Health Outcomes & Implementation Science
and
Biomedical Informatics

Student Handbook
Fall 2023 Cohort

Department of Health Outcomes & Biomedical Informatics
College of Medicine
http://hobi.med.ufl.edu/

Updated: 8/21/2023
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Welcome to the Department of Health Outcomes & Biomedical Informatics, housed in the University of Florida’s College of Medicine. We are excited you have chosen to pursue your graduate degree with us.

The College of Medicine is the largest of the six colleges that make up the UF Health Science Center. It is comprised of 28 research-oriented departments and ranks No. 14 nationally among public medical schools according to US News & World Report. The College’s mission is to improve health care in Florida, our nation and the world through excellence and leadership in education, clinical care, discovery, and service.

The Department of Health Outcomes & Biomedical Informatics is proud to contribute to the mission of the College through our extensive research portfolio and innovative graduate education programs. Last year, our department was awarded over $50 million in research funding. Our total annual research budget exceeds $100 million. Our goal is to continue increasing this amount and remain at the top of the College of Medicine’s funded departments.

Our research focuses on evaluating the health effects of public policies and health care, and conducting controlled field trials of preventative interventions in community and clinical settings. We are also home to the Institute for Child Health Policy, which focuses on research promoting the health of children, adolescents, and young adults.

Our MS and PhD programs allow us to provide you with innovative and specialized training. You will gain a specialized set of tools allowing you to pursue a variety of career opportunities developing, implementing, and evaluating clinical and community-based programs that promote health.

We are very proud of our students and their development into the next generation of researchers in health outcomes and biomedical informatics. Welcome to our department!

Elizabeth Shenkman, PhD  
Chair, Department of Health Outcomes & Biomedical Informatics  
Director, Institute for Child Health Policy  
Co-Director, Clinical and Translational Science Institute
Welcome to the graduate program in Medical Sciences with concentrations in Health Outcomes & Biomedical Informatics! We hope this handbook will serve as a resource for you during your journey through your degree.

We want to ensure you have the best possible experience during your time with us, and we are all here to support and guide you through the completion of your degree.

Our education programs have a lot to offer. Our high quality and experienced faculty facilitate learning that leads to stronger research capabilities, leadership skills, and successful tools for the field. This foundation prepares our students for a wide range of careers in the health sciences, including those who are clinicians pursuing research careers. We encourage you to pursue as many additional experiences as you can during your time with us.

We have compiled this handbook to serve as a resource for you as you journey through your degree program. We are committed to helping you graduate with an outstanding education and a strong foundation for growth as you move on to the next phase of your career.

We look forward to working with you. Welcome!

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Assistant Director, Education  
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The University of Florida is one of the nation’s largest research universities. It is Florida’s oldest university and has been enrolling students at the Gainesville campus since 1906. UF is an important component of Florida’s economy, providing over 100,000 jobs throughout the state and having an annual economic impact of over $12.56 billion.

UF is home to 16 academic colleges and more than 200 research centers and institutes. It employs nearly 5,000 faculty members and enrolls over 56,000 students per year. UF is one of only 21 public, land-grant university members of the Association of American Universities.

Health Science Center

The UF Health Science Center (HSC) is the country’s only academic health center with six health-related colleges (Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine) located on a single, contiguous campus. UF Health Shands Hospital, UF Health Children’s Hospital, UF Health Shands Cancer Hospital, UF Health Heart & Vascular and UF Health Neuromedicine Hospital and nine research institutes and centers – UF Health Cancer Center, Clinical and Translational Science Institute, Emerging Pathogens Institute, Genetics Institute, Institute on Aging, Diabetes Institute, Institute for Child Health Policy, Norman Fixel Institute for Neurological Diseases and the Evelyn F. and William L. McKnight Brain Institute – are also located on the HSC campus.

The mission of the HSC is to promote health through outstanding patient care, innovative and rigorous education in the health professions and biomedical sciences, and high-impact research across the spectrum of basic, translational and clinical investigation.
College of Medicine
The College of Medicine is the largest of the six colleges in the HSC. The Gainesville campus is comprised of 28 clinical and basic science departments with over 1,300 faculty members. The Jacksonville campus houses an additional 400 physicians and scientists. The UF College of Medicine works in close collaboration with UF Health Shands Hospitals, the Malcolm Randall Veterans Affairs Medical Center, and several other community healthcare sites and other affiliated hospitals in Florida.

The College’s medical education program has graduated more than 4,000 MD physicians since its first graduating class in 1960. The College also offers graduate degree programs in Medical Sciences, Biomedical Engineering, Physician Assistant Studies, and the Interdisciplinary Program in Biomedical Sciences, allowing talented researchers and professionals not interested in pursuing an MD the opportunity to pursue careers in medical and health care fields.

Department of Health Outcomes & Biomedical Informatics
The Department of Health Outcomes & Biomedical Informatics is comprised of a diverse, multidisciplinary faculty of health services researchers, epidemiologists, biomedical informaticians, economists, biostatisticians, psychologists, and social scientists whose goal is to advance the scientific knowledge necessary to improve health care delivery, leverage big data, advance health research, and help the most vulnerable populations. The Department is also the home of the Institute for Child Health Policy, which conducts innovative policy studies and intervention trials to promote the health of children, adolescents and young adults.

The department is home to more than 30 faculty members and more than 190 employees. Faculty and staff information, including contact information, can be found on the HOBI website.
HOBI Graduate Programs Overview

Our graduate programs are designed to give graduates the necessary knowledge to conduct health outcomes assessments and clinical effectiveness research in a range of biomedical, clinical and community-based research settings. Upon completion of the program, students will understand how to develop and evaluate health interventions, treatments, prevention practices and policies and determine what works on a large-scale level and why.

The curriculum provides training in research methods, methods for translating research into policy and practice, and health policy processes and their influence on health care practices and delivery in both clinical and community settings. Students will learn to evaluate the effects that existing and proposed health policies have on health care access, quality, and costs. They will also gain in-depth exposure to current issues in dissemination research and implementation science. Throughout the curriculum, special focus will be placed on health disparities and vulnerable populations. The structure of the program provides one-on-one mentored research experience with faculty and the opportunity to be a part of ongoing research being conducted in the department.

Faculty from the department’s three divisions (Biomedical Informatics and Data Science, Clinical and Population Health Integration, Health Outcomes and Implementation Science) are actively involved in the teaching and mentoring of students in our programs, as coordinated through the department’s Education Office, Leadership Committee, and Graduate Faculty Committee.

MS students in the Department of Health Outcomes and Biomedical Informatics can be enrolled on a part-time or full-time basis.

PhD students in the Department of Health Outcomes and Biomedical Informatics are required to be enrolled on a full-time basis after successful completion of the Qualifying Exam.

Student Mentoring and Guidance

PhD Programs
For our PhD programs, it is strongly advised that prospective students identify a potential mentor during the application process, to assess a student’s alignment with the research skills and topic of a potential research mentor’s projects. The PhD student’s research mentor will serve as the Chair of their dissertation Supervisory Committee. Occasionally, a PhD student will need to change research mentors during their program. The Education Office can help students in these situations.

MS Programs
Education leadership will provide advice/recommendations to students about potential mentor matches during MS student’s first semester. MS students are expected to identify a mentor by the time they have completed 12 credits in the program.
The MS student’s research mentor will serve as the Chair of their thesis or Capstone Research Project for the Supervisory Committee. An MS student may have an external member from the University serve on their committee if their initial committee members and chair approve the external member’s participation.

Students can update their mentor or committee selection using our Supervisory Committee Agreement form, which should be sent to the HOBI Assistant Director of Education. To request a change after the selection of an initial mentor, students must be in good academic standing, and both the original and proposed new mentors must be aware of and agree to the change. Research mentor changes can occur for a number of reasons, including a change in research interests or funding availability.

If the change request involves a personality conflict between the student and Research Mentor, students must first meet with Dr. Bylund or Dr. Liu before initiating the change request.

**Supervisory Committee**

MS and PhD students must select Supervisory Committees by the end of the semester in which the student has accumulated 12 credits. This is typically the end of the student’s second semester; however, students enrolling in 12 credits their first semester must select their Committee by the end of that semester. The Dean of the Graduate School is an ex-officio member of all Supervisory Committees.

Once the Supervisory Committee has been selected, the student must complete the **HOBI Supervisory Committee Agreement**. The student must obtain signatures from all committee members before submitting the Agreement to the Assistant Director. The signed Agreement will be reviewed and approved by the Associate Chair of Education before the committee is entered into the UF Graduate School system.

The **MS Supervisory Committee** will be composed of a minimum of 2 and maximum of 5 members. MS Supervisory Committee qualifications are as follows:

<table>
<thead>
<tr>
<th>Member</th>
<th>Member Type</th>
<th>Required to be HOBI faculty?</th>
<th>Graduate Faculty Status (GFS)</th>
<th>Must be tenured or accruing tenure?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (required)</td>
<td>Chair/Research Mentor</td>
<td>Yes</td>
<td>Required, must have GFS in HOBI</td>
<td>Yes</td>
</tr>
<tr>
<td>2 (required)</td>
<td>Co-Chair -or- Member</td>
<td>Yes</td>
<td>Required, must have GFS in HOBI or another department</td>
<td>Yes</td>
</tr>
<tr>
<td>3-5 (optional)</td>
<td>Additional Members</td>
<td>No</td>
<td>GFS not required. Requires special approval</td>
<td>No</td>
</tr>
</tbody>
</table>

The **PhD Supervisory Committee** will be comprised of a minimum of 4 members. PhD Supervisory Committee qualifications are as follows:
<table>
<thead>
<tr>
<th>Member</th>
<th>Member Type</th>
<th>Required to be HOBI faculty?</th>
<th>Graduate Faculty Status (GFS)</th>
<th>Must be tenured or accruing tenure?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chair/Research Mentor</td>
<td>At least two members of the committee must be HOBI faculty</td>
<td>Required, must have GFS in HOBI</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Co-Chair* -or- Member</td>
<td>Required, must have GFS in HOBI</td>
<td>At least one of the two must be</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Member</td>
<td>Required, must have GFS in any department</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>External Member</td>
<td>Cannot be HOBI faculty</td>
<td>Required, must have GFS in a department outside the College of Medicine</td>
<td>No</td>
</tr>
<tr>
<td>5-8</td>
<td>Additional Member</td>
<td>No</td>
<td>GF status not required; requires special approval</td>
<td>No</td>
</tr>
</tbody>
</table>

*co-chair is necessary when the Chair does not have their primary faculty appointment in HOBI.

Students who wish to have a Supervisory Committee Chair different from their Research Mentor must obtain approval from the Research Mentor, Dr. Bylund, and the proposed Chair.

Changes in Supervisory Committee members are acceptable until the midpoint of the student’s final term as long as the dissertation defense has not occurred. No changes in Supervisory Committee are allowed after the defense.

**Workplace and Community Engagement**

It is our intent that students from all diverse backgrounds and perspectives be well served by our programs, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to programs be viewed as a resource, strength and benefit. In our programs, we explore ways to bring better health to our communities and individual patients. This goal requires diverse perspectives. What we achieve, we achieve together as a team consisting of faculty, staff, and students from diverse backgrounds. This diversity is a possibility for us all to learn and grow.

It is our intent for HOBI courses to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Since our discussions will require collaboratively working with different people having different experiences and coming from different walks of life, we ask all enrollees in our programs to engage in discussion with care and empathy for the other members in the classroom, in HOBI events, and in general.

Your suggestions are encouraged and appreciated. Please let us know ways to improve the effectiveness of the programs for you personally or for other students or student groups.
Education Governance

HOBI has 4 education committees committed to overseeing the educational standards and student experience in our degree programs.

**Curriculum Committee**
The HOBI Education Curriculum Committee is comprised of HOBI faculty from the department’s three divisions and two current students, one from each concentration. The curriculum committee members participate in the evaluation and review of all degree and non-degree educational activities in the department. The committee reviews and votes on new courses, requests from students to transfer credits, and any course modifications. This committee meets monthly.

**Student Recruitment and Admissions Committee**
The HOBI Student Recruitment and Admissions Committee is comprised of HOBI faculty from the department’s three divisions and two current graduate students, one from each concentration. The committee is charged with the responsibility to review and make decisions on admissions, and to assist in student recruitment methods and efforts. The committee meets monthly.

**Examination Committee**
The HOBI Examination Committee is comprised of HOBI faculty from the department’s three divisions. The committee is charged with overseeing the annual doctoral preliminary exam and qualifying exams. The committee meets monthly between March and October.

**Student Experience Committee**
The HOBI Examination Committee is comprised of HOBI faculty from the department’s three divisions, and two current students. The committee is charged with overseeing department activities focused on improving the graduate student experience. The committee meets monthly.

Curriculum

**MS Curriculum in Health Outcomes and Implementation Science (HOIS)**
The MS in Medical Sciences with a concentration in Health Outcomes & Implementation Science is a minimum 32 credit hour degree program. The curriculum is comprised of:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core – 9 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 6822</td>
<td>Measuring and Analyzing Health Outcomes</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6851</td>
<td>Fundamentals of Dissemination and Implementation Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6885</td>
<td>Translational Health Research Design</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td><strong>Research Rigor and Ethics – 2 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 7877</td>
<td>Responsible Conduct of Biomedical Research</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td>GMS 6848</td>
<td>Ensuring Rigor and Reproducibility in Clinical and Translational Research</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td><strong>Statistics Courses – 3 credits</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PHC 6052 or STA 6166 | Introduction to Biostatistical Methods –or- Statistical Methods in Research I | 3 Letter-grade
---|---|---
### Methods – Select 3 courses (6-9 credit hours)
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6829</td>
<td>Longitudinal Research Design *</td>
<td>2 Letter-grade</td>
</tr>
<tr>
<td>GMS 6832</td>
<td>Economic Methods for Evaluating Value in Health Care*</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6844</td>
<td>Time Series and Quasi-Experimental Design for Health Outcomes Research *</td>
<td>2 Letter-grade</td>
</tr>
<tr>
<td>GMS 6813</td>
<td>Pragmatic Clinical Trials*</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6846</td>
<td>Systematic Review and Meta-Analysis in Clinical, Health Services Research, &amp; Public Health*</td>
<td>2 Letter-grade</td>
</tr>
<tr>
<td>GMS 6803</td>
<td>Data Science for Clinical Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6850</td>
<td>Foundations of Biomedical Informatics</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>PHC 6020 or PHC 6022</td>
<td>Clinical Trial Methods –or- Design &amp; Conduct of Clinical Trials*</td>
<td>3 Letter-grade</td>
</tr>
</tbody>
</table>

### Health Outcomes Courses – Select 1 course (3 credits)
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6833</td>
<td>Health Outcomes Research in Vulnerable Populations</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6835</td>
<td>Health Outcomes Research in Children*</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6812</td>
<td>Health Outcomes Research in Cancer</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6802</td>
<td>Health Outcomes Research for Chronic Diseases*</td>
<td>3 Letter-grade</td>
</tr>
</tbody>
</table>

### Implementation Science Foundations Courses (minimum 3 credits)
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6836</td>
<td>Foundations of Learning Health System Research</td>
<td>1 S/U</td>
</tr>
<tr>
<td>GMS 6852</td>
<td>Community Engaged Research for Clinical Effectiveness and Implementation Science Studies</td>
<td>2 Letter-grade</td>
</tr>
<tr>
<td>GMS 6853</td>
<td>Applied Topics in Dissemination &amp; Implementation Science</td>
<td>3 Letter-grade</td>
</tr>
</tbody>
</table>

### Capstone Mentored Research Experience – (6 credit hours of one course option)
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6905</td>
<td>Independent Study in Medical Sciences (Non-Thesis Eligible) –or- Research for Master’s Thesis (Thesis Eligible)</td>
<td>6 Letter-grade</td>
</tr>
</tbody>
</table>

### Total: 32-35 credits minimum

*not currently being taught but substitutions are available

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**PhD Curriculum in Health Outcomes and Implementation Science (HOIS)**
The PhD in Medical Sciences with a concentration in Health Outcomes & Implementation Science is a minimum 90-credit hour degree program, with 46-50 credits devoted to coursework, outlined below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core – 15 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 6822</td>
<td>Measuring and Analyzing Health Outcomes</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6851</td>
<td>Fundamentals of Dissemination and Implementation Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6885</td>
<td>Translational Health Research Design</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 7906</td>
<td>Grant Writing for Health Outcomes Studies</td>
<td>2 Letter-grade</td>
</tr>
<tr>
<td>GMS 7887</td>
<td>HOBI PhD Research Seminar (2 credits/summer semesters during years 1 &amp; 2)</td>
<td>4 S/U</td>
</tr>
<tr>
<td><strong>Research Rigor and Ethics – 2 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 7877</td>
<td>Responsible Conduct of Biomedical Research</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td>GMS 6848</td>
<td>Ensuring Rigor and Reproducibility in Clinical and Translational Research</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td><strong>Statistics Courses – 6 credits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHC 6052 or STA 6166</td>
<td>Introduction to Biostatistical Methods or Statistical Methods in Research I</td>
<td>3 Letter-grade</td>
</tr>
</tbody>
</table>
### Regression Methods for the Health & Life Sciences or Statistical Methods in Research II

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHC 6053 or</td>
<td>Regression Methods for the Health &amp; Life Sciences or Statistical Methods in</td>
<td>3</td>
</tr>
<tr>
<td>STA 6167</td>
<td>Research II</td>
<td>Letter-grade</td>
</tr>
</tbody>
</table>

### Methods – Select 4 courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6829</td>
<td>Longitudinal Research Design*</td>
<td>2</td>
</tr>
<tr>
<td>GMS 6832</td>
<td>Economic Methods for Evaluating Value in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6844</td>
<td>Time Series and Quasi-Experimental Design for Health Outcomes Research*</td>
<td>2</td>
</tr>
<tr>
<td>GMS 6813</td>
<td>Pragmatic Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6846</td>
<td>Meta-Analysis in Clinical, Health Services Research, &amp; Public Health</td>
<td>2</td>
</tr>
<tr>
<td>GMS 6803</td>
<td>Data Science for Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6850</td>
<td>Foundations of Biomedical Informatics</td>
<td>3</td>
</tr>
<tr>
<td>PHC 6020 or</td>
<td>Clinical Trial Methods or Design &amp; Conduct of Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>PHC 6022</td>
<td></td>
<td>Letter-grade</td>
</tr>
</tbody>
</table>

### Health Outcomes Courses – Select 1 course

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6833</td>
<td>Health Outcomes Research in Vulnerable Populations</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6835</td>
<td>Health Outcomes Research in Children*</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6812</td>
<td>Health Outcomes Research in Cancer</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6802</td>
<td>Health Outcomes Research for Chronic Diseases*</td>
<td>3</td>
</tr>
</tbody>
</table>

### Implementation Science Foundations Courses (Minimum 3 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6852</td>
<td>Community Engaged Research for Clinical Effectiveness and Implementation Science Studies</td>
<td>2</td>
</tr>
<tr>
<td>GMS 6836</td>
<td>Foundations of Learning Health System Research</td>
<td>1 S/U</td>
</tr>
<tr>
<td>GMS 6853</td>
<td>Applied Topics in Implementation and Dissemination Science</td>
<td>3</td>
</tr>
</tbody>
</table>

### Advanced Electives – 9 credits

To be determined in consultation with student’s mentor

### Research Credits – 40 - 50 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 7979 &amp;</td>
<td>Advanced Research</td>
<td>40-44</td>
</tr>
<tr>
<td>GMS 7980</td>
<td>Research for Doctoral Dissertation</td>
<td>S/U</td>
</tr>
</tbody>
</table>

### Total: 90 credits minimum

*not currently being taught but substitutions are available

## MS Curriculum in Biomedical Informatics

The MS in Medical Sciences with a concentration Biomedical Informatics is a minimum 36-credit hour program, with at least 22 credits specific to the BMI concentration. The curriculum is comprised of:

### Course Title

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6803</td>
<td>Data Science for Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6804</td>
<td>Translational Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6805</td>
<td>Information Modeling in Biomedicine</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6850</td>
<td>Foundations of Biomedical Informatics</td>
<td>3</td>
</tr>
<tr>
<td>GMS 7887</td>
<td>Health Outcomes &amp; Biomedical Informatics Research Seminar</td>
<td>1 S/U</td>
</tr>
</tbody>
</table>

### Foundation Courses – select 4 courses (12 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6806</td>
<td>Security and Privacy in Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6856</td>
<td>Introduction to Biomedical Natural Language Processing</td>
<td>3</td>
</tr>
<tr>
<td>GMS 7858</td>
<td>Causal Artificial Intelligence for Health Research</td>
<td>3</td>
</tr>
<tr>
<td>GMS 7866</td>
<td>Principles of Referent Tracking in Biomedical Informatics</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6822</td>
<td>Measuring and Analyzing Health Outcomes</td>
<td>3</td>
</tr>
<tr>
<td>PHC 6405 or</td>
<td>Theoretical Foundations of Public Health or Principles of Epidemiology in</td>
<td>3</td>
</tr>
<tr>
<td>PHC 6001</td>
<td>Public Health</td>
<td>Letter-grade</td>
</tr>
</tbody>
</table>

13
PhD Curriculum in Biomedical Informatics

The PhD in Medical Sciences with a concentration Biomedical Informatics is a minimum 90-credit hour degree program, with at least 39 credits specific to the BMI concentration. The curriculum is comprised of:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core – All Required (17 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 6803</td>
<td>Data Science for Clinical Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6804</td>
<td>Translational Bioinformatics</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6805</td>
<td>Information Modeling in Biomedicine</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6850</td>
<td>Foundations of Biomedical Informatics</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 7877</td>
<td>Responsible Conduct of Biomedical Research (Formerly GMS 7003)</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td>GMS 7887</td>
<td>HOBI PhD Research Seminar</td>
<td>4 S/U</td>
</tr>
<tr>
<td></td>
<td>(2 credits/summer semesters during years 1 &amp; 2)</td>
<td></td>
</tr>
<tr>
<td>Foundation Courses – Select 4 courses (12 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS 6806</td>
<td>Security and Privacy in Clinical Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6856</td>
<td>Introduction to Biomedical Natural Language Processing</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 7858</td>
<td>Causal Artificial Intelligence for Health Research</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 7866</td>
<td>Principles of Referent Tracking in Biomedical Informatics</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6822</td>
<td>Measuring and Analyzing Health Outcomes</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>PHC 6405 or PHC 6001</td>
<td>Theoretical Foundations of Public Health Principles of Epidemiology in Public Health</td>
<td>3 Letter-grade</td>
</tr>
</tbody>
</table>

Advanced Electives – select 2 courses (5-6 credits) from below, with up to 1 course substitution subject to mentor approval

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA 6166 or PHC 6050 or PHC 6052 or BME 6938</td>
<td>Statistical Methods for Health Sci Res I or Introduction to Biostatistical Methods or Introduction to Biomedical Image Analysis and Imaging Informatics</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>CEN 5035</td>
<td>Software Engineering</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>COP 5725</td>
<td>Database Management Systems</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>STA 6167</td>
<td>Statistical Methods in Research II</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>STA 5325</td>
<td>Fundamentals of Probability</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6848</td>
<td>Ensuring Rigor and Reproducibility in Clinical and Translational Research</td>
<td>1 Letter-grade</td>
</tr>
<tr>
<td>GMS 6857</td>
<td>Clinical Decision Support Systems</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 6885</td>
<td>Translational Health Research Design</td>
<td>3 Letter-grade</td>
</tr>
<tr>
<td>GMS 7093</td>
<td>Introduction to Clinical and Translational Research</td>
<td>2 Letter-grade</td>
</tr>
</tbody>
</table>

Capstone Mentored Research Experience (6 credit hours of one course option)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 6905</td>
<td>Independent Studies in Medical Sciences (Non- Thesis Eligible) –or- Research for Master’s Thesis (Thesis Eligible)</td>
<td>6 Letter-grade</td>
</tr>
<tr>
<td>GMS 6971</td>
<td></td>
<td>6 S/U</td>
</tr>
</tbody>
</table>

Total: 36 credits minimum
Transfer of Credits/Course Substitutions

Eligible courses
All transfer of credit and course substitution requests must follow the UF Graduate School guidelines for graduate degrees. Only graduate level courses (5000-7999) with a grade of B or higher will be considered for transfer of credit. Research credits will not be transferred. An MS degree earned in a discipline other than HOBI will require special consideration before being considered for transfer of credit.

Maximum credits for transfer of credit
No more than 30 credits from a previously earned MS degree can be transferred to a PhD program. Up to 15 credits can be transferred to an MS degree program. If the credits to be transferred to an MS degree are from outside of UF, a maximum of 9 credits will be considered for transfer.

Transfer of credit requests and course substitution requests will be reviewed by the department’s Curriculum Committee.
The HOBI Curriculum Committee will consider:

1. Accepting previously completed graduate courses in place of HOBI degree requirements (retrospective Transfer of Credit). This includes courses previously completed at the University of Florida, in graduate degree or graduate certificate programs.
2. Allowing degree credit for courses not included in HOBI degree curriculum (prospective Course Substitutions).

**Before submitting a request, students should review all official UF Masters or PhD guidelines, including in the HOBI Handbook, as well as UF’s Graduate Catalog.**

**Process**
Transfers of credit and course substitutions are requested by submitting the **HOBI Course Substitution/Transfer of Credit Form** to the Assistant Director. A rationale for the substitution(s) that explains how the course(s) relate directly to the HOBI degree must be included. The student’s Research Mentor must approve and sign each request.

**Timing**
**Transfer of Credit requests** must be submitted during the first semester of enrollment. Previous academic transcripts and syllabi for all courses proposed for transfer of credit must be included. **Course Substitution requests** must be submitted at least one month before scheduled registration for the proposed course.

**Course substitutions**
The HOBI Curriculum Committee will review all requests and approve, deny, or request more information. Students will be informed of the approval/denial of prospective course substitution requests by the start of the semester of the proposed course.

All transfer of credit requests approved by the Curriculum Committee are then submitted by petition for approval by the Dean of the Graduate School (with documentation in GIMS). Once the Graduate School has approved the transfer of credit request, credits will officially be recognized in the student’s plan of study.
Registration

Prior to the start of each semester, students should meet with their Research Mentor to review their academic progress, plan their courses for the next semester, and complete the *HOBI Course Registration Form*. Courses being offered will be posted on the HOBI Current Course Schedule site. The Course Registration Form must be submitted 48 hours via Dropbox prior to the end of the university’s regular registration period, prior to the Drop/Add period. Deadlines and process will be communicated by e-mail each semester by the Assistant Director.

The Assistant Director will complete the student’s registration. Students will receive e-mail confirmation when their registration is complete.

Add/Drop Policy

Graduate students are allowed a limited number of schedule adjustments after the midpoint deadline of the semester.* A schedule adjustment is defined as any of the following: adding a course, dropping a course, and/or switching coursework hours for another course (research hours, independent study, etc.). Students requesting additional adjustments must petition Dr. Bylund for approval. A successful petition would require a letter of support from the student’s faculty advisor.

*Students will be held fee liable for ANY course adjustments made after the stated university add/drop deadline.

Elective Courses

MS students may propose to take additional courses as electives beyond their degree requirements, with the approval of their Research Mentor. If elective courses are not approved as course substitutions, students can still take these courses; however, they will not count towards the credits required for completion of the degree.

PhD students may select advanced electives, in consultation with their Research Mentor. Elective courses are intended to augment the student’s specific area(s) of interest and may be taken from departments across campus. They also provide the flexibility for a student to enroll in a graduate certificate program of interest if desired.

PhD students may also propose to take additional courses as electives beyond their degree requirements, with the approval of their Research Mentor. These courses will not count towards the credits required for completion of the degree.

Research Courses

MS students will complete 6 credits of GMS 6905 Independent Studies in Medical Sciences (Capstone project for non-thesis) or GMS 6971 Research for Master’s Thesis. These can be taken in two sequential semesters, or all in one semester.

Students enrolled in GMS 6905 Independent Studies for Medical Sciences (Capstone project for non-thesis option) will work with their primary mentor at the beginning of their first semester registering for GMS 6905 to develop a project proposal. The supervisory committee should agree to the project proposal before the student begins work on it. At least a week before the final exam milestone, the
student shall meet in person and present a final report to the supervisory committee members. No formal presentation is required.

To enroll in GMS 6905 *Independent Studies for Medical Sciences* or GMS 6971 *Research for Master’s Thesis*, students must initiate the process several weeks prior to registration. To enroll each semester, students must:

- Complete a Thesis **Research Contract**. This will outline the contact time with the instructor (Research Mentor), time allocated by the student, and specific plans and deliverables to be completed during the semester.
- Submit the signed Contract to Matt Mitterko for registration.

At the end of each semester, students must have completed the work in the contract in order to receive credit (S/U). Incomplete deliverables will result in the student receiving a grade of Incomplete (“I”), which will be changed once the student has completed the work.

**PhD students** in the Health Outcomes and Implementation Science track will complete a minimum of 40 credits of independent research study. PhD students in the Biomedical Informatics track will complete a minimum of 50 credits of independent research study.

GMS 7979 *Advanced Research* can be taken after completion of the student’s core courses, and in the summer semesters if needed. After the preliminary exams, students may also register for GMS 7979 *Advanced Research* until successful defense of their dissertation proposal.

GMS 7980 *Research for Doctoral Dissertation* must be taken after a student successfully defends their proposal, and must be taken continuously until they graduate.

To enroll in GMS 7979, or GMS 7980, students must initiate the process several weeks prior to registration. To enroll each semester, students must:

- Complete a Dissertation **Research Contract**. This will outline the contact time with the instructor (Research Mentor), time allocated by the student, and specific plans and deliverables to be completed during the semester.
- Submit the signed Contract to the Matt Mitterko for registration.

At the end of each semester, students must have completed the work in the contract in order to receive credit (S/U). Incomplete deliverables will result in the student receiving a grade of Incomplete (“I”), which will be changed once the student has completed the work.

During a student’s intended final term in the program, they must follow the university’s minimum registration requirements when selecting the credit count for GMS 6905 (non-thesis), GMS 6971 (thesis), or GMS 7980.

If the final term is either fall or spring, 3 credits are required; a minimum of 2 credits are required if the final term is summer. This requirement does not replace any other circumstances that may require further enrollment (e.g. if the total research credits listed on the curriculum in the Handbook have not already been completed, or if a student holds an assistantship during their final term in the program).
**MS Non-Thesis Option**

The MS degree for students taking the non-thesis option will prepare and present a Capstone project to their full committee that shows independent investigation. The Capstone project will be based on work completed during GMS 6905 *Independent Studies in Medical Sciences. The capstone meeting must follow the university’s Physical Presence policy.*

MS degree students taking the non-thesis option must also participate in at least one mentor-approved Grad Development Professional Skills seminar or professional development workshop. Upcoming topics and registration information are available at: [https://graddev.ufhealth.org/professional-skills/](https://graddev.ufhealth.org/professional-skills/).

**MS Thesis and Defense**

The MS degree for students taking the thesis option will culminate with the preparation and presentation of a thesis that shows independent investigation. The thesis will be based on work completed during GMS 6971 *Research for Master’s Thesis.*

Students enrolled in GMS 6971 *Research for Master’s Thesis* will design and conduct a research thesis with the guidance of their Research Mentor. This mentored research experience is designed to lead to a publishable manuscript. GMS 6971 will culminate with the preparation of the MS thesis paper and an oral thesis defense (see page 14 for thesis defense information). Students should request confirmation of their progress to the dissertation defense stage be sent by their mentors to the Education Office.

Per Graduate School policy, thesis students are required to take 3 credits of 6971 in their final term (2 credits if the final term is summer). Students may schedule the oral thesis defense once the Supervisory Committee determines the thesis is ready to be defended. This defense typically occurs near the midpoint of the semester during which the student plans to graduate. In alignment with the Graduate School, the thesis defense must be successfully completed, prior to the submission deadline.

The thesis defense will be open to all members of the department, College of Medicine, and anyone outside of the College who wishes to attend. All members of the student’s Supervisory Committee must be present during the oral thesis defense. The Committee Chair and the student must be physically present at the defense. The other members should be present at the defense. Under extenuating circumstances, other committee members may be present electronically by phone or video conference per UF Graduate School and HOBI departmental policies. Immediately following the formal open thesis defense, the student will meet privately with the Supervisory Committee to finalize completion of the degree.

The thesis defense will consist of a summary of the work presented in the thesis during a 30-45 minute period, with time for public questions. Once the chair determines that the public portion of the defense is complete, the committee will ask further questions regarding the research included in the
thesis. Once the committee’s questions are complete, the committee will deliberate separately and evaluate the defense.

The written thesis must be of publishable quality and in a form suitable for publication. This format is guided by the UF Graduate School. Students should review the guide for preparing a Thesis and Dissertation before beginning to prepare their thesis.

**PhD Dissertation Defense**

The PhD dissertation defense will culminate with the preparation and presentation of a dissertation that shows independent investigation. The thesis will be based on work completed during GMS 7980.

Students will use GMS 7980 to develop their research project, after fulfilling all steps to achieve Candidacy (see later sections on Advancing to Candidacy). This project will culminate in a publishable manuscript.

Per Graduate School policy, thesis students are required to take 3 credits of 6971 in their final term (2 credits if the final term is summer), unless students are employed as a graduate assistant. Graduate assistants in HOBI PhD concentrations in their final terms must comply with full-time enrollment regulations for graduate assistants.

Students may schedule the dissertation defense once the Supervisory Committee determines the thesis is ready to be defended. This defense typically occurs near the midpoint of the semester during which the student plans to graduate. Students should request confirmation of their progress to the dissertation defense stage be sent by their mentors to the Education Office.

The public portion of the dissertation defense will be open to all members of the department, College of Medicine, and anyone outside of the College who wishes to attend. Students will present for 45-60 minutes on the development of their research agenda and dissertation during the public portion, with some time reserved for questions from the audience. Immediately following the public portion of the defense, the student will meet privately with the Supervisory Committee to answer any committee questions. The committee will then deliberate, and provide an evaluation of the defense, and also share any potential revisions or changes required for completing the dissertation, prior to its final submission to the Graduate School’s Editorial Office.

All members of the student’s Supervisory Committee must be present during the oral thesis defense. The Committee Chair and the student must be physically present at the defense. The other members should be present at the defense. Under extenuating circumstances, other committee members may be present electronically by phone or video conference per UF Graduate School and HOBI departmental policies.

The dissertation must demonstrate independent research, and be written in a format suitable for publication, based on the Graduate School’s guidelines. Students should review the Guide for Preparing Theses and Dissertations before beginning to prepare their dissertation.
PhD Admission to Candidacy

All PhD students will complete the following examinations or milestones before they can be admitted to candidacy:

1. Preliminary Examination, a written examination assessing knowledge of the program’s core curriculum (via course objectives)
2. Qualifying Examination, assessing knowledge of the student’s chosen general area of research
   a. Written Portion
   b. Oral Portion
3. Dissertation Proposal
   a. Written Proposal
   b. Oral Proposal Defense

Students will complete the examinations or milestones sequentially. All milestones must follow the department’s Physical Presence policy; please direct any questions to the Education Office.

The first milestone, the Preliminary Examination is offered and assessed regularly once per year after the Summer C semester by the HOBI Examination Committee. It may be offered again in the fall as necessary.

The Qualifying Examination is offered by the student’s Supervisory Committee after the student selects a general topic for the dissertation.

The final step in the candidacy assessment process is defense of the dissertation proposal itself. Both the Qualifying Examination and Dissertation Proposal Defense have oral and written assessments during each stage.

Preliminary Examination

Examination objective: The Preliminary Examination is the first part of the candidacy assessment process, and is intended to determine if the student is well prepared in fundamentals of the core content areas of the degree program.

There are two Preliminary Examinations administered to PhD students in the department – one for Health Outcomes and Implementation Science (HOIS) and one for Biomedical Informatics (BMI). The Preliminary Examination is offered at the end of the Summer C term (before the fall semester begins), with a potential end-of-fall semester examination offered for students who fail their first examination attempt, or for other special circumstances.

Eligibility: To be eligible to take the Preliminary Examination, students must:

(1) Complete GMS 6822, GMS 6851, GMS 6885, GMS 7877, GMS 6848 for HOIS, or GMS 6803, GMS 6804, GMS 6805, GMS 6806, GMS 6850, and GMS 7877 for BMI.
(2) Obtain approval from their chair
Achieve a minimum 3.00 GPA and be in good academic standing

In addition, students should also complete all human subject trainings required by the University of Florida’s IRB-01 prior to the preliminary examination. This includes:

1. IRB-01 local training (via https://mytraining.hr.ufl.edu/)
2. HIPAA training (via https://mytraining.hr.ufl.edu/)
3. CITI training (via https://research.ufl.edu/rcr/rcr-training/citi-rcr-training/)

From these training materials, students should be able to demonstrate an understanding of basic considerations and responsibilities when conducting human subject research. Students should also be able to describe the following: Health Insurance Portability and Accountability Act, The Nuremberg Code, The Belmont Report, and the Tuskegee Syphilis Experiment.

Process to take exam: Students interested in taking the Preliminary Examination should first obtain signed permission from all members of their Supervisory Committee, and the Chair of the Supervisory Committee should request (in writing) permission for the student to take the examination to the Office of Education no later than two months prior to the examination date (see below for scheduling of the exams).

Format: Proctored, written (short essay) examination

Students have 6 hours to complete the Preliminary Examination. The Preliminary Examination is administered in two 3-hour blocks with a 30-minute break in between, during which lunch is provided. Each Preliminary Examination (HOIS and BMI) is comprised of short answer essay questions (1/2 - 1 page responses) which come from the core curriculum courses. HOIS students will receive three questions (one from each core course, except grant writing), while BMI students will receive four questions (one from each core course), from which they can choose three.

Assessment: The entire HOBI Graduate Faculty is responsible for reviewing and grading students’ completed Preliminary Examinations, as follows:

Following the exam, the answers will be anonymized and distributed to all Graduate Faculty for a special Preliminary Examination Grading Meeting to be held in the latter part of August. The two faculty members assigned as graders will lead discussion on their assigned question. All Graduate Faculty present at the meeting will vote on passing decisions for each student response, designating one of three outcomes for each student: (1) Pass; (2) Partial Pass (the student must retake one or more questions); and (3) Fail. Voting is contingent on the presence of a quorum at the Graduate Faculty meeting (at least two-thirds of Graduate Faculty present).

Review time for examination responses typically takes between 10-15 business days. Any extraordinary delays will be communicated to the student in a timely fashion. Within this time period, the Associate Chair of Education will inform students and their respective Supervisory Committee Chairs of the decision.

Members of the Education Office will take notes during the Preliminary Examination Grading Meeting and add personalized feedback to students on strengths and weaknesses of their answers, based on the graders’ evaluation.
If a student fails the preliminary examination, including a partial pass, the student is allowed to retake the examination one more time only. (If a partial pass, the student will retake only the portion of the examination related to the failed questions.) In the event of a second failure, the Chair of the student’s Supervisory Committee may petition the HOBI Department Chair and Director of Education for a third chance if there are extenuating circumstances.

**Qualifying Examination**

**Examination objective:** The Qualifying Examination is the second phase of assessing the suitability of the HOBI student to be formally admitted to PhD candidacy.

The Qualifying Examination will be a 2-part examination, administered by the student’s Supervisory committee and uniquely tailored to the student’s specific area of focus and interest within Health Outcomes and Biomedical Informatics. In preparation for this portion of the examination, students are asked to submit a list of 30-50 references that are directly relevant to their dissertation topic. This list should include seminal as well as current research. Students are encouraged to use readings covered in specialty classes that relate to their topic, to ask members of their Supervisory Committee for recommendations, and to complete a thorough literature review. Students should also submit a one-page narrative that describes their general dissertation topic in Health Outcomes or Biomedical Informatics. This narrative should resemble a typical specific aims page of a grant proposal, describing the significance of the dissertation topic and its position in the broader literature, as well as provide a summary of the aims of the planned dissertation (recognizing that the aims will be further developed through the proposal defense described below). The list of references and narrative are due to the Supervisory Committee (and HOBI Education Office) approximately two months prior to the date of their Qualifying Examination. This list of references, once approved by the Supervisory Committee, will be the foundation for the Qualifying Examination. Students will use this as their reading list and subsequently demonstrate mastery of this list in answering the questions for this section of the examination.

The Qualifying Examination will be comprised of:

1. **Written Qualifying Examination:** Take-home, open book essay examination. Students will have 48 hours to complete the Written Qualifying Examination. Students will check out and check in the written examination from the Assistant Director of Education. The written examination will be comprised of 3-4 essay questions, from which students will select two questions to complete and submit. Essay questions will be developed by the student’s Supervisory Committee and will be specific to the student’s area of research focus.

2. **Oral Qualifying Examination:** Once the student has completed the Written Qualifying Examination, the Oral Qualifying Examination can be scheduled. The Oral Qualifying Examination must be scheduled 1-10 days following completion of the Written Qualifying Examination.
The Oral Qualifying Examination will be a 2-hour meeting between the student and the Supervisory Committee. All members of the student’s Supervisory Committee must be present during the Oral Qualifying Examination. The student and the supervisory committee chair (or co-chair) must be physically present together at the same location. With approval of the entire committee, other members may attend the defense remotely, using modern communication technology per UF Graduate School policy and HOBI departmental policy.

The Oral Qualifying Examination will primarily be a discussion of the Written Qualifying Examination, allowing the committee members to follow up on the written questions (and responses) and to expand on other topics related to the content area of the student’s chosen dissertation topic, with the primary goal to determine if the student has comprehensive and in-depth knowledge of this content area.

Immediately following the Oral Qualifying Examination, the Supervisory Committee will meet without the student to determine the outcome. The student will be notified of the determination by his/her Chair immediately after the oral examination, or in special circumstances no later than 24 hours after the oral examination (in writing).

Qualifying Examination Outcomes
There are four possible outcomes of the qualifying examination:

1. **Pass**
2. **Conditional Pass**: Student is allowed to proceed to the dissertation proposal, but is required to remediate an area of weakness identified by the Supervisory Committee. The Supervisory Committee will outline an action plan that will be agreed upon by the committee members and the student.
3. **Fail**:
   a. **With option for reexamination** - The student will be allowed to repeat the examination after remedial work specified by the Supervisory Committee and outlined in a remedial action plan agreed upon by the student. Per Graduate School Policy, at least one semester of additional preparation is required before the student can retake the examination (the examination cannot be retaken during the same semester).
   b. **Without option for reexamination** - The student will not be allowed to re-take the examination, and thus not allowed to complete the PhD. The Supervisory Committee may recommend completion of a MS degree. A student who fails the examination may petition for re-examination per Graduate School policy.

Dissertation Proposal

The Dissertation Proposal is the third and final phase of assessing the suitability of the HOBI student to be formally admitted to PhD candidacy. It should take place within six months of successful completion of the qualifying examination. The dissertation proposal will consist of:

- **Abstract** – 30 lines maximum
  The abstract should briefly describe the entire proposed project, including the objectives and the planned methods.

- **Specific Aims** – 2 pages maximum
Specific aims should clearly describe what is being proposed, including the hypotheses that will be tested.

**Significance – 2-5 pages**
Significance should describe the relevance of the proposed project to the field of Health Outcomes & Biomedical Informatics research. This section should also establish the innovative approach of each of the Specific Aims in the context of a complete review of the existing literature.

**Preliminary Studies** (optional) – *no page limit*
Preliminary studies can describe any pilot work that has already been done leading up to the proposed project.

**Design and Methods** – *5-10 pages*
Design and methods must clearly describe the plan for accomplishing the proposed project, clearly addressing each of the Specific Aims. Included in this section must be: time line, power calculation(s) (if applicable), the statistical tests that will be performed, strengths, and limitations.

**Literature Cited** – *no page limit*

Students must also prepare all IRB forms necessary to conduct the proposed research. All studies being submitted to IRB-01 should use the web based myIRB submission system.

An oral dissertation proposal defense will accompany the written proposal. The student will work with their Supervisory Committee Chair to prepare the dissertation proposal. After Chair approval, the student will send it to the Supervisory Committee for review. Once the Committee members agree it is ready for defense, the Assistant Director will set up a dissertation proposal defense date.

The student must submit their final proposal to the committee at least **three weeks** before the proposal defense date. The student and the supervisory committee chair (or co-chair) must be physically present together at the same location for the proposal defense. With approval of the entire committee, other members may attend remotely using modern communication technology.

The Proposal Defense will be an overview of the research proposal that is approximately 30 minutes long supported by slides. It should focus on the proposal topic and methodology.

The Supervisory Committee will then evaluate the written proposal and the oral presentation. 30 minutes will be given for questions by the Committee, to be answered by the student. The Committee will meet without the student present to determine the outcome of the proposal defense. The results will be communicated to the student immediately, and to the HOBI Associate Chair of Education that same day.

**Dissertation Proposal Outcomes:**

1. **Pass with no revisions**
2. **Pass with minor revisions** – the student must revise and submit revisions to all committee members
3. **Pass with major revisions** – the student must revise and resubmit. At the discretion of the Supervisory Chair, the committee may be reassembled.
4. **Not acceptable** – student and Chair must meet with the HOBI Associate Chair of Education.

Any recommended revisions must be completed within **3 months** from the time of proposal presentation. A re-examination may be requested but it must be recommended by the student’s Supervisory Committee Chair and approved by the HOBI Director of Education and Chair of the Department.

**Admission to Candidacy**

A doctoral student does not become an actual candidate for the PhD degree until granted formal Admission to Candidacy. This admission requires approval from the student’s Supervisory Committee, the HOBI Chair, the Associate Dean for Graduate Education, and the Dean of the Graduate School. Approval is based on:

1) The academic record of the student;
2) The Supervisory Committee’s opinion on overall fitness for candidacy;
3) Successful completion of the Preliminary Examination;
4) Successful completion of the Qualifying Examination;
5) Successful Dissertation Proposal defense

**Documentation:** The *Graduate Qualifying Exam Milestone Form* will be prepared by the Assistant Director several days prior to the dissertation proposal defense. This will be the second set of signatures on a new version of this form, since the milestone requires data about the Qualifying Examination, the Dissertation Proposal defense, and the dissertation topic approval date, all to finalize the Qualifying Exam Milestone.

The Assistant Director will circulate the form to the student’s mentor and full committee, to gather the results of the dissertation proposal defense.

After the form has been completed and share with the Education Office, the results will be provided to the Graduate School via the Grad Qualifying Exam milestone in SIS, and will be visible in ONE.UF.

For recordkeeping purposes, the date of Admission to Candidacy is recognized as the date that the Qualifying Examination Milestone has been updated as satisfactory.

**Expectations for Dissertation Work**

A doctoral student is responsible for developing and conducting all work leading toward and contributing to their dissertation, as appropriate to their topic and study design. This may include, but is not limited to: literature review, data collection, data management and analysis, and writing. After the student’s successful dissertation proposal defense and admission to candidacy, the student and their mentor will establish expectations for developing and conducting dissertation work, which must be approved by the student’s Supervisory Committee. Following committee approval, the dissertation expectations will be documented in the student’s IDP. As a general rule, any data collection, management, or analysis activities conducted *prior* to the student’s admission to candidacy must be approved by the student’s Supervisory Committee to be included in the dissertation. In some circumstances, a doctoral student may require the involvement of other individuals in certain data collection, management, or analysis activities that lead toward the dissertation. For example, a student’s dissertation topic may require use of data collected by other individuals under the direction
of the mentor (e.g., through a project in the mentor’s laboratory). In cases where the dissertation requires use of state claims and encounter data that are maintained by the department, it may be necessary for certain data management activities to be conducted by other department staff or faculty who have access to these data. Any exceptions to the student’s direct involvement in activities leading toward the dissertation must be approved by the student’s Supervisory Committee and documented in the student’s IDP.

General Graduation Requirements

Credits
MS students must earn a minimum of 33 credits for the Health Outcomes and Implementation Science concentration or 36 credits for the Biomedical Informatics concentration to obtain a degree. No more than 9 of the 33/36 credits (earned with a grade of B or higher) can be transferred from previous coursework. At least half of the 33/36 credits must be courses within HOBI.

PhD students must earn a minimum of 90 credits to obtain a degree. No more than 30 credits of a master’s degree from another institution can be transferred to the PhD program.

Credits to be transferred generally need to be coursework that is taken for a letter grade, with the equivalent of a B or better as the result.

Grade Point Average
Students must achieve an overall GPA of B (3.0) or better to be awarded a degree. Grade point averages are computed on all courses at the 5000 level or above and the first 6 semester credit hours of eligible 3000/4000 level course work outside the major.

Grades earned in courses transferred for credit do not count towards the student’s grade point average.

Students must also maintain an overall GPA of 3.0 or better throughout their graduate career. Students who fall below a GPA of 3.0 during any semester may request an exemption to remain in the program one additional semester. This exemption must be requested through the student’s Research Mentor and approved by the Curriculum Committee. If the exemption is granted and the student fails to upgrade their GPA during the following semester, or falls below a 3.0 GPA in any subsequent semester, the student is subject to being dismissed from the program.
Policies and Resources

Conduct and Honor Codes
We expect our students to maintain the highest levels of honesty, integrity, and ethical conduct. Students are expected to be familiar with and abide by all UF Student Conduct and Honor Codes. Any incident involving violation of these codes - including fraud, plagiarism, and cheating - will not be tolerated and may be grounds for dismissal from the program.

- **Fraud** typically involves intentional and deliberate misuse of data leading to falsification of results. This includes the fabrication of data or omission or concealment of conflicting data.
- **Plagiarism** is the use of someone else’s work or ideas and passing them off as one’s own. This includes the use of material with only slight modification or without proper credit given to the original source.

Ignorance of UF student honor codes by a student will not be an excuse for any actions that occur in violation. All incidents will be handled according to the guidelines of the UF Office for Student Conduct and Conflict Resolution.

ChatGPT and other AI-based academic writing and research tools
Given the growing usage of automated knowledge resources like ChatGPT and similar generative AI tools, we encourage students to carefully consider whether using any such resources requires attribution and/or citation, and whether the resulting work could be considered original and/or a form of plagiarism.

Since AI tools are used in various research projects in HOBI and increasingly used in higher education, the department actively encourages students to increase their knowledge of these tools and to utilize them when appropriate, with an end goal of generating their own knowledge output for their coursework and research. As of the 2023-24 academic year, the department will include any statements about appropriate use of generative AI tools in a course’s respective syllabus.

In cases where it is unclear if a student authored any academic coursework or research material, the department may require additional documentation regarding the tools used and the original content or material produced by the student.

We encourage students to actively contact instructors, if there are any questions about any types of permitted use of AI writing tools.

The department also currently prohibits the use of generative-AI tools for any academic milestones (i.e. preliminary examination, qualifying examination, and dissertation proposal).

If the department determines that there is inappropriate academic usage of AI-based writing tools, a student’s case may be submitted to the Student Conduct & Conflict Resolution Office, in the Dean of Student’s Office, in compliance with the University Honor Code and Student Code of Conduct.
Counseling & Wellness Center
The UF Counseling & Wellness Center provides a number of counseling services for students. Their staff is comprised of licensed psychologists, licensed mental health counselors, clinical social workers, psychiatrists, psychiatric fellows, psychiatric nurse practitioners, postdoctoral associates, psychology interns, counselor education interns, and practicum counselors. All of their staff are generalists and students can schedule appointments for a variety of needs. The Counseling & Wellness Center website also contains many self-help resources, and have a phone line available 24 hours (352-392-1575).

Dates and Deadlines
The Graduate School Academic Calendar publishes all annual critical dates and deadlines. This includes deadlines for drop/add, fee payments, thesis/dissertation submission, and graduation.

The Graduate School also sends notification of important deadlines and critical dates via the Graduate Student Listserv. This Listserv also keeps all UF graduate students informed of academic, research, and financial opportunities. All currently enrolled graduate students are added to the listserv by their GatorLink e-mail account; there is no way to opt out of the listserv. NOTE: the listserv archive is only available through UF wifi/wired networks, or through a UF VPN connection (see below).

E-mail and Off-Campus Access
HOBi graduate students are required to use their GatorLink e-mail as their primary e-mail address to ensure they receive important information from the University and department. Email to your ufl.edu address should not be forwarded to a non-UF, to avoid third-party spam filtering of official university communications.

If you need to access UF web resources from off-campus, such as online journals for which UF has purchased a license/subscription, you must log into the Libraries via a VPN connection.

HIPAA Training
In addition to conduct and honor codes, we require our graduate students to maintain active HIPAA General Awareness training (PRV800) for the duration of their graduate degree. Any certification of up-to-date training should be shared with the Education Office.

Individual Development Plan (myIDP)
All Graduate Students in the College of Medicine are required to complete an Individual Development Plan on an annual basis. This plan must be submitted by December 1 of each year. Once you have completed this form: [http://myidp.sciencecareers.org/](http://myidp.sciencecareers.org/). Please upload a copy of your report to our website submission tab: [https://hobi.med.ufl.edu/education/individual-development-plan-myidp/](https://hobi.med.ufl.edu/education/individual-development-plan-myidp/)

Funding for Professional Travel
Pending available funds, The Health Outcomes and Biomedical Informatics Student Travel Award typically provides up to $500 per student, per year, to four students: two from the Health Outcomes & Implementation Science concentration and two from the Biomedical Informatics concentration.
Any student whose planned travel meets the criteria outlined below should submit a HOBI Student Travel Award application to the Academic Specialist at least 90 days in advance of the planned trip. Applications are considered on a case-by-case basis by the faculty in the appropriate division.

Travel to conferences, symposia, and special research opportunities is essential for the professional development of advanced research students. In order to assure funds benefit the largest possible cross section of graduate students, priority will be given to doctoral-level students who are:

1. Invited to give major talks and are not offered funds from the meeting organizers, -or-
2. In the final year of their programs and are presenting work at a national meeting where they will be evaluated by potential employers, -or-
3. Offered a unique opportunity to conduct research on material at an off-campus site or to be involved in a special collaboration that may be available only under a limited set of circumstances.

Supplemental travel funding opportunities outside the department (pending available funds):

- **UF Graduate Student Council Travel Grants:** The UF Graduate Student Council provides travel grants of up to $350. Eligibility criteria and application details are found at: https://sg.ufl.edu/resources/gsc/grants/. **UF Office of Research Travel Grant:** The UF Office of Research has a program to supplement student travel when other funding sources are insufficient. RGP guidelines for travel funding cap awards at $400 per trip and require 1:1 matching funds from the department and/or college. These funds are primarily for assistance with the cost of travel, particularly airfare. These grants are one-time awards to Graduate Students. **RGP cannot provide any retroactive reimbursements.** https://research.ufl.edu/finding-funding/internal-competitive-funding.html

- **College of Medicine Office of Graduate Education:** If you are the presenting author, you are eligible for at least $300 per fiscal year. Travel is paid through your mentor or the department, and then the Office of Graduate Education transfers appropriate funds to the account that funded the travel once the expense report has been cleared through the university accounting. **The OGE does not provide up-front funding, nor does it directly reimburse students.** https://biomed.med.ufl.edu/students/student-reporting-tools/student-travel-funding-request/

- **Center for European Studies:** These grants are open to all UF graduate students, regardless of discipline, although the subject of the research or talk must be related to Europe or European Studies. Application instructions and deadlines can be found at: https://ces.ufl.edu/funding/student-funding/

**Health Insurance**

UF requires all newly admitted students, both domestic and international, to show proof of health insurance. Students can purchase the UF Student Health Insurance Plan, administered through UnitedHealthcare, or provide evidence of comparable coverage from an outside entity.
UF graduate students on an appointment as a graduate assistant, teaching assistant or research assistant, or those on a Predoctoral Fellowship appointment may also qualify for the GatorGradCare health insurance plan.

**Housing**
On-campus housing is available on a limited basis for both single and married students who are admitted or enrolled and maintain proper academic progress toward a degree at the University of Florida. Generally a waiting period of at least several months is encountered. Contact Graduate and Family Housing for more information.

Off-campus housing assistance can be found through the Office of Off-Campus Life.

**Leave of Absence**
Students who do not enroll at UF for three consecutive terms, including the summer term, must apply for readmission to the Graduate School. Readmission is not guaranteed.

Requests for a leave of absence are evaluated on a case-by-case basis. Graduate Research Assistants must notify their academic advisor, supervisor and the Assistant Director of any intended leave of absence.

Graduate assistants are expected to work during all academic terms (Fall, Spring, Summer C). There are no program expectations for graduate assistants to work on holidays or breaks between academic terms. Circumstances may arise (grant deadlines, etc.) that necessitate work during these breaks; during these temporary situations, clear communication between faculty supervisors and students is expected. Personal time is paid up to five days per semester appointment, which is credited at the beginning of each semester. This leave may not be used in less than one-day increments, and leave is not cumulative from semester to semester. Graduate assistants should contact their supervisor to schedule leave.

For more information, see https://benefits.hr.ufl.edu/my-benefits/explore/eligibility/ga/.

**Libraries**
The Health Science Center Library is located in the Communicore Building of the Health Science Center. It has a large collection of journals, texts, and reference materials, over 100 computers, and ample study space. A Gator1 card is required to check out materials.

Health Outcomes & Biomedical Informatics, like other study programs, is assigned a specific librarian liaison who can help you find resources in your particular subject area. A list of librarian liaisons in the Health Science Center Library can be found at http://library.health.ufl.edu/services/library-liaisons/.

The HOBI librarian liaison has prepared a guide to library resources for HOBI students at https://guides.uflib.ufl.edu/hobi
There are also several other libraries across the main UF campus, including Library West, which houses the Humanities, Business and Social Sciences holdings, and Marston Science Library, containing the Agriculture, Life Sciences, Engineering, Physical Sciences, Mathematics and Earth Sciences holdings.

A list of subject specialists for other libraries can be found at http://apps.uflib.ufl.edu/staffdir/SubjectSpecialist.aspx.

**Sexual Harassment**
It is the policy of the University of Florida to provide an educational and working environment for its students, faculty, and staff that is free from sex discrimination and sexual harassment. Sex discrimination and sexual harassment will not be tolerated, and individuals who engage in such conduct will be subject to disciplinary action. The University encourages students, faculty, staff, and visitors to promptly report sex discrimination and sexual harassment.

The Office for Accessibility and Gender Equality provides more information on definitions, policies, training, and reporting prohibited conduct.

**Traffic and Parking Regulations**
All UF students can register a car and obtain a parking decal from Transportation and Parking Services (TAPS). Eligibility for parking decals is determined by the student’s local address and academic classification. To obtain a parking decal, please review the student permit options.

**UF Police Department**
UFPD should be contacted for any non-emergency situations occurring on campus by calling 392-1111. All emergencies should be reported by dialing 911.

The Student Nighttime Auxiliary Patrol (SNAP) is a free nightly service for students that can provide an escort after dark to anywhere on campus. You can use the SNAP by Spare app to request a ride.

**Work Expectations for Graduate Assistants**
Any graduate assistants who are granted office space are expected to work at their designated work location, as set by their offer letter. Any potential adjustments to the work location, and regular working ours, should be discussed with supervisors, and aligned with the department’s hybrid work policy.

**Work-related Injuries (Worker's Compensation)**
For non-serious injuries as an RA, you should first contact the Worker’s Compensation office at 392-4940 for assistance filling out the forms. You may then go to the Student Infirmary or another designated site for treatment. For serious injuries you should go directly to the Shands Emergency Room for treatment. Upon arrival you should inform the admitting clerk of your graduate status and that the injury is work related. As soon as possible after treatment, contact the Worker’s Compensation office so that a worker’s compensation form and accident/injury form can be prepared.
After year 1, you should report to your departmental worker’s compensation representation (the department in which your payroll is processed).