMM 506 or COMM 511 (Research Methods; students may take both)</td>
</tr>
<tr>
<td>At least 18 credits at the 500-600 level</td>
<td>At least 18 credits at the 500 level</td>
<td>At least 18 credits at the 500-600 level</td>
</tr>
<tr>
<td>3 credits of COMM 515 (MA Proseminar)</td>
<td>3 credits of COMM 515 (MA Proseminar)</td>
<td>3 credits of COMM 515 (MA Proseminar)</td>
</tr>
<tr>
<td>1 credit of COMM 590 (Colloquium)</td>
<td>1 credit of COMM 590 (Colloquium)</td>
<td>1 credit of COMM 590 (Colloquium)</td>
</tr>
<tr>
<td>Formal meetings: program plan, thesis proposal, defense of the thesis</td>
<td>Formal meetings: program plan, paper proposal, defense of the paper</td>
<td>*see thesis/non thesis requirements</td>
</tr>
<tr>
<td>Satisfactory completion of course work and thesis requires two years</td>
<td>Satisfactory completion of course work and paper requires two years</td>
<td>*see thesis/non thesis requirements</td>
</tr>
</tbody>
</table>

### Media Studies (MEDIA)

[Program Home Page (Opens New Window)]

**Associate Dean for Undergraduate and Graduate Education**

College of Communications

201 Carnegie Building

814-865-3070; commgpo@psu.edu

**Degree Conferred:**

- M.A.
- Integrated B.A/M.A. in Media Studies
The Graduate Faculty

The Program

The master’s degree in Media Studies is an academic program that involves students in the systematic study of media. The objective of the course of study is to enable students to achieve a comprehensive understanding of the systems, networks, cultures, and information associated with media. The program prepares students for doctoral study in communications, and for professional positions in business and government requiring a comprehensive understanding of the historical, social, and political implications of the media. This program helps prepare students to organize research projects, critically evaluate research reports, and directly influence media practices by the application of research findings.

Admission Requirements

Admission requirements listed here are in addition to requirements stated in the GENERAL INFORMATION section of the Graduate Bulletin. Applicants apply for admission to the program via the Graduate School application for admission.

Scores from the Graduate Record Examinations (GRE) are required for admission. Students with a 3.00 junior/senior grade-point average are eligible for admission. Three letters of recommendation are required. Applicants must also submit an autobiographical statement of about 1,000 words indicating the nature of the applicant’s interest in Media Studies, reasons for wanting to do graduate work, and future aspirations relating to the field of mass communications. Experience shows that most applicants hold a bachelor’s degree in a field of the liberal arts or the social and behavioral sciences, including journalism and mass communications. However, this does not preclude applicants with other backgrounds, abilities, and interests such as those whose undergraduate training may have been in a scientific or technical field. In every case, the applicant should explain in the autobiographical statement how his or her undergraduate education relates to the decision to seek admission to graduate study in mass communications.

Program of Study

The M.A. program seeks to integrate two areas of inquiry and analysis. The “Critical Studies” area centers on the expressive, creative, and linguistic dimensions of media as cultural processes. The “Political Studies” area focuses primarily on the political and economic dimensions of national and international communications systems and processes. The student is encouraged to combine courses from these and possibly other areas into a coherent package of course work culminating in either a thesis or a master’s paper.

Degree Requirements

Requirements listed here are in addition to requirements stated in the DEGREE REQUIREMENTS section of the Graduate Bulletin.
A minimum of 36 credits is required for the completion of the M.A. degree. Students in the thesis track must complete at least 18 credits at the 500 or 600 level, and the remaining credits may be at the 400 or 800 level. Students in the non-thesis track must complete 18 credits at the 500 level, and the remaining credits may be at the 400 or 800 level. There are 7 credits required in the following core courses: either COMM 506 or 511 (3 cr.), COMM 515 (3 cr.), and COMM 590 (1 cr.). If the student chooses to write a thesis, at least 6 credits in thesis research (COMM 600 or 610) must be taken. Students in the non-thesis track must write a satisfactory master’s paper, while enrolled in COMM 596 (3 cr.). Additional courses that will count as electives towards this degree can be chosen from a list of approved elective courses maintained by the graduate program office. Course work offered by departments outside the College of Communications may be scheduled as part of the student’s program with prior approval of the student’s academic committee. In some cases, students may be required to take additional credits in order to make up deficiencies in undergraduate course work.

Students are required to schedule three separate, formal meetings with their advisers and the academic committees for (1) discussion and approval of the general program plan, (2) the thesis or master’s paper proposal, and (3) the defense of the thesis or paper. In most cases, satisfactory completion of course work and thesis requires two years. A thesis must be accepted by the advisers and/or committee members, the head of the graduate program, and the Graduate School, and the student must pass a thesis defense. A master’s paper must be accepted by the advisers, committee members and the graduate programs chair, and the students must pass a master’s paper defense.

**Integrated B.A/M.A. in Media Studies**

The College of Communications offers academically qualified students enrolled in a Bachelor of Arts program in the College of Communications the opportunity to earn both the B.A and the M.A. upon completion of five years of study. The Integrated Undergraduate-Graduate Program in Media Studies facilitates the advanced study of communications research and thesis or master’s paper development through a carefully organized selection of undergraduate courses, graduate seminars, and directed research projects. The program accelerates and enhances undergraduate students’ appreciation for graduate-level scholarship by involving them in the seminars, research activities, and scholarly discourse of the college’s community of master’s- and doctoral-level scholars.

The Integrated B.A./M.A. degree in Media Studies is an academic program that involves students in the systematic study of media. The objective of the course of study is to enable students to achieve a comprehensive understanding of the systems, networks, cultures, and information associated with media. The program prepares students for doctoral study in communications and for professional positions in business and government requiring a comprehensive understanding of the historical, social, and political implications of the media, and research methods for studying the media. This program helps prepare students to organize research projects, critically evaluate research reports, and directly influence media practices by the application of research findings. The program is specifically not intended for advanced professional education.
Application Process and Admission Requirements

Students must apply to the program via the Graduate School application for admission, and must meet all the admission requirements of the Graduate School and the Media Studies graduate program for the Master of Arts degree, listed above.

Applicants must have a minimum GPA of 3.5 in order to be admitted; 3 credits from COMM’s General Education courses (COMM 100, COMM 150, COMM 180, COMM 320, or COMM 370); and 3 credits from the COMM 200 level and above. Admission to the program is based on the evaluation of the student’s transcript, examples of completed writing and research projects, a narrative statement of objectives, and two letters of support from faculty with whom they have worked. One faculty member must be from the College of Communications. Students shall be admitted to an IUG program no earlier than the beginning of the third semester of undergraduate study at Penn State (regardless of transfer or AP credits accumulated prior to enrollment) and no later than the end of the second week of the semester proceeding the semester of expected conferral of the undergraduate degree. Candidates are expected to present records of outstanding scholarly achievement to qualify. Students must be admitted to the program prior to taking the first course they intend to count towards the graduate degree.

Applicants to the Integrated Program

1. Must be enrolled in a B.A. program in the College of Communications.
2. Must apply no earlier than the beginning of the third semester of undergraduate study at Penn State (regardless of transfer or AP credits accumulated prior to enrollment) and no later than the end of the second week of the semester proceeding the semester of expected conferral of the undergraduate degree.
3. Must provide a narrative statement of objectives and two letters of endorsement from faculty with whom they have worked. One faculty member must be from the College of Communications.
4. In consultation with an adviser, students must prepare a plan of study appropriate to this integrated program. Students must present their plan of study in person to the head of the graduate program or the appropriate committee overseeing the integrated program prior to being admitted to the program. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser as the student advances through the program.

Degree Requirements

Requirements listed here are in addition to requirements stated in the DEGREE REQUIREMENTS section of the Graduate Bulletin.

Students must fulfill all requirements for each degree in order to be awarded that degree, subject to the double-counting of credits as outlined below. Degree requirements for the B.A. in Media Studies are listed in the Undergraduate Bulletin. Degree requirements for the M.A. degree are listed in the Master’s Degree Requirements section above. Up to 12 credits may be double-
counted towards the degree requirements for both the graduate and undergraduate degrees; a minimum of 50% of the double-counted courses must be at the 500 or 800 level. Credits associated with the culminating experience for the graduate degree cannot be double-counted.

The following credits are eligible to be double-counted towards both the undergraduate and the graduate degrees:
Graduate Credits: COMM 504, COMM 506, COMM 507, COMM 510, COMM 511, COMM 512, COMM 513, COMM 514, COMM 515, COMM 516, COMM 517, COMM 518, COMM 520, COMM 521, COMM 522, COMM 550, COMM 553, COMM 556, COMM 580, COMM 582, COMM 584, COMM 585, COMM 594, COMM 595, COMM 596, COMM 597X

Undergraduate Credits:
Advertising: COMM 410, COMM 411, COMM 417, COMM 420, COMM 421W, COMM 424;
Journalism: COMM 403, COMM 405, COMM 409, COMM 410, COMM 411
Film Video: COMM 411, COMM 438, COMM 440, COMM 451, COMM 452
Media Studies: COMM 405, COMM 411, COMM 413W, COMM 418
Public Relations: COMM 403, COMM 409, COMM 417, COMM 420, COMM 471
Telecommunications: COMM 403, COMM 405, COMM 410, COMM 484, COMM 486(W), COMM 487(W)

If students accepted into the IUG program are unable to complete the M.A. degree, they are still eligible to receive their undergraduate degree if all the undergraduate degree requirements have been satisfied.

**Student Aid**

Graduate assistantships and other forms of student aid available to students in this program are described in the STUDENT AID section of the Graduate Bulletin. Students on graduate assistantships must adhere to the course load limits set forth in the Graduate Bulletin.

**Courses**

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

**COMMUNICATIONS (COMM) course list**