



# FIU

Department of  
Environmental  
Health Sciences

## Ph.D. Student Handbook



2023-2024 Academic Year

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## Chair's Welcome

Dear Prospective and New Students,

Our planet and populations are under tremendous change and pressure created by a multitude of factors from a rapidly shifting climate to the ongoing COVID-19 pandemic. Our environment is vital to our well-being. Many aspects of our environment from the water we drink, the food we eat, and the air we breathe are intimately linked to our personal and public health; consequently, the environment has emerged as a critical driver of prominent human diseases, like Alzheimer's disease and cancer. Your decision to pursue a degree in environmental health comes at a crucial time when professionals are needed to investigate, educate, and act on the impending health issues that will afflict our populations in the immediate future.

The Department of Environmental Health Sciences (EHS), through its academic programs and cutting-edge research, is positioned to lead the next generation of biomedical advances by leveraging emerging knowledge in human disease biology and environmental health impacts better inform local, national, and global health policy, forge potent strategies to combat disease and counter toxic exposures, and to enhance community understanding of environmental health risks to extend the health spans of individuals.

Our Master Public Health (MPH) program is accredited by the Council on Education for Public Health (CEPH) and features two concentrations to provide students with the latest knowledge in the areas of Environmental Health Sciences and Brain, Behavior, and the Environment. Our research-intensive curriculum is focused on developing the most impactful professional skills in students. The courses emphasize critical thinking, communication, and content-specific expertise that more than adequately prepares students for their careers as public health practitioners or research professionals. Our programs take advantage of faculty expertise in environmental exposures, occupational health, toxicology, neuroscience, and drug discovery to provide students with a broad knowledge that will make them competitive for private, public, and government positions in bench science, policy development, and community education.

Students are the life-blood of our research enterprises and academic programs, and our faculty prioritize student experiences. Thus, our faculty are dedicated and available to assist you in achieving your goals and providing you with a personalized degree program that compliments your interests. Our Environmental Health Sciences Association is here to help you access resources and develop lifelong colleagues for support and to introduce you to opportunities to hone your public health skills and serve our community. Through our programs, you will have an outstanding network of mentors, peers, and professionals to help guide your career development.

I would like to wish you the best in your academic and research pursuits.

Welcome to the Department of Environmental Health Sciences!

Sincerely,



**Jeremy W. Chambers, Ph.D.**  
Associate Professor, and  
Interim Department Chair



## Mission Statement

Our **mission** is two-fold: (i) to improve human health and resilience, across the life course, against environmental stressors, such as environmental chemicals, and pollution, through a better understanding of the molecular mechanisms by which they mediate and through developing therapeutic strategies (ii); to educate and train the next generation of scientists and environmental public health leaders. To achieve its mission, the EHS has the following **goals**:

1. To educate individuals for professional careers in Public Health through the MPH degree program, and for research careers through doctoral programs in the EHS concentration.
2. Conduct basic and translational research pertinent to the recognition, characterization, and resolution of adverse environmental effects on human health, specifically brain and behavior, and the etiology of various cancers and chronic diseases.

We aim to train qualified leaders and research professionals who are experts in understanding and investigating the environmental health risks in local South Florida and global community.



The banner features a purple background with a central 'EHS' logo. To the left is a diagram titled 'Health effects of pollution' showing pathways from air and water pollution to human health. To the right is a photo of two scientists in a lab. Below the diagram is a photo of a coastal town. At the bottom are logos for NIH, CDC, OSHA, and the Department of Environmental Health Sciences. The text 'Global Environmental Health: From bench to bedside to community...' is centered above the EHS logo.

**FIU** Robert Stempel College of Public Health & Social Work

# Department of Environmental Health Sciences

Global Environmental Health:  
From bench to bedside to community...

**EHS**

NIH National Institutes of Health  
CDC U.S. Department of Health and Human Services  
OSHA U.S. Department of Labor

Florida International University, Miami | [eoh@fiu.edu](mailto:eoh@fiu.edu) | 305-348-7778  
[stempel.fiu.edu/academics/environmental-and-occupational-health](http://stempel.fiu.edu/academics/environmental-and-occupational-health)

## Advising and Administrative Resources

### **Academic Affairs in EHS**

As the Head of Department, Dr. Jeremy Chambers and Doctoral Program Director, Dr. Quentin Felty, are the primary points of contact in the Department for administrative issues related to the academic program that cannot be addressed directly by the Major Professor/dissertation committee members/faculty advisor. If an advisor is unavailable for any reason or there are any administrative issues, the next step is to reach out to either Drs. Chambers or Felty.

## EHS Faculty



### **Jeremy W. Chambers, Ph.D.**

Interim Chair and Associate Professor

Office: AHC5-354

Tel: 305-348-4648

Email: [jwchambe@fiu.edu](mailto:jwchambe@fiu.edu)

[Faculty Website \(click here\)](#)

### **Research interests**

Dr. Chambers received his Ph.D. in Biochemistry from Clemson University and completed postdoctoral research stints at the University of Pennsylvania and Scripps Research Institute. His research involves the regulation of mitochondrial function signal transduction and how failure to maintain these mechanisms culminates in changes in neurological function and health. The current research in his lab now focuses on (1) Identifying and Characterizing the signaling cascades present on the mitochondrial outer membrane (MOM) in the CNS, (2) Defining perturbations in MOM signaling that contribute to neurological disease, and (3) Developing novel therapies to correct errors in mitochondria-cell communication to treat neurodegenerative diseases. This research requires state-of-the-art methods in neuroscience, cell biology, biochemistry while incorporating systems biology approaches such as proteomics and network analysis. This approach allows Dr. Chambers' group to comprehensively interrogate neurological function and disorders.



Diana Azzam

Assistant Professor, Ph.D.

Office: AHC4-319

Tel: 305-348-9043

Email: [dazzam@fiu.edu](mailto:dazzam@fiu.edu)

[Faculty Website \(click here\)](#)

### **Research Interests**

Dr. Diana Azzam's research investigates metastatic and therapy-resistant cancer stem cells as well as novel treatments aimed at targeting them in the most lethal types of breast and ovarian cancers. In collaboration with Nicklaus Children's Hospital, she is also testing the use of a patient-specific *ex vivo* platform for individualized treatments in children with relapsed or refractory solid tumors and leukemia's. Dr. Azzam is committed to identifying novel therapeutic approaches for the advancement of treatment and improving survival rates of cancer patients.



**Alok Deoraj, M.S., Ph.D.**

Teaching Professor & Graduate (MPH) Program Director

Office: AHC5 – 349

Tel: 305-348-7793

Email: [adeoraj@fiu.edu](mailto:adeoraj@fiu.edu)

[Faculty Website \(click here\)](#)

**Research interests**

Dr. Alok Deoraj investigates the impact of complex environmental exposures on the molecular pathology of carcinogenesis and the metastasis of aggressive cancers. He employs innovative health risk assessment methods, utilizing integrative bioinformatics and machine learning approaches to elucidate the intricate pathways through which environmental pollutants, alone or in combinations, contribute to the poor prognoses observed in cancer patients.



**Quentin Felty, Ph.D.**

Associate Professor & Doctoral Program Director

Office: AHC5 – 351

Tel: 305-348-7785

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[Faculty Website \(click here\)](#)

**Research interests**

Dr. Felty's areas of research interests include the study of adverse effects of elevated estrogen and environmental pollutant exposure on the role of stem cells on vascular lesion formation, estrogen redox signaling pathways in breast carcinogenesis, and antioxidants as a preventative and combinational therapy with er blockers.



**Tomás R. Guilarte, Ph.D.**

Professor, Dean, Robert Stempel College Public Health & Social

Office: AHC5 – 507

Tel: 305-348-5344

Email: [tguilart@fiu.edu](mailto:tguilart@fiu.edu)

[Faculty Website \(click here\)](#)

**Research interests**

A leading scientist, educator and academic leader, Guilarte's research has focused on mechanism-based neurotoxicology and neuroscience using behavioral, cellular, and molecular approaches, ranging from studies using primary culture of neural cells to the application of brain imaging technologies. He is recognized worldwide for revealing the effects of low-level lead exposure on the central nervous system during development, and subsequently developing therapies to reverse these neurodegenerative effects.



**Muhammad M. Hossain, Ph.D.**  
Assistant Professor  
Office: AHC4-430 Tel: 305-348-2327  
Email: muhossai@fiu.edu  
[Faculty Website \(click here\)](#)

#### **Research interests**

Dr. Hossain's current research investigates the molecular and cellular mechanisms of neurotoxicity underlying the disruption of adult neurogenesis and cognitive dysfunction and targeting new therapeutic approaches to improve hippocampal neurogenesis and ameliorate cognitive deficits in humans.



**Roberto G. Lucchini, MD**  
Professor  
Office: AHC5-350  
Tel: 305-348-7778  
Email: Roberto.lucchini@fiu.edu  
[Faculty Website \(click here\)](#)

#### **Research Interests**

Dr. Lucchini's research is focused on the health effects of neurotoxic chemicals and the biological mechanisms by which metals, pesticides, persistent organic pollutants, particulate matter and other toxic chemicals can cause injury in the human nervous system, from neurodevelopment to neurodegeneration. He and his team have conducted studies in general populations as well as in occupational groups. With support from the Italian National funds, the European Union and NIEHS, they have assessed the effects of neurotoxic chemicals across the life span in populations that range in age from early childhood, through adult life to old age.



**Deodutta Roy, Ph.D.**  
Professor Emeritus  
Office: AHC5 – 353  
Tel: 305-348-1694  
Email: droy@fiu.edu  
[Faculty Website \(Click here\)](#)

#### **Research Interests**

Dr. Roy's research focuses on understanding the involvement of natural estrogen and estrogen-like environmental and industrial chemicals in the etiology of human urogenital cancers and reproductive diseases, the gene-environment interactions, genetic polymorphism in environmentally susceptible genes, signal transduction in toxicology and environmental health, and develop the exposure-effect assessment.





**Kim Tieu, Ph.D.**

Professor  
Office: AHC4 – 421  
Tel: 305-348-0371  
Email: [Ktieu@fiu.edu](mailto:Ktieu@fiu.edu)  
[Faculty Website \(click here\)](#)

**Research interests**

The major goal of Dr. Tieu's laboratory is to study mechanisms of neuronal dysfunction and degeneration as seen in Parkinson's disease, with the goal of developing effective disease-modifying therapies for this devastating brain disorder.



**Stanislaw F. Wnuk, M.S., Ph.D., D.Sc.**

Professor and Associate Dean of Research  
Office: AHC 5 – 517  
Tel: 305-348-7158  
Email: [wnuk@fiu.edu](mailto:wnuk@fiu.edu)  
[Faculty Website \(click here\)](#)

**Research interests**

Research involves invention of mechanism-based inhibitors of enzymes vital to cancer cell and/or virus proliferation, and collaborative biochemical evaluation. Another area focuses on new fluorination, radical desulfonylation, and Pd-catalyzed cross-coupling methodologies. Dr. Wnuk's research group is also interested in the design and synthesis of <sup>18</sup>F labeled nucleoside-based probes for Positron Emission Tomography Imaging.

## College and Department Contacts

### Office Coordinator

Ivonne Sarria  
Office Coordinator  
Office: AHC 5 - 355  
Email: [isarria@fiu.edu](mailto:isarria@fiu.edu)  
Tel: 305-348-7778; Fax: 305-348-1996

### Office of Student and Alumni Affairs



Zoraya Arguello  
Coordinator of Student and Alumni Affairs  
Office: AHC 5 - 145  
Email: [arguello@fiu.edu](mailto:arguello@fiu.edu)  
Tel: 305-348-7777

### Dean's Office, Robert Stempel College of Public Health and Social Work

Main Office  
Office: AHC 5 – 505A  
Tel: 305-348-4903

## Environmental Health Sciences Association

The Environmental Health Sciences Association (EHSA) is a forum by which students, faculty, and leaders in the field of environmental health can socialize, network, and collaborate via meetings throughout the academic year. Furthermore, it serves to support the mentoring and professional development of current and future EHS students attending the Robert Stempel School of Public Health and Social Work, at Florida International University. Public Health is a multidisciplinary field, the EHSA is founded on the principles that progress the cause of environmental health. Therefore, certain guidelines to be adhered to by EHSA members include regular attendance in the departmental seminar series, volunteer outreach, and collaboration with other public health and relevant on and off campus entities. Many diseases have environmental origins stemming from exposure to certain health hazards, a concept that is often misunderstood by the general public. Therefore, the responsibilities of the EHSA also entail educating the general public about environmental health issues and the relevance of environmental public health profession for their well-being by participating in various community events organized on campus or outside the campus. Such engagement helps foster stronger bonds among the fellow environmental health professionals, students and faculty members of the EHS department. Success of the EHSA depends on students, like you, who take the initiative to further the cause of environmental health issues. The goal of the EHSA is to serve as a bastion for EHS research, collaboration and professional enhancement of students and alumni. On behalf of the EHSA, welcome to the department and remember that EHSA is an important outlet to engage with your peers to bring your ideas to fruition in the pursuit of your own professional or personal goals!

Yours sincerely,

Nicole Blum, President, EHSA

**EHSA Website:** <https://fiu.campuslabs.com/engage/organization/environmental-health-graduate-student-association>



**(Above.)** Q&A session for EHS students and prospective students.

## Funding Your Graduate Degree

### **Stempel College Awards**

<https://stempel.fiu.edu/student-life/funding-your-education/>

### **CV Starr—College**

The C.V. Starr Scholarship program provides assistance to students from Latin American and Caribbean countries wishing to pursue a doctoral degree in one of the three disciplines in the Robert Stempel College of Public Health and Social Work: Public Health, Dietetics and Nutrition, or Social Work.

\$24,000 per year

### **Stempel Scholarship—College**

The award provides financial support to a Master in Public Health student annually.

### **FIU University Graduate School Fellowships**

**All of the UGS fellowships can be found at the following UGS link:**

<http://gradschool.fiu.edu/students/funding/fellowships/>

### **Presidential Fellowship—Institutional—Deadline in early Spring (early February)**

**\$30,000/year**

### **Latin American & Caribbean Graduate Fellowship—deadline in early Spring (March)**

Award includes a \$1,000 annual stipend and a tuition rate reduction to in-state for the academic year. The student must be a resident of Latin America or the Caribbean (including Puerto Rico and the U.S. Virgin Islands) and must be fully admitted to a graduate degree and enrolled in a minimum of 9 credits in Fall and Spring.

### **McKnight Doctoral Fellowship—Statewide—deadline in early Spring (January)**

**\$22,000/year**

### **FIU McNair Graduate Fellowship—National—deadline in early Spring (March)**

Must have been an undergrad McNair; applicable to all McNairs nationwide, both Master's and Doctoral; must be newly admitted and nominated by home department/unit.

**\$23,000 /year-Doctoral Students**

**\$15,000/year-Masters Students**

### **FIU Scholarships**

<https://fiu.academicworks.com/>

## PhD Advising Sheet



**Robert Stempel College of Public Health and Social Work**  
FLORIDA INTERNATIONAL UNIVERSITY

**Doctor of Philosophy in Public Health with a specialization in the Environmental Health Sciences**

College Website: <http://stempel.fiu.edu/> • Careers in Public Health: [www.asph.org](http://www.asph.org) • For Course Registration: <http://myfiu.edu>

|              |             |                       |
|--------------|-------------|-----------------------|
| <b>NAME:</b> | <b>PID:</b> | <b>DATE ADMITTED:</b> |
|--------------|-------------|-----------------------|

**I. Public Health Core Courses – 12 credits of required coursework. Students must earn a grade of B or better.**

| PREFIX   | COURSE DESCRIPTION   | HOURS | TERM | GRADE |
|----------|--|-------|------|-------|
| PHC 6091 | Biostatistics II (or other approved Quantitative Methods course) | 3     |      |       |
| PHC 6601 | Emerging Issues in Public Health                                 | 3     |      |       |
| PHC 7705 | Methods in Evidence based Public Health                          | 3     |      |       |
| PHC 7981 | Research Concepts and Proposal Development                       | 3     |      |       |

**II. Environmental Health Sciences Core Courses - 9 credits of required coursework.**

| PREFIX    | COURSE DESCRIPTION                     | HOURS | TERM | GRADE |
|-----------|--|-------|------|-------|
| PHC 6921  | Environmental Health Sciences Seminar  | 1     |      |       |
| PHC 7732C | Research Ethics & Scientific Integrity | 1     |      |       |
| PHC 6328  | Molecular & Cellular Toxicology        | 4     |      |       |
| PHC 6329  | Biomarkers                             | 3     |      |       |

**III. Brain Behavior Environment Concentration (BBE): 12 credits of required coursework for the BBE track.**

| PREFIX    | COURSE DESCRIPTION                                      | HOURS | TERM | GRADE |
|-----------|---|-------|------|-------|
| PHC 7381C | Neuroscience (This course to be taken 1 <sup>st</sup> ) | 4     |      |       |
| PHC 7731C | Advanced Neurotoxicology Research Methods               | 2     |      |       |
| PHC 7384  | Advanced Neurotoxicology                                | 4     |      |       |
| PHC 7385C | Emerging Issues in Neurotoxicology                      | 2     |      |       |

**Or,**

**Environmental Toxicology Concentration: 12 credits of required coursework for the Env. Tox. track.**

| PREFIX   | COURSE DESCRIPTION                                   | HOURS | TERM | GRADE |
|----------|--|-------|------|-------|
| PHC 7300 | Biological Basis of Environmental Diseases           | 4     |      |       |
| PHC 7327 | Emerging Issues in the Environmental Health Sciences | 2     |      |       |
| PHC 7374 | Organ-specific Toxicology                            | 4     |      |       |
| PHC 7713 | Advanced Environmental Toxicology Research Methods   | 2     |      |       |

**IV. Environmental Health Science Content Courses – a minimum of 9 credits of coursework is required.**

| PREFIX   | COURSE DESCRIPTION       | HOURS | TERM | GRADE |
|----------|--------------------------|-------|------|-------|
| PHC 6310 | Environmental Toxicology | 3     |      |       |



|           |   |   |  |  |
|-----------|---|---|--|--|
| PHC 6311  | Environment health Risk Assessment                      | 3 |  |  |
| PHC 6312C | Health Impacts of Air, Water, and Land Pollution        | 3 |  |  |
| PHC 6355  | Environmental Health & Safety                           | 3 |  |  |
| PHC 6374  | Environmental Disasters & Human Health                  | 3 |  |  |
| PHC 6422  | Regulatory Aspects of the Environmental Health Sciences | 3 |  |  |
| PHC 6442  | Global Environmental Public Health                      | 3 |  |  |
| PHC 6538  | Gene & Environment Interactions                         | 3 |  |  |
| PHC 6380  | Introduction to Neurotoxicology                         | 3 |  |  |
| PHC 6730C | Neurotoxicology Research Methods                        | 3 |  |  |
| PHC 6382  | Neuropharmacology                                       | 3 |  |  |
| PHC 6383C | Neurobehavioral Techniques                              | 3 |  |  |
| PHC 6907  | Independent Study in Environmental Health               | 3 |  |  |
| PHC 6914L | Current Topics in Environmental Health Research (Lab)   | 3 |  |  |
| PHC 6917  | Pre-doctoral research                                   | 3 |  |  |
| PHC 6920  | Special Topics in Environmental Health                  | 3 |  |  |
| PHC 7300  | Biological Basis of Environmental Diseases              | 4 |  |  |
| PHC 7327  | Emerging Issues in the Environmental Health Sciences    | 2 |  |  |
| PHC 7374  | Organ-specific Toxicology                               | 4 |  |  |
| PHC 7713  | Advanced Environmental Toxicology Research Methods      | 2 |  |  |
| PHC 7381C | Neuroscience  | 4 |  |  |
| PHC 7731C | Advanced Neurotoxicology Research Methods               | 2 |  |  |
| PHC 77384 | Advanced Neurotoxicology                                | 4 |  |  |
| PHC 7385C | Emerging Issues in Neurotoxicology                      | 2 |  |  |

Courses should be identified in consultation with Major Professor, and/or Committee.

**V. Secondary Courses - a minimum of 9 credits of approved secondary field courses are required. Secondary field courses must be selected from the approved graduate school courses in consultation with major professor.**

**VI. Dissertation – a minimum of 15 credits are required, as recommended by major professor.**

| PREFIX   | COURSE DESCRIPTION | HOURS | TERM | GRADE |
|----------|--------------------|-------|------|-------|
| PHC 7980 | Dissertation       | 15    |      |       |

**Graduation Requirements:**

1. Satisfy all requirements for Ph.D. of Public Health in Environmental Health Sciences.
2. Complete a minimum of 75 credit hours of graduate level coursework in approved program.
3. Earn a minimum overall GPA of 3.0 in all coursework completed.
4. Complete Forms D1 - D7 (Dissertation Approval Forms) as per University Graduate School guidelines and deadlines. Forms can be accessed at [gradschool.fiu.edu/student-forms.shtml](http://gradschool.fiu.edu/student-forms.shtml)
5. Meet with Major Professor to receive Graduation Check prior to final semester.
6. Apply for graduation at the Registrar's Office during registration of final semester. (See University Catalog for most current deadlines).

**Required Courses**

The major requires a minimum of 75 credit hours beyond the baccalaureate which includes a minimum of 15 credit hours of dissertation credits. There are three components to the Ph.D. curriculum. The first is a core curriculum shared across all majors (12 credit hours). The second component is specific to the major (9 credit hours). The third component is specific to the concentration (12 credit hours), followed by content and secondary field courses (to total a minimum of 18 required credit hours). The fourth component consists of the dissertation, including a minimum of 15 dissertation credit hours. The remaining credit hours to add up to the minimum university requirement of 75 credits will be determined in consultation with the student's advisor. *Updated 08/10/2023*

## Elective Course Options

In consultation with the advisor and with the approval of the Head of the department, students enrolled in any graduate program of the EHS department may obtain credit for elective courses that are offered in other departments of the college, FIU or even outside FIU. Options for some relevant elective EHS courses are the following, which may be offered in other departments of the college, university and in another local university.

1. **EHS Courses:** In general, any EHS course that is not a specific degree requirement can serve as an elective. The full list is available on your advising sheet.
2. **RSCPHSW Courses:** Many of the courses offered by other departments in the College can be taken as an elective for EHS MPH or PhD degrees. Check with your advisor as the Chair may need to approve your selection. The full list is available at this website: <http://catalog.fiu.edu>
3. **FIU College of Arts and Sciences, Department of Earth & Environment Courses:** The Department of Earth and Environment offers several courses that are highly suitable as electives for EHS MPH and PhD students. The full list is available at the website below:

[http://catalog.fiu.edu/2018\\_2019/graduate/College\\_of\\_Arts\\_Sciences\\_and\\_Education/Graduate\\_Earth\\_and\\_Environment.pdf](http://catalog.fiu.edu/2018_2019/graduate/College_of_Arts_Sciences_and_Education/Graduate_Earth_and_Environment.pdf)

In particular, the following courses are highly relevant to EHS degree:

**EVR 5005 Environmental Science and Sustainability (3).** Introductory environmental science course for graduate students in environmental studies and other disciplines. Emphasizes physical sciences and applications to environmental issues.

**EVR 5044 Advanced GIS and Environmental Data Analysis (3).** Explores project planning, geospatial database design and implementation of analytical and display methods in GIS for organizing, querying, analyzing and presenting spatial data.

**EVR 5215 Water Resources Assessment (3).** Elements of hydrological cycle, hydrological processes and water resources assessment with emphasis on surface and groundwater water quantity and quality evaluation is central to the course.

**EVR 5320 Environmental Resource Management (3).** The scientific and philosophical basis for the management of renewable and non-renewable energy, mineral, air, water, and biotic resources. Prerequisites: Graduate standing or permission of the instructor.

**EVR 5332 Integrated Solutions for Water in Environment and Development (3).** Examines the theory and practice of integrated water resources management, focusing on science, policy, and socioeconomic themes evaluated through case studies from different regions of the world. Emphasis given to environmental elements.

**EVR 5355 Environmental Resource Policy (3).** A survey of international and national environmental policy and the legal, economic, and administrative dimensions of international accords and selected U.S. law.

**GIS 5050 Environmental GIS (3).** Concepts of GIS, database design and management, advanced spatial analysis and modeling, uncertainty, error, and sensitivity in GIS. Focus on GIS project design, execution and presentation using AroGIS.

4. **University of Miami, Department of Public Health and Epidemiology Courses:** The Department of Public Health and Epidemiology at the University of Miami offers several relevant courses that could serve as electives. Check with your advisor to see what is available and to see if the course can be taken under the agreement between FIU and UM. The full list is available at the website below:

<http://publichealth.med.miami.edu/academic-programs/course-descriptions>

The following courses are relevant:

**EPH 541 ENVIRONMENTAL HEALTH (3):** Gives an overview of both local and international environmental health problems. The course is comprised of a broad range of topics, including: environmental regulation and ethics, toxicology, global change, food safety, sanitation, different forms and media of pollution, built environment, and occupational disease and injury.

**EPH 540 URBAN ENVIRONMENT AND PUBLIC HEALTH (3):** This course examines the urban environment – including homes, neighborhoods, cities and regions – and how its design and function influence our daily health-related decisions. This course will provide a framework for understanding health and urban environment relationships, principles of healthy community design, and interventions that promote better population health. Specific attention will be paid to the effect of ‘place’ on vulnerable populations.

**EPH 542 OCEANS AND HUMAN HEALTH (3):** Provides students with introductory knowledge of the broad and relatively young field of Oceans and Human Health. The focus is the present, future, and potential effects of oceanic processes and marine organisms on human health and well-being.

**EPH 580 ECOLOGY AND CONTROL OF VECTOR-BORNE DISEASES (3):** This course, through didactic presentations, group discussions of literature, and a team project will introduce students to the science of vector biology and the public health challenges of controlling emerging and re-surg-ing vector-borne diseases. The course will provide students with an overview of the epidemiology of major vector-borne diseases in the U.S. and globally, field and lab-based methodologies for vector studies to incriminate vector species and assess transmission dynamics, vector and disease surveillance, and “cutting-edge” vector control technology.

**EPH 681 GIS FOR PUBLIC HEALTH (3):** Builds general knowledge of spatial applications in the field of public health and epidemiology as well as to provide hands-on experience using geographic information systems (GIS). Through scheduled lab sessions, students will learn how to explore, analyze, and interpret public health data using ArcGIS, GeoDa and RIF.

**EPH 512 GLOBAL HEALTH (3):** Examines current global public health issues, governance, and decision-making challenges in developing, middle income, and developed nations.

## Helpful Links

### FIU Links

- **FIU Main Webpage** – [www.fiu.edu](http://www.fiu.edu)
- **Robert Stempel College of Public Health & Social Work** - [Stempel.fiu.edu](http://Stempel.fiu.edu)
- **College Fellowships** - <http://stempel.fiu.edu/students/scholarships-financial-aid/index.html>
- **Department of Environmental Health Sciences** - <http://stempel.fiu.edu/academics/environmental-and-occupational-health/index.html>
- **Office of Student & Alumni Affairs** - [http://rscphsw.fiu.edu/students\\_affairs](http://rscphsw.fiu.edu/students_affairs)
- **University Graduate School** - <http://gradschool.fiu.edu>
- **University Graduate School Fellowships** - <http://gradschool.fiu.edu/fellowships.shtml>
- **Graduate School Newsletter** - <http://gradschool.fiu.edu/faculty-staff-newsletter.shtml>
- **Graduate catalog** - <http://catalog.fiu.edu>
- **Financial Aid** - <http://finaid.fiu.edu>
- **MyFIU Account** - <https://my.fiu.edu>
- **Policies and Regulations** - <http://conduct.fiu.edu>
- **FIU Policies and Procedures Library** - <http://policies.fiu.edu>
- **FIU Library** - <https://library.fiu.edu>
- **Online FIU Phonebook/Directory** - <https://phonebook.fiu.edu>
- **Map of FIU's Modesto A. Maidique Campus** - <http://campusmaps.fiu.edu>
- **International Students and Scholar Services** - <http://iss.fiu.edu>
- **Academic Calendar** - <http://onestop.fiu.edu/academic-calendar>
- **FIU Student Media** - <http://fiusm.com>
- **FIU Online** - <http://online.fiu.edu>

### Environmental Health and Public Health Career Resources

- **APHA CareerMart** - <http://www.apha.org/about/careers>
- **Environmental Health Perspectives Online - Career Opportunities** - <http://ehp03.niehs.nih.gov/static/careerops.action>
- **Environmental Jobs and Careers** - <http://ehp03.niehs.nih.gov/static/careerops.action>
- **Public Health Employment Connection** - <http://cfusion.sph.emory.edu/PHEC/index.cfm?CFID=256568&CFTOKEN=92546549>

**PublicHealthJobs.net** - <http://www.publichealthjobs.net>

## Government Agency Job Sites

- **Agency for Toxic Substances and Disease Registry -**  
<http://www.atsdr.cdc.gov/jobs/jobatsdr.html>
- **CDC - National Center for Environmental Health -** <http://www.cdc.gov/nceh>
- **CDC - National Institute for Occupational Safety & Health (NIOSH) -**  
<http://www.cdc.gov/niosh>
- **FDA - National Center for Toxicological Research -**  
<http://www.fda.gov/AboutFDA/CentersOffices/OC/OfficeofScientificandMedicalPrograms/NCTR/default.htm>

## Employment Opportunities in Public Health

- **Biotechfind (biotech industry search engine and career center) -**  
<http://www.lifesciencesworld.com>
- **Medzilla (Biotech job search engine) -** <http://www.lifesciencesworld.com>
- **The Scripps Research Institute -** <http://jobs.scripps.edu>
- **Public Health Employment Connection -**  
<http://cfusion.sph.emory.edu/PHEC/index.cfm?CFID=256568&CFTOKEN=92546549>
- **PublicHealthJobs.net -** <http://www.publichealthjobs.net>

## Professional Organizations

- **Air & Waste Management Association -** <http://www.awma.org/Public>
- **American Association for Cancer Research -** <http://www.aacr.org>
- **American Chemical Society -** <http://portal.acs.org/portal/acs/corg/content>
- **American College of Occupational and Environmental Medicine (ACOEM) -**  
<http://www.acoem.org>
- **American Public Health Association -** <http://www.apha.org/about/careers>
- **Environmental Mutagen Society -** <http://www.ems-us.org>
- **Florida Environmental Health Association (FEHA) -** <http://www.feha.org>
- **National Environmental Health Association -** <http://www.neha.org/index.shtml>
- **Society of Environmental Toxicology and Chemistry (SETAC) -** <http://www.setac.org>
- **Society for Risk Analysis (SRA) -** <http://www.sra.org>
- **Society of Toxicology (SOT) -** <http://www.toxicology.org>
- **The International Federation of Environmental Health -** <http://www.ifeh.org>
- **The Teratology Society -** <http://teratology.org>



## Good Research Practice

### Guidelines for research students (BS, MS/MPH, PhD)

The EHS Department prepares students for a career in a broad range health science professions. This is more than simply a qualification, but research and professional training for your future career. We aim to promote a high standard of academic rigour, collegiate behaviour and regard students as part of the Department's research team. As such, we expect you to follow these Good Research Practice guidelines, encourage and assist other students in the Department, to plan for enough time each week to conduct the research scheduled for that week, and to regularly monitor the available scientific literature relevant to your research.

#### General

1. While your supervisory team are committed to supporting you, you have the ultimate responsibility for your PhD/Master's project, its progress and success. Remember, the award you are seeking is not automatic, or a right, but the result of hard work and dedication.
2. The number of hours spent on research is a function of the other obligations of the student (e.g. courses) and on the nature of the research project. Remember, your time with us is limited, and good timekeeping is therefore essential.
3. Graduate students are treated like faculty or professional staff in regard to holidays. Students may take standard FIU holidays (e.g. New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Eve, and Christmas Day). Ordinarily, vacation is taken between the end of the Spring Semester and the beginning of the Fall Semester, but students may elect to use some of this time during academic breaks. Students are expected to consult with their research advisor before taking personal days, or vacation time.
4. Students must inform their research advisor when they must be absent because of illness or an emergency. Likewise, faculty will inform students when they will be absent for an extended period of time.
5. There will be milestones throughout your project (see the EHS Student Handbook for details). Successful progression beyond these milestones will, in part, be based upon the amount of data you have, how the project is progressing and your understanding of the project.
6. Your weekly lab meetings are important, even if you have no new data to discuss. You can simply present/describe your activities for the week e.g. literature review, together with listening and contributing to the discussions. Your attendance is mandatory, unless excused by your supervisor.
7. EHS has regular "Research In Progress" Meetings, where all EHS researchers present their research in more detail to the Department/College (Thursdays, 11:30 – 1 pm AHC5 –300). Your attendance is mandatory, unless excused by your supervisor.

8. At a minimum, weekly meetings with your supervisor are important. It is your responsibility to arrange a meeting with your supervisor(s). On other occasions, your supervisor(s) will ask you to meet with them.
9. If you spot a particularly interesting paper in your regular literature searches, it's a good idea to share it with your supervisors, and they'll do the same.
10. It is your responsibility to keep up to date with the literature – and this will be supported by discussions with supervisors, peers and at laboratory meetings.
11. The Department expects you attend Departmental seminars, and encourages you to attend other seminars, across campus, to help put your work in a broader context.
12. Students are expected to present at lab meetings and, for PhD students as your project progresses, at least one Departmental Research In Progress meeting.
13. The door to the Department's faculty is always open – feel free to drop by to discuss your project, some data, or an interesting paper you've seen.

## Laboratory

1. Remember to adhere to all the basic lab safety rules (wear a lab coat and gloves, safety glasses when appropriate, no eating or drinking etc.), as detailed in your induction.
2. Without exception, ALL of your materials must be labelled with your name, date received or date made, and contents clearly labelled e.g. on Duran bottles. Items which are unlabelled or incompletely labelled run the risk of disposal without consultation.
3. You are expected to get involved in laboratory rotas, where applicable, and help in the lab to keep it running smoothly.
4. You are expected to maintain a clean and tidy work space.
5. It is recommended that you do not share materials and reagents, minimising risks of infection, accidents or mistakes.
6. By the same token, do not 'borrow' others' reagents, in particular cell culture media and reagents, without permission.
7. Any technical support and post-docs should be regarded with respect as surrogate members of academic staff in the lab. Their advice and instruction should be followed.

## Laboratory book

1. Your lab book must be like a diary, indicating on a daily basis what you have been doing. It should be dated, and the pages numbered. It should contain a detailed record of your experiments with Title, Aims, Methods, Results and Conclusions. Raw data should be inserted and also statistically analysed, plotted and affixed. Cross referencing with electronic storage media (e.g. Prism or Excel files) should give location and filename.  
**All electronic files should be stored on the network, not on removable disks, and backed up elsewhere.**
2. All written work should be clearly legible.
3. An index is recommended, along with page numbers.

4. Make a note of the source of the materials you use (lot number, manufacturer, city, country – is a minimum of information). The same applies to the equipment you use.
5. Make sure all information is attached in your lab book, there should be no loose material.
6. When writing up your data, make sure you extract as much 'mileage' from your data as possible e.g. draw all data as figure (or Tables), where possible. Remember it is your time and data – make full use of it.
7. We encourage the use of Standard Operating Procedures, when you have developed a new method, please write it up as an SOP (you will be helped with doing this), so other may use it.
8. Keep asking yourself "is this described in sufficient detail for someone to reproduce my work?". If the answer is no, then your lab book is not meeting this requirement.

Before leaving at the end of your project/degree, all lab books and files containing data are to be left with your supervisor(s), together with a description of their content etc. These remain the property of FIU.

## Doctor of Philosophy (Ph.D.) in Public Health with a Specialization in EHS Policy and Procedures

The Ph.D. in Public Health in the Environmental Health Sciences track focuses on graduate training in Environmental Health/Toxicology. The PhD program prepares professionals and researchers to identify and analyze the links between human health and exposure to the environmental factors, with the goal of prevention, control or risk reduction of environmental health problems, with concomitant improvements in human health.

### PROGRAM OBJECTIVES

The Ph.D. Program is designed to prepare students for academic or research careers. To complete the program a student must make an original and significant contribution to the field of environmental health science and this contribution must be described in a doctoral dissertation. In addition to the thesis, there are course and examination requirements for the completion of the program as described below. Students should keep in mind that these formal requirements are actually only a small part of a Ph.D. degree. The main component of a Ph.D. program is the intangible process by which the student learns to do research and become part of the academic community. Progress in the program will be judged by the student's progress in research as well as their progress in satisfying the formal requirements. Please follow the link to learn more about the Ph.D. program:

<http://gradschool.fiu.edu/student-forms.shtml>

[Potential PhD research areas can be found here:](#)

<http://stempel.fiu.edu/academics/environmental-and-occupational-health/areas-of-study/phd-public-health-with-specialization-in-environmental-and-occupational-health/index.html>

### DESCRIPTION OF THE STEPS FOR UNDERTAKING A Ph.D. IN PUBLIC HEALTH WITH A SPECIALIZATION IN EHS

#### DISSERTATION COMMITTEE APPOINTMENT (FORM D-1)

No later than the end of the first year of study (for full time students), the student should consult with his/her major professor on the selection of a dissertation committee. Form D-1 should be completed by the student and submitted to the Doctoral Program Director immediately upon formation of a dissertation committee. Should the composition of a dissertation committee need to be changed at some point during a student's program of study, the student must submit to the Doctoral Program Director form D-1r. Should the student request changing of the major professor, the student should submit a written request to the Dissertation Committee for approval.

#### COURSES – PROGRAM OF STUDY (FORM D-2)

The primary requirement for the Ph.D. degree is the submission and defense of the dissertation that is based upon original research in the area of specialization acceptable to the Ph.D.

student's dissertation committee. Students must complete a Program of Study designed by the dissertation committee to support the dissertation research and to provide a strong and comprehensive background in the Environmental Health Sciences and must include the requisite graduate credits. The courses required by the committee must be listed on form D-2 and must be taken before or during the term the student plans to take the candidacy exams and present the proposal seminar (i.e., if you try to take your candidacy exams without completing the course of study, you will not be allowed to take the exams). A minimum of 75 term credits of graduate course work beyond the baccalaureate is required including a minimum of 15 credits in dissertation research (PHC 7980). The student, in consultation with the committee, should only list the courses required by the committee on the D-2, exclusive of Doctoral Dissertation (PHC 7980). Students must maintain a cumulative GPA of 3.0 or higher, and earn a grade of "B" or higher in all courses.

### **TRANSFER OF GRADUATE CREDITS**

If approved by the dissertation committee, a maximum of 29 term hours earned elsewhere within a completed graduate degree program may be accepted toward the Ph.D. degree. Up to six thesis credit hours may be transferred to a Ph.D. program only if they were part of an earned degree and are approved by the dissertation committee. A maximum of six term hours of graduate credit earned from another institution or a maximum of twelve term hours of graduate credit earned at FIU in a non-degree seeking status may be transferred if approved by the dissertation committee.

### **Purpose of the Doctoral Qualifying Examination and Admission to Candidacy**

The purpose of the qualifying exam is to test student's knowledge of core competency areas. Each student must answer qualifying exam questions from memory. No external aids of any kind (including electronic or written notes, books or references, external memory devices, cell phones or study aids of any kind) are allowed during the exam. Any exceptions must be approved by a petition to the Doctoral Program Director one month prior to taking the qualifying exam. Any violation of the above rules will result in immediate dismissal from the doctoral program. The purpose of a doctoral qualifying examination is to evaluate each student's comprehensive understanding of the field, as well as the student's insight, creativity, and clarity of expression. The examination is one of the requirements for admission to candidacy. A graduate student does not become a candidate for the Ph.D. degree until granted formal admission to candidacy. Such admission requires the approval of the student's dissertation committee, the Head of the Department, the College Dean, and the Dean of the Graduate School. The approval must be based on: (1) the academic record of the student, (2) the opinion of the dissertation committee concerning overall fitness for candidacy, (3) an approved dissertation topic, and (4) a qualifying examination as described above.

### **CANDIDACY/COMPREHENSIVE QUALIFYING EXAMINATION (FORM D-2)**

A candidacy examination is required of all students working toward the Ph.D. This examination should be completed after a minimum of 48 credits in residence and no later than the sixth term of study (including the summer term). Written and oral sections of the examination will be conducted and evaluated by the dissertation committee and will test the student's competence and mastery of his or her field of specialization. A unanimous decision by all committee members is required to successfully pass the candidacy exam. Failure to pass one or more subject areas of the candidacy examination constitutes a failure. Passing of the candidacy examination may not be conditional. The student either passes or fails on the performance on



the exam and cannot be passed contingent on satisfactory completion of courses or submission of research papers.

#### Preparation for the Examination

To provide the committee with adequate information for the development of appropriate questions for their written examination, each student shall submit to the committee chair syllabi or course descriptions and paragraphs describing the parameters of the study area established for each question in consultation with the appropriate committee member(s). The course descriptions need to include required readings for each course taken during the coursework portion of the program. Students will be held responsible for the coursework they were required to complete as a prerequisite to the doctoral program. All of these materials – syllabi, course descriptions and paragraphs describing each question area – must be submitted to the chair no later than the beginning of the semester planned for the qualifying examination. In addition to the paragraphs describing each question, the student must submit a reading list of current journals and journal articles, books, and other appropriate documents for each question, prepared in consultation with the individual committee members and chair. The reading list is meant to act as a study guide so that the student and the committee agree on necessary preparation.

#### Scheduling Qualifying Examinations

It is the student's responsibility to schedule times for the written and oral portions of the examination. After agreement by the supervisory committee chair that the student may schedule the examination, the student simultaneously arranges the dates, times, and locations for both the written and oral portions of the qualifying examination and proposal. All times and dates of the written and oral qualifying examinations will be announced to the members of the faculty in advance and posted on a bulletin board available to graduate students. A copy of the written questions for every qualifying examination must be on file in the Division of Graduate Studies and are not for public inspection.

#### Nature of the Qualifying Examination

The Department of Environmental Health Sciences requires both a written and an oral examination. The written and oral components are considered as parts of one unified examination. The student must meet the University's registration requirements at the time he/she takes the exam. The student should register in the term in which he or she plans to take the qualifying examination.

#### Written Portion of the Examination

Answers to the written portion of the examination must be written. Oral examinations are forbidden as substitutes for any or the entire written portion.

Effective Spring 2011, the written portion of the examination will be divided into three parts:

1) An original research proposal of 25 pages, (double-spaced), in the NIH Format on a research topic that is not related to the student's specific doctoral research project. The student will be given a topic that is unrelated to the dissertation topic. The student will have two weeks to work

on the proposal. The proposal should be submitted one month prior to scheduling the written examination.

2)The written examination focuses on the individual student's coursework and readings. There will be four parts to the written examination, one part each on (a) environmental health sciences in general, (b) the specific aspects of environmental health sciences on students focus areas, (c) research methods central to the study of those specific aspects of environmental health sciences, and (d) supporting studies taken outside the department (Public Health Core Courses). While there is not a formal question regarding the dissertation proposal, the faculty will ask questions designed to increase the student's understanding of the dissertation topic or resolve outstanding issues in the proposal.

3)Satisfactory presentation and defense of an original research proposal (on a topic not related to the student's specific doctoral research project) and a satisfactory completion of a Preliminary Oral examination. The presentation and oral examination occur consecutively in a single session and must be completed before the end of the fifth semester (excluding summer semester). The examination will be conducted by the Dissertation Committee, be based on the student's dissertation research, and include questions from the student's major field and cognate fields. After fulfilling their requirement, passing the comprehensive examinations, and completing all required course work, the student advances to candidacy.

Any foreign language examination requirement will be met outside of the qualifying examination.

#### Time for Written Portion

The student will be allowed two to three hours for each part. The four parts of the examination must be completed within four official class days.

#### Responsibility for Preparing Questions

The student's supervisory committee members, under the direction of the chair, are responsible for the development of the questions for the written portion of the qualifying examination in accordance with the policies of the university and the college. The supervisory committee prepares the examination questions within the context of the individual student's program.

#### Taking the Written Examination

The answers must be written within the departmental office and produced in electronic form. The arrangements to sit for the written portion must be coordinated by the student in consultation with the supervisory committee chair and Graduate Program Director's office. The student is responsible for reserving with the department a computer, room, and other supplies necessary for the examination. The chair of the committee will collect a printed version of the examination answers, plus one output copy or photocopy for each additional supervisory committee member at the conclusion of each of the four parts. The supervisory committee chair also will deliver one set for the official records to the office of Graduate Program Director. The student is responsible for providing the additional copies.

#### Evaluation of Written Examination

Student responses are evaluated by the student's supervisory committee following the policies of the university and the college and within the context of the individual student's program. There will be no separate faculty evaluation for the written portion of the examination. Rather, the committee will decide whether a student passes or fails the qualifying examination after the

oral portion of the examination. The chair will discuss the results of the written portion of the examination with members of the supervisory committee and separately with the student prior to proceeding with the oral defense.

### Oral Portion of the Examination

The oral portion of the examination should take place within one month of the student completing the written portion of the examination. The oral portion of the qualifying examination must be held on campus. A major purpose of the oral exam is to allow the student, in response to faculty, to answer questions that arose as a result of the written portion of the examination. The second purpose is to defend the dissertation proposal. The supervisory committee chair may meet with committee members before admitting the student to the oral portion of the examination, and a committee member may request such a meeting, which request shall be honored by the chair.

### Evaluation of the Oral Examination

The oral portion of the examination will be evaluated by the entire supervisory committee following the policies of the university and the college and within the context of the individual student's program. The supervisory committee has the responsibility at this time of deciding whether the student is qualified to continue work toward the Ph.D. degree.

At the conclusion of the oral portion of the examination, the entire committee must agree that the student has passed, conditionally passed, or failed each of the four parts of the examination separately. If a conditional pass is assigned for any portion of the exam, the student must complete additional requirements, as assigned by the committee, to remove the "conditional" status. This work must be completed within a reasonable time period determined by the committee. Any failure must be reported to the Graduate School, and the student must wait at least one semester for a retake if a retake is recommended by the student's committee and approved by the Graduate School.

A failure on the first attempt will result in one of the following:

- Dismissal from the program
- Re-examination
- An application for transfer to the MPH program is made to the Graduate Committee by the student with the approval of the dissertation committee.

A request for re-examination must be made to the Graduate Committee by the student and the dissertation committee. If approved by the Graduate Committee, re-examination may be scheduled after a minimum of one and a maximum of two terms have passed. Only one re-examination will be allowed. Failure of the re-examination results in dismissal from the Graduate Program.

### **RESEARCH PROPOSAL (FORM D-3)**

During their first-term, students should write a brief outline of their proposed research project. Full-time students should submit this preliminary proposal to their dissertation committee no later than the beginning of their second term; part-time students should submit their proposals upon completion of nine credits. Students must prepare a formal version of their research proposal and distribute it to each member of the dissertation committee prior to the end of their sixth term in the program, or upon completion of 24 credits. Students must also prepare a five page abstract to be submitted with form D-3 after the proposal seminar.

The formal proposal should follow the general guidelines outlined in the Regulations for Thesis and Dissertation Preparation Manual ([www.fiu.edu/ugs/thesis\\_dissertation\\_manual.html](http://www.fiu.edu/ugs/thesis_dissertation_manual.html)) and should contain the following sections:

- 1. Introduction** - statement of the problem/purpose and a review of prior relevant work
- 2. Materials & Methods** - a technical discussion of the methods and approaches to be used in the research
- 3. Preliminary Results/Feasibility**
- 4. Program Schedule**
- 5. References**
- 6. Budget** - a description of any special budgetary requirements necessary to carry out the proposed research.

Sections 1-3 of the formal proposal shall be a minimum of 6 pages single spaced with 12 pt font, OR consistent with guidelines established by the National Science Foundation program for Dissertation Improvement Grants, at the discretion of the student's advisory committee.

All Ph.D. candidates are encouraged to submit this proposal to an appropriate funding agency, as determined by the faculty supervisory committee. Dissertation committee members should review the formal proposal and return it to the student along with their comments no later than two weeks from the date of receipt of the formal research proposal. After revisions, the student should resubmit the proposal to all dissertation committee members for final approval. If necessary, the major professor should poll the dissertation committee regarding the acceptability of the revised proposal. If deemed unacceptable to one or more of the dissertation committee members, the student or the student's major professor should contact the pertinent dissertation committee member(s) to determine the points necessary for approval. If the matter cannot be satisfactorily resolved, the student and major professor should take the issue to the Graduate Committee for mediation.

The student is responsible for scheduling the presentation of the proposal at a time convenient to the supervisory committee members and the faculty of the Environmental Health Sciences department during regular business hours. The student must also adequately advertise the proposal seminar at least one week in advance of the presentation with appropriate signage, and via email by sending the Graduate Program Director a copy of the announcement. Immediately following presentation of the proposal seminar and a public question period, the public audience shall be asked to leave and the committee and major professor will remain for a defense of the proposal and research plan. After successful completion of the proposal seminar, the major professor should send a memo (with the proposal seminar announcement attached) to be put in the student's file (see student progress memos) as well as the D-3.

### **ADMISSION TO CANDIDACY**

A graduate student is not a candidate for the Ph.D. degree until granted formal admission to candidacy by completion of Form D-2 (Program for Doctoral Degree and Application for Candidacy). This form requires signatures from members of the student's major professor, the Graduate Program Director, the Dean of the RSCPH&SW, and the Dean of the University Graduate School. Approval is based on:

- Completion of coursework specified in the Program of Study;
- Successful completion of the Candidacy Examination;
- Completion of the Quantitative Skills Requirement

A student may not enroll for dissertation credits until the term after he/she is admitted to candidacy. At least three terms must elapse between admission to candidacy and awarding of the Ph.D. degree. Refer to the University Academic Calendar for deadlines.

### **ANNUAL AND SEMI-ANNUAL COMMITTEE MEETINGS**

Each doctoral student is required to meet annually and semi-annually (corresponding to Spring and Fall, respectively) with the dissertation committee (if D1 is not completed, meet with Doctoral Program Director for evaluation) before and after the D-2 and D-3 are filed. The student must submit a completed online Annual Evaluation Form prior to the Spring meeting, and a hard copy form prior to the Fall meeting. After the meeting, each committee member must write a comment. If a member cannot attend physically but hears/sees the meeting then he/she can send an email to the advisor authorizing him/her to sign the form.

According to the University, students with < 18 credit hours are not required to have an annual evaluation. The Department recommends that all students have both annual and semi-annual meetings, irrespective of number of credit hours achieved

### **DISSERTATION**

A dissertation is required of all candidates for the Ph.D. degree and must conform to the format outlined in the Regulations for Thesis and Dissertation Preparation Manual available to students online from the Graduate School ([www.fiu.edu/ugs/thesis\\_dissertation\\_manual.html](http://www.fiu.edu/ugs/thesis_dissertation_manual.html)). Once a student advances to candidacy, the student must be continuously enrolled in at least three credits each term including summer term until she/he graduates. Students will receive IP (in progress) grades for Doctoral Dissertation credits until the final term. Grades will be changed from IP to P as soon as the candidate successfully defends the dissertation and the major professor files a grade of P for Doctoral Dissertation.

### **PRELIMINARY APPROVAL OF DISSERTATION & REQUEST FOR ORAL DEFENSE (FORM D-5)**

After preliminary approval of the dissertation and completion of all other prescribed work for the Ph.D. degree, the candidate will give a public presentation and be given a final oral examination by the dissertation committee. A copy of the near-final draft of the dissertation, a copy of the defense seminar announcement, and a completed D-5 form must be filed with the Graduate Program Director **5 weeks** before the defense date (the College deadline is 4 weeks before the defense and the University Graduate School deadline is 3 weeks before the defense). The examination will be based primarily on the dissertation research and related topics.

### **RESULTS OF THE DISSERTATION DEFENSE (FORM D-6 AND RUBRICS)**

Form D-6 must be completed by the student and the dissertation committee on the day of the defense and submitted to the Graduate Program Director upon successful defense of thesis. Three rubrics evaluating the contents, written and oral presentation of the dissertation need to be completed by all members of the committee and submitted to the Graduate Program Office after the dissertation defense. The rubrics forms are available in the Graduate Program website. A student who fails the dissertation defense may be allowed a second defense, on recommendation of the dissertation committee. If re-examination is necessary, the examination cannot be held earlier than six months or more than one year from the date of the first examination.

### **RESULTS OF THE DISSERTATION DEFENSE (FORM D-7)**

One paper copy of the final version of the dissertation must be presented to the Graduate Program Director with form D-7, and the accompanying Electronic Thesis and Dissertation submission

packet eight days before it is due at UGS. We will make a copy of the forms and submit the dissertation to the College and to the Graduate School.

### **ACTIVE STATUS AND TIME LIMITATIONS**

Continuous registration is required for all students accepted into the Ph.D. program. Full time students supported by a Graduate Teaching Assistantship or Graduate Assistantship must register for at least nine credits per term during the regular academic year and six credits during the summer term. Once students have advanced to candidacy, a minimum of three hours per term is required to maintain active status in the program. Students must be continually enrolled until they defend.

At the Ph.D. level, for full-time students, all requirements, including the successful defense of a dissertation must be completed within **four-five years** of first enrollment in the Ph.D. program, inclusive of any leaves of absence or other interruptions of active student status. Students who do not complete their dissertation within this time period may apply for an exception to this rule by filing a Request for Exception form to the Dean of the University Graduate School.

### Academic Misconduct Including Plagiarism

**Full text:** <https://gradschool.fiu.edu/academic-misconduct.shtml>

#### **Extract:**

Academic Misconduct is defined as the following intentional acts or omissions committed by any FIU student:

1.1 Cheating: The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. Any student helping another cheat may be found guilty of academic misconduct.

1.2 Plagiarism: The deliberate use and appropriation of another's work without any indication of the source and the representation of such work as the student's own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is guilty of plagiarism. Any student helping another to plagiarize may be found guilty of academic misconduct.

1.3 Misrepresentation: Intentionally lying to a member of the faculty, staff, administration, or an outside agency to gain academic advantage for oneself or another, or to misrepresent or in other ways interfere with the investigation of a charge of academic misconduct.

1.4 Misuse of Computer Services: The unauthorized use of any computer, computer resource or computer project number, or the alteration or destruction of computerized information or files or unauthorized appropriation of another's program (s).

1.5 Bribery: The offering of money or any item or service to a member of the faculty, staff, or administration anyone in order to commit academic misconduct.



1.6 Conspiracy and Collusion: The planning or acting with one or more fellow students, any member of the faculty, staff or administration, or any other person to commit any form of academic misconduct together.

1.7 Falsification of Records: The tampering with, or altering in any way any academic record used or maintained by the University.

1.8 Academic Dishonesty: In general, by any act or omission not specifically mentioned above and which is outside the customary scope of preparing and completing academic assignments and/or contrary to the above stated policies concerning academic integrity.

**FIU College of Education Plagiarism Tutorial:** <http://education.fiu.edu/plagiarism>

**FIU Online plagiarism page:** <http://libguides.fiu.edu/plagiarism>

## Academic Grievance Procedure

**Full text:** <http://gradschool.fiu.edu/current-student-academic-grievance.shtml>

Extracts:

### Informal Grievance Procedure

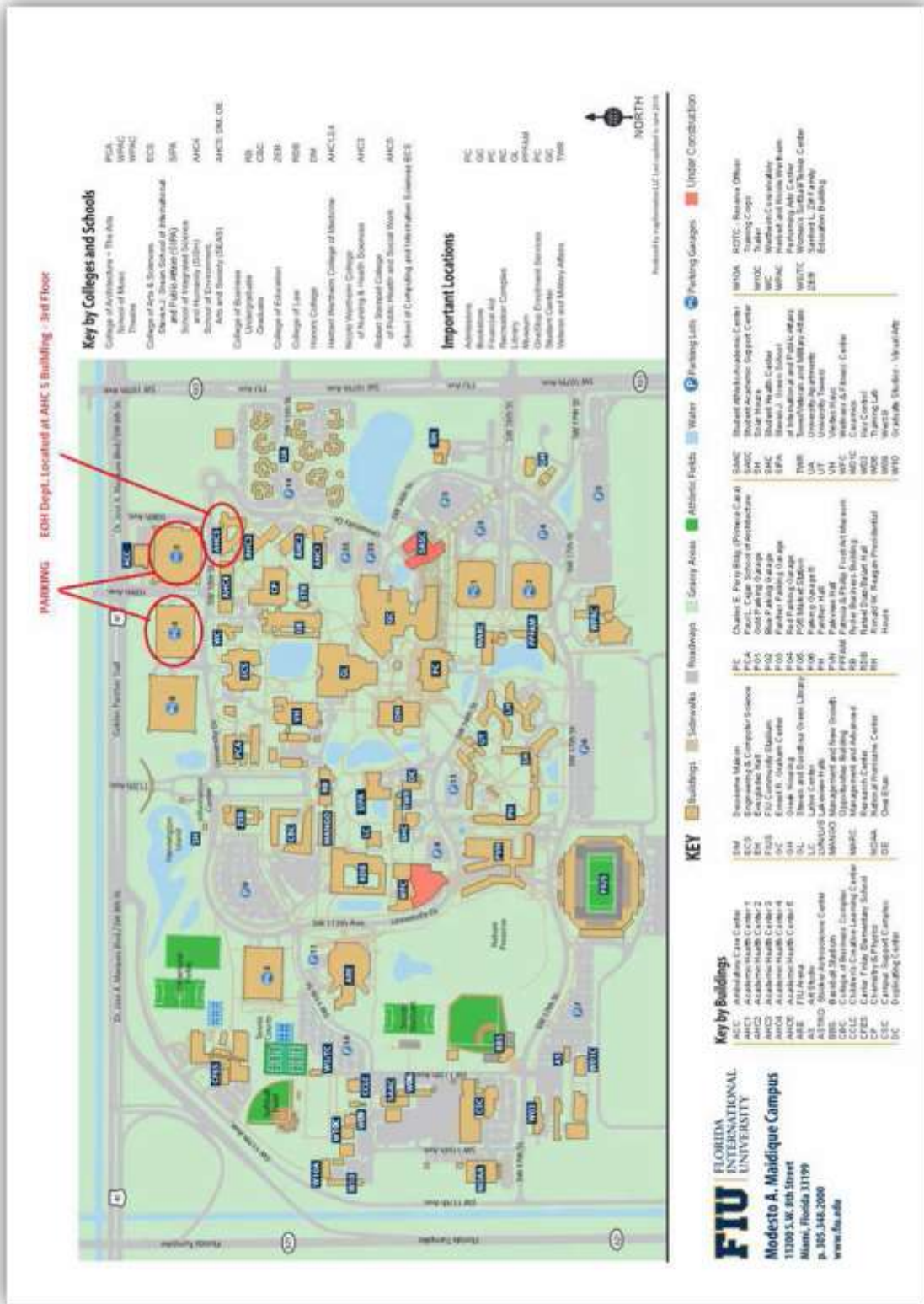
Graduate students must attempt to informally resolve an academic grievance as soon as possible; however, a student must initiate informal resolution by contacting the professor (or administrator as instructor of record) no later than ten (10) university days after classes begin in the semester following that in which the complaint arose or the grievance will be deemed untimely. The student must first attempt to resolve the academic grievance through an informal meeting with the professor. If the matter cannot be resolved, or if the professor cannot be reached, the student must meet next with the chair and failing resolution, with the academic dean. If the student's grievance is against a committee, the students must meet with the committee chairperson and the academic dean to attempt informal resolution. A mutually agreeable resolution shall be formalized through a notation in the student's file/record which is initialed by the student and the professor.

If an informal resolution cannot be reached within thirty (30) university days after the initial contact with the professor, then the student has the right to seek a formal resolution of the academic grievance.

### Formal Academic Grievance Procedure

The formal academic grievance procedure is initiated by filing a written complaint with the Dean of University Graduate School. The complaint must be filed within fifteen (15) university days of the date the informal resolution process ends, or within twenty (20) university days after classes begin in the semester following that in which the complaint arose--whichever is later. After receipt, the Dean of University Graduate School, in consultation with the Chairperson of the Graduate Grievance Committee, will review the complaint to determine whether it falls within the scope of this policy and whether a formal hearing is wanted. When there are disputed issues of material fact which must be determined, a formal hearing is warranted. If the complaint does not fall within the scope of this policy, then the student shall be so notified in writing by certified mail.

Map of FIU's Modesto Maidique Campus



## Environmental Health Sciences

**Jeremy W. Chambers**, *Interim Chair and Associate Professor*

**Kim Tieu**, *Professor*

**Diana Azzam**, *Assistant Professor and Director of Doctoral Programs*

**Alok Deoraj**, *Associate Teaching Professor and Graduate Program Director (MPH)*

**Quentin Felty**, *Associate Professor*

**Tomás R. Guilarte**, *Professor and Dean, Robert Stempel College of Public Health and Social Work*

**Stanislaw Wnuk**, *Professor and Associate Dean of Graduate Education*

**Muhammad Hossain**, *Assistant Professor*

**Roberto Lucchini**, *Professor*

**Xugang Xia**, *Professor and Associate Vice President of Translational Neuroscience at the FIU-Center for Translational Science (FIU-CTS)*

**Hongxia Zhou**, *Professor (FIU-CTS)*

**Stephen Black**, *Professor and Associate Vice President for Translational Research (FIU-CTS)*

**Ting Wang**, *Professor (FIU-CTS)*

**Haiwei Gu**, *Associate Professor (FIU-CTS)*

**Qi Lin Cao**, *Professor (FIU-CTS)*

**Heidi Mansour**, *Professor (FIU-CTS)*

**Ying Liu**, *Associate Professor (FIU-CTS)*

The Department offers a Graduate Certificate in Environmental Health Sciences (EHS), a Master of Public Health (MPH) with a major in EHS and an MPH with a major in Brain, Behavior, and the Environment (BBE). The department also offers a Ph.D. in Public Health with majors in Environmental Toxicology and Brain, Behavior, and the Environment (BBE).

### MPH in the Environmental Health Sciences

The graduate training programs in the Environmental Health Sciences are both interdisciplinary and interdepartmental. The Department of Environmental Health Sciences performs high quality mechanism- and evidence-based translational research, which impacts our teaching and training for future Environmental Health leaders. Our multidisciplinary EHS Faculty conduct world class research to investigate and prevent human diseases caused by environmental exposure, that goes beyond the traditional focus on hazardous agents.

### Admission Requirements

Applicants to the MPH program with a major in Environmental Health Sciences (EHS) must meet the following requirements:

1. A Bachelor's (or Master's) degree in biology, chemistry, physics, nursing, medicine, engineering, or other appropriate field with at least one (1) undergraduate biology, and one (1) undergraduate chemistry course from an accredited college or university or, in the case of foreign students, an institution recognized in its own country as preparing students for further study at the graduate level.

2. A minimum 3.0 GPA (on the last 60 undergraduate hours). In addition, applicants are required to submit 1) a current resume; and 2) a written statement of purpose (career goals).
3. International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 80 on the iBT TOEFL or 6.5 overall on the IELTS is required.

### Curriculum and Course Requirements

For the MPH with a major in Environmental Health Sciences, ALL students must complete the MPH core (15 credits) and departmental core courses (12 credits), EHS selected elective courses (12 credits), a Practicum (3 credits) and Integrative Seminar (3 credits) course.

#### MPH Core Curriculum: (15 credits)

|          |  |   |
|----------|--|---|
| PHC 6000 | Epidemiology I: Introduction to Public Health Epidemiology | 3 |
| PHC 6052 | Biostatistics I  | 3 |
| PHC 6102 | Health Policy in a Global Context                          | 3 |
| PHC 6315 | Introduction to Environmental Health Sciences              | 3 |
| PHC 6410 | Health Behavior and Public Health                          | 3 |

#### Environmental Health Sciences Core Courses: (12 credits)

|          |  |   |
|----------|--|---|
| PHC 6310 | Environmental Toxicology                         | 3 |
| PHC 6311 | Environmental Health Risk Assessment             | 3 |
| PHC 6355 | Environmental and Occupational Health and Safety | 3 |
| PHC 6374 | Environmental Disasters & Human Health           | 3 |

#### Elective Courses: (12 credits)

Choose four courses from the following:

|           |   |     |
|-----------|---|-----|
| PHC 6312C | Health Impacts of Air, Water, and Land Pollution    | 3   |
| PHC 6422  | Regulatory Aspects of Environmental Health Sciences | 3   |
| PHC 6442  | Global Environmental Public Health                  | 3   |
| PHC 6538  | Gene & Environment Interaction                      | 3   |
| PHC 6907  | Independent Study in Public Health                  | 1-3 |
| PHC 6920  | Special Topics in Environmental Health Sciences     | 3   |
| PHC 6380  | Introduction to Neurotoxicology                     | 3   |
| PHC 6730C | Neurotoxicology Research Methods                    | 3   |
| PHC 6382C | Neuropharmacology                                   | 3   |
| PHC 6383C | Neurobehavioral Techniques                          | 3   |

#### Practicum and Culminating Experience: (6 credits)

|           |                                      |   |
|-----------|--------------------------------------|---|
| PHC 6945  | Practicum in Public Health           | 3 |
| PHC 6930C | Integrative Seminar in Public Health | 3 |

PHC 6945 (Practicum) and PHC 6930C (culminating experience) are both required for all MPH students. The Practicum may be taken after completing a minimum of 30 hours, including all core courses. The Practicum may be waived if the student has at least 3 years of relevant practice experience working in a public health practice setting. The waiver request is prepared and submitted by the student, through their Faculty Advisor and Department Chair, for final approval/disapproval by the Academic Public Health Director. If the Practicum requirement is waived, the student will need to substitute 3 additional approved hours so that the total curriculum hour



requirement of 45 is met. MPH students are expected to complete PHC 6930C Integrative Seminar in Public Health during their last semester in the program.

## MPH in Brain, Behavior and the Environment

The total credit requirement for the MPH is 45 credits. The BBE concentration is part of the MPH Environmental Health Sciences major, which includes five courses (15) credits in the MPH Core Curriculum, four courses (12 credits) in the EHS major, and two courses (6 credits) in the Practicum and Culminating Experience. The other 12 credits will be from the BBE concentration required coursework.

### MPH Core Curriculum: (15 credits)

|          |  |   |
|----------|--|---|
| PHC 6000 | Epidemiology I: Introduction to Public Health Epidemiology | 3 |
| PHC 6052 | Biostatistics I  | 3 |
| PHC 6102 | Health Policy in a Global Context                          | 3 |
| PHC 6315 | Introduction to Environmental Health Sciences              | 3 |
| PHC 6410 | Health Behavior and Public Health                          | 3 |

### Environmental Health Sciences Core Courses: (12 credits)

|          |  |   |
|----------|--|---|
| PHC 6310 | Environmental Toxicology                         | 3 |
| PHC 6311 | Environmental Health Risk Assessment             | 3 |
| PHC 6355 | Environmental and Occupational Health and Safety | 3 |
| PHC 6374 | Environmental Disasters & Human Health           | 3 |

### Major in Brain, Behavior and the Environment Required Courses: (12 credits)

|           |                                  |   |
|-----------|----------------------------------|---|
| PHC 6380  | Introduction to Neurotoxicology  | 3 |
| PHC 6730C | Neurotoxicology Research Methods | 3 |
| PHC 6382C | Neuropharmacology                | 3 |
| PHC 6283C | Neurobehavioral Techniques       | 3 |

### Practicum and Culminating Experience: (6 credits)

|           |                                      |   |
|-----------|--------------------------------------|---|
| PHC 6945  | Practicum in Public Health           | 3 |
| PHC 6930C | Integrative Seminar in Public Health | 3 |

## Doctor of Philosophy in Public Health in Environmental Toxicology or Brain, Behavior and the Environment

The Doctor of Philosophy (Ph.D.) in Public Health is available with either a major in Environmental Toxicology, or Brain, Behavior and the Environment. Students will be expected to demonstrate significant research capacity by completing 60 credits beyond the Master's degree and through the writing of an original dissertation.

### Doctoral Admissions

Applicants must meet the University's general graduate admission requirements:

1. A four-year bachelor's degree or equivalent from a nationally accredited institution or, in the case of foreign students, from a well-established institution of higher learning that is authorized to grant degrees by appropriate authorities in that country.

2. A minimum of a 3.0 GPA, "B" average, in the last 60 upper-division undergraduate coursework, or a graduate degree from a nationally accredited institution.
3. International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 80 on the iBT TOEFL or a 6.5 overall on the IELTS is required or other University approved tests of English.

The College also requires:

1. A current resumé.
2. Three letters of recommendation.
3. A writing sample (Master's thesis or research project, published manuscript, or some other document which demonstrates writing ability).
4. A personal statement of research interest.

Potential applicants are strongly encouraged to contact individual faculty to discuss common research interests since admission decisions require identification of a faculty mentor, and evaluation of fit to the program.

### Doctoral Requirements

A student may enroll for dissertation credits after completing all coursework, passing the candidacy examination, and being advanced to candidacy. Dissertation credits cannot be taken before advancement to candidacy.

The candidacy examination will be prepared and graded by a committee consisting of a minimum of three faculty members. Admission to candidacy requires that a majority of the committee members agree that the student passed the examination. A candidacy examination may not be passed conditionally. A "Pass" on the examination cannot be made contingent upon other factors such as the completion of additional coursework or the preparation of extra research projects. Students will be allowed only two attempts to pass the candidacy examination.

After a doctoral student is admitted to candidacy, continuous registration for at least 3 dissertation credit hours each semester (including the summer term) is required until the dissertation requirement is fulfilled.

### Required Courses

The major requires a minimum of 75 credit hours beyond the baccalaureate which includes a minimum of credit hours of dissertation credits. There are three components to the Ph.D. curriculum. The first is a core curriculum shared across all majors (12 credit hours). The second component is specific to Environmental Health Sciences (9 credit hours). The third component is specific to the major (12 credit hours), followed by content and secondary field courses (to total a minimum of 18 required credit hours). The fourth component consists of the dissertation, including a minimum of 15 dissertation credit hours. The remaining credit hours to add up to the minimum university requirement of 75 credits will be determined in consultation with the student's advisor

### Shared Core Courses: (12 credits)

|          |                                  |   |
|----------|----------------------------------|---|
| PHC 6601 | Emerging Issues in Public Health | 3 |
| PHC 6091 | Biostatistics 2                  | 3 |

(or other approved Quantitative Methods course)

|          |  |   |
|----------|--|---|
| PHC 7981 | Research Concepts and Proposal Development | 3 |
| PHC 7705 | Methods in Evidence Based Public Health    | 3 |

**Courses for the Environmental Toxicology or Brain, Behavior and the Environment Majors** requires 9 hours of EHS Core Courses; 12 hours of major courses, and 9 hours of content and secondary field courses. Overall, this must include a minimum of 9 hours at the 7000 level.

**Environmental Health Sciences Core Courses: (9 credits)**

|           |  |   |
|-----------|--|---|
| PHC 6328  | Molecular & Cellular Toxicology        | 4 |
| PHC 6329  | Biomarkers                             | 3 |
| PHC 7732C | Research Ethics & Scientific Integrity | 1 |
| PHC 6921  | Environmental Health Sciences Seminar  | 1 |

**Students must choose one major: Environmental Toxicology or Brain, Behavior and the Environment**

**Environmental Toxicology Major: (12 credits)**

|          |  |   |
|----------|--|---|
| PHC 7300 | Biological Basis of Environmental Diseases           | 4 |
| PHC 7327 | Emerging issues in the Environmental Health Sciences | 2 |
| PHC 7374 | Organ-specific Toxicology                            | 4 |
| PHC 7713 | Advanced Environmental Toxicology Research Methods   | 2 |

OR

**Brain Behavior and the Environment Major: (12 credits)**

|           |   |   |
|-----------|---|---|
| PHC 7381C | Neuroscience                              | 4 |
| PHC 7731C | Advanced Neurotoxicology Research Methods | 2 |
| PHC 7384  | Advanced Neurotoxicology                  | 4 |
| PHC 7385C | Emerging Issues in Neurotoxicology        | 2 |

**Content Courses: (a minimum of 9 credits are required)**

At least 9 credit hours of approved content courses which best fit the chosen major. Content course may be selected from the approved EHS courses identified below, unless otherwise indicated.

|           |  |     |
|-----------|--|-----|
| PHC 6310  | Environmental Toxicology                                     | 3   |
| PHC 6311  | Environmental Health Risk Assessment                         | 3   |
| PHC 6312C | Health Impacts of Air, Water, and Land Pollution             | 3   |
| PHC 6355  | Environmental and Occupational Health and Safety             | 3   |
| PHC 6374  | Environmental Disasters & Human Health                       | 3   |
| PHC 6442  | Global Environmental Public Health                           | 3   |
| PHC 6422  | Regulatory Aspects of Environmental Health Sciences          | 3   |
| PHC 6538  | Gene & Environment Interaction                               | 3   |
| PHC 6907  | Independent Study in Public Health                           | 3   |
| PHC 6914L | Current Topics in Environmental Health Sciences Research Lab | 1-9 |
| PHC 6920  | Special Topics in Environmental Health Sciences              | 3   |
| PHC 6380  | Introduction to Neurotoxicology                              | 3   |
| PHC 6730C | Neurotoxicology Research Methods                             | 3   |
| PHC 6382C | Neuropharmacology  | 3   |
| PHC 6383C | Neurobehavioral Techniques                                   | 3   |

|           |  |   |
|-----------|--|---|
| PHC 7300  | Biological Basis of Environmental Diseases           | 4 |
| PHC 7327  | Emerging Issues in the Environmental Health Sciences | 2 |
| PHC 7374  | Organ-Specific Toxicology                            | 4 |
| PHC 7713  | Advanced Environmental Toxicology Research Methods   | 2 |
| PHC 7381C | Neuroscience   | 4 |
| PHC 7731C | Advanced Neurotoxicology Research Methods            | 2 |
| PHC 7384  | Advanced Neurotoxicology                             | 4 |
| PHC 7385C | Emerging Issues in Neurotoxicology                   | 2 |

**Secondary Field Courses: (a minimum of 9 credits are required)**

At least 9 credit hours of approved secondary field courses. Secondary field courses may be selected from approved graduate school courses in consultation with the student's academic advisor.

**Laboratory Research Requirement: (9 credits are required)**

|          |                       |     |
|----------|-----------------------|-----|
| PHC 7917 | Pre Doctoral Research | 1-9 |
|----------|-----------------------|-----|

**Dissertation Requirements: (a minimum of 15 credits are required)**

|          |              |    |
|----------|--------------|----|
| PHC 7980 | Dissertation | 15 |
|----------|--------------|----|

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And

To learn about faculty and EHS research areas, please visit our EHS website:

[https://stempel.fiu.edu/faculty/?\\_sft\\_units=04-environmental-health-sciences](https://stempel.fiu.edu/faculty/?_sft_units=04-environmental-health-sciences)



## Course Descriptions

### Definition of Prefixes

DIE-Dietetics; FOS-Food Science; FES-Fire and Emergency Services; FSS-Food Service Systems; GEY-Gerontology; HSC-Health Sciences; HUN-Human Nutrition; HSA- Health Services Administration; IHS-Interdisciplinary Health Sciences; PHC-Public Health; SOW-Social Work

**DIE 5247 Trends in Therapeutic Nutrition (3).** Evaluation and interpretation of current research in dietary care of metabolic diseases. Prerequisites: Diet therapy or approval of the instructor.

**DIE 5936 Advanced Practice Seminar (1-3).** Designed to provide didactic components in tandem with practice learning experiences in health care institutions. Covers material in clinical dietetics, management, and community nutrition. Utilizes a team approach and will draw on specialists from all areas of dietetics. Corequisites: DIE 6946, DIE 5947, DIE 5948 or permission of the instructor. (S)

**DIE 5948 Advanced Practicum in Clinical Nutrition (1-6).** Application of the principles, concepts, theories, and methodologies of administration and management to dietetic systems in healthcare and foodservice. Prerequisite: Permission of the instructor. DI course does not count towards M.S. degree. (F)

**DIE 6128 Dietetic Administration and Management (3).** Application of management and organizational theory to dietetic systems in health and community institutions.

**DIE 6259 Management of Nutrition Services (3).** Analysis of interdisciplinary nutrition services delivery with emphasis on management models and theories regarding division of work, quality improvement and productivity, leadership, motivation and planning, organizing, staffing, directing, and controlling.

**DIE 6285 Pregnancy and Lactation (3).** This course is designed to apply the principles of practical and comprehensive nutrition information on counseling and support needs during and between Pregnancy and Lactation. Prerequisites: HUN 6415 and HUN 6416.

**DIE 6286 Pediatric Obesity (3).** This course is designed to apply the latest tools and practice recommendations needed to educate and counsel in the area of childhood obesity and prevention. Prerequisites: HUN 6415 and HUN 6416.

**DIE 6287 Dysfunctional Eating in Pediatrics (3).** This course is designed to apply the principles of psychology, physiology, and nutrition to nutrition care and counseling for infants, children and adolescents engaged in dysfunctional/abnormal eating. Prerequisites: HUN 6415 and HUN 6416.

**DIE 6368 Advanced Techniques in Dietetic Practice (3).** Techniques and approaches in changing nutritional behavior, establishing private practice, providing dietetic services in various size institutions, hospitals, nursing homes, and in the community. Prerequisites: DIE 4435, DIE 4435L or equivalent. Corequisite: DIE 6368L. (S, even years)

**DIE 6368L Advanced Techniques Dietetic Practice Lab (1).** Individual practice in conducting interviews, planning

nutritional care, changing nutritional behavior, and providing dietetic consultation. Prerequisite: Permission of the instructor. Corequisite: DIE 6368. (S, even years)

**DIE 6567 Research II (3).** This course will further expand student knowledge and skills in research in Dietetics and Nutrition primarily through the development of a research proposal. Prerequisite: DIE 6568.

**DIE 6568 Research I (3).** Consideration of scientific methods and theoretical orientation as applied to research in dietetics. Special consideration given to various techniques of investigation, data collection, data organization, and interpretation. Prerequisites: STA 6166 or permission of the instructor.

**DIE 6576 Project in Dietetics and Nutrition (1-6).** Development and completion of a research project on a specific, important topic, question or need in the area of dietetics and nutrition. Prerequisites: DIE 6568; 12 hours graduate study, and permission of project advisor.

**DIE 6578 Qualitative Research Methods in Dietetics (3).** Application of qualitative research methods including field and case study approaches in interpreting and designing research studies. Introduction to interdisciplinary research. Prerequisite: DIE 6568.

**DIE 6906 Readings in Dietetics and Nutrition (1-3).** Dietetics and nutrition or in-depth advanced study of a specialty. Prerequisites: Permission of the instructor and advanced standing in graduate program. (F,S,SS)

**DIE 6907 Individual Study in Dietetics (1-3).** Intensive individual investigation of a phase of dietetics. Emphasis on recent findings in dietetics and allied disciplines. Prerequisite: Permission of the Instructor. (F,S,SS)

**DIE 6915 Supervised Research (1-3).** Continuation of thesis research under thesis advisor. Repeatable. Prerequisite: Completion of all other required course work. (F,S,SS)

**DIE 6929 Specialized Short Courses in Dietetics and Nutrition (1-3).** Intense courses on specialized topics in dietetics and nutrition for the advanced student or professional. Topic based on current nutrition concerns. Prerequisites: Advance graduate standing and permission of the instructor.

**DIE 6935 Special Topics in Dietetics (3).** In-depth study of historical, epidemiological, prevention, and treatment aspects of topics related to dietetics. Prerequisites: Competence in topic covered, admission to graduate program.

**DIE 6937 Graduate Seminar in Dietetics and Nutrition (1).** Presentations by researchers and doctoral students on studies, theories, applications; journal club presentations by students. Two semesters enrollment, M.S. students; three semesters Ph.D. students. (F,S)

**DIE 6946 Advanced Supervised Dietetics Practice I (6).** Advanced practical application of knowledge and skills in a supervised practice setting. Prerequisite: Permission of the instructor. DI course does not count towards M.S. degree. (S)

**DIE 6947 Advanced Supervised Dietetics Practice II (6).** Continuation of advanced practical application of knowledge and skills in a supervised practice setting.

Prerequisite: Permission of the instructor. DI course does not count towards M.S. degree. (F)

**DIE 6971 Thesis in Dietetics and Nutrition (1-6).** Prerequisites: DIE 6568 or DIE 6578, 12 hours of graduate study and permission of Thesis advisor. (F,S,SS)

**DIE 7566 Research Concept Development in Dietetics and Nutrition (3).** Grant proposal writing for dietetic and nutrition research. Prerequisite: DIE 6568, STA 6166, and STA 6167.

**DIE 7980 Ph.D. Dissertation (1-12).** Research for doctoral dissertation. Prerequisite: Permission of Major Professor and Doctoral Candidacy.

**FES 6000 Command and Control in Disasters (3).** To teach students how to manage disasters through systematic processes and methods.

**FES 6805 Disaster Field Operations (3).** Provides students with the knowledge and skills to engage in disaster work in field settings.

**FES 6806 Disaster Response and Recovery (3).** Designed to expose students to the principles and practices that promote effective disaster response and recovery operations.

**FES 6826 Disaster Preparedness and Planning Methodologies (3).** Provides a fundamental understanding about the importance of preparedness and planning, reasons for planning and identifies the people and organizations that may be involved in the planning process.

**FES 6846 Comparative Disaster Management Systems (3).** Introduction to the disaster management system applied in the U.S. and systems used to prepare and respond to international disasters.

**FES 6847 Foundations in Humanitarian Assistance and Coordination (3).** Focused on the role and responsibilities of the organizations engaged in humanitarian assistance.

**FES 6848 Disaster Health Readiness (3).** This course examines the efforts to provide humanitarian assistance from the perspective of the humanitarian agency and professional health worker in the field.

**FES 6856 Introduction to Disaster Logistics (3).** Focus on the process of planning, implementing and controlling the flow and storage of goods and materials from the point of origin to the point of consumption or use.

**FES 6857 Introduction to Vulnerability Analysis and Hazard Mitigation (3).** How to develop a community vulnerability analysis and implement mitigation and risk reduction initiatives to reduce future damage and build greater hazard resilient communities.

**FES 6858 Crisis Communications (3).** This course introduces students to the principles and practical tools of crisis communications during emergencies.

**FOS 6236 Food Toxicology & Food Safety (3).** Discusses food and water borne bacterial, parasitic, and viral infections and intoxication. Examines food additives, and contaminants. Describes toxic food constituents as well as naturally occurring toxicants. Prerequisites: Graduate standing and food science competency.

**FSS 6535 Computer Assisted Food and Nutritional Services Management (3).** Advanced course in computer analysis and utilization for detection and resolution of problems of food service and nutritional care. Prerequisites: Advanced graduate standing, DIE 6128 or equivalent, and computer competency.

**GEY 5600 Physical Change and Healthy Aging (3).** Primary health care and wellness with discussion and assessment of normal physiological alterations and their relationship to common health concerns and medical problems of older adults.

**HSC 4751 Statistical Applications (3).** The intent of this course is to familiarize students with the basic approaches to social research as applied in healthcare settings. Emphasis will be placed on techniques for organizing and presenting data for policy and management decision-making.

**HSA 6505 Risk Management (3).** This course provides students with the basics for managing risk in health care systems and prepares students to obtain a Certificate of Risk Management. Prerequisite: PHC 6102.

**HSC 7935C Doctoral Seminar in Health Systems Research (2).** This doctoral seminar includes presentations by researchers and doctoral students on studies, theories, and applications related to health systems research.

**HUN 5123 Ethnic Influences on Nutrition and Food Habits (3).** Systematic study of food habits of various cultural groups. Emphasis on methodology, analysis of data, relationship of food habits to nutritional standards, and corrective measures. Includes laboratory. Prerequisite: Competency in food preparation and nutrition. Recommended for non-majors.

**HUN 5195 International Nutrition: Problems, Policies, and Planning (3).** Advanced study of magnitude, causes and nature of under nutrition in developing countries; emphasis on programs, planning and policies directed toward alleviating hunger. Prerequisite: Permission of the instructor. Recommended for non-majors.

**HUN 5245 Nutrition and Biochemistry (3).** Advanced study of the relationship of nutrition and biochemistry with emphasis on digestion, absorption, metabolism of nutrients, and determination of norms. Prerequisites: Organic Chemistry and Physiology.

**HUN 5611 Nutrition Education in the Community (3).** In-depth study of nutrition education information and methods in the community including the nutrition education component of school food service and other congregate meal programs. Prerequisites: Recent courses in nutrition education or permission of the instructor.

**HUN 5621 Food, Nutrition and Communication (3).** Concepts and techniques for effective professional communication with individuals, groups and other professionals. Emphasis on communication via mass media. Prerequisites: Competency in food and nutrition knowledge.

**HUN 6248 Sports Nutrition (3).** The influence of exercise on specific nutrient demands and utilization of nutrients will be examined. Nutritional requirements and interrelationships between nutrition and exercise in the prevention and management of common diseases such as

obesity, hypertension, diabetes and cardiovascular disease will also be discussed. Prerequisites: Human Nutrition and Intermediate Physiology. (S, odd years)

**HUN 6254 Drug and Nutrient Interaction (3).** The interaction of drug and nutrient metabolism in relation to optimum nutrition. Prerequisites: Advanced Nutrition, Biochemistry, Physiology.

**HUN 6255 Nutrition in Wellness Program (3).** Examination of required factors for successful development, implementation and evaluation of wellness programs and investigation of interrelationships between nutrition/physical activity as means of chronic disease risk reduction. Prerequisites: Advanced Nutrition and Nutrition Education.

**HUN 6257 Physio/Psychology of Food Intake (3).** Examination of food intake regulation with applications in both research and practice. Prerequisites: Competence in nutrition and physiology.

**HUN 6266 Nutritional Assessment (3).** In-depth study of the methodology and application of nutritional assessment. Prerequisites: HUN 4241 or equivalent, DIE 3244 and Lab or equivalent, and DIE 4246 and Lab or equivalent.

**HUN 6285 Nutrition and Metabolism I (3).** Advanced study of the human nutrition of carbohydrates, lipid, fiber, thiamin riboflavin, pantothenic acid, biotin and choline. Prerequisites: Advanced Nutrition, Biochemistry, Physiology.

**HUN 6286 Nutrition and Metabolism II (3).** Advanced study of the human nutrition of protein, energy, folate, vitamin B6, vitamin B12 and water. Prerequisites: Advanced Nutrition, Biochemistry, Physiology.

**HUN 6287 Nutrition and Metabolism III (3).** Advanced study of the human nutrition of vitamins C, A, D, E, and K, and essential macro and trace minerals. Prerequisites: Advanced Nutrition, Biochemistry, Physiology.

**HUN 6295 Contemporary Issues in Food and Nutrition (3).** Critical evaluation of current controversies in nutrition and dietetics research. Prerequisites: Advanced Nutrition, Biochemistry, Physiology, Research Methods.

**HUN 6307 Carbohydrates and Lipids (3).** The biological, physiological and metabolic functions of carbohydrate and lipids as they relate to human nutrition. Prerequisites: Biochemistry, Advanced Nutrition and Physiology.

**HUN 6327 Proteins (3).** Protein metabolism, physiology and nutrition. Prerequisites: Biochemistry, Advanced Nutrition, and Physiology.

**HUN 6335 Functions of Vitamins (3).** Integration of chemical, biological and physiological functions of vitamins as related to human nutrition. Prerequisites: Advanced Nutrition, Biochemistry, Physiology. (S, even years)

**HUN 6355 Minerals in Human Nutrition (3).** The physiological and metabolic functions of selected macro and trace minerals as they relate to nutritional status in humans. Prerequisites: Advanced Nutrition, Biochemistry, Physiology. (S, odd years)

**HUN 6415 Pediatric Nutrition (3).** This course is designed to apply the principles of physiology,

biochemistry and nutrition to Medical Nutrition Therapy for healthy infants, children and adolescents.

**HUN 6416 Advanced Pediatric Nutrition (3).** This course is designed to apply the principles of physiology, biochemistry and nutrition to Medical Nutrition Therapy for medically compromised infants, children and adolescents. Prerequisite: HUN 6415.

**HUN 6417 Nutrition of the High Risk Infant and Newborn in Intensive Care (3).** This course is designed to apply the principles of physiology, biochemistry and nutrition to nutrition care and planning for high risk infants and newborns in intensive care.

**HUN 6435 Nutrition and Aging (3).** Changes associated with aging and the impact of nutrition on these changes. Prerequisite: Permission of the instructor. (S, odd years)

**HUN 6522 Public Health Nutrition (3).** Development and assessment of nutrition programs for the general population throughout the life cycle. Prerequisites: DIE 3310 or equivalent.

**HUN 7408 Nutrition Across the Lifespan (3).** The course will explore social, economic, physiologic, and lifestyle factors that influence nutrition status across the stages of growth and development, maturation, and aging. Prerequisites: HUN 4403, HUN 4241, DIE 5247.

**HUN 7523 Community Nutrition (3).** Evaluate models and methodologies to identify public health nutrition issues; analyze current and historical research/nutrition policy; recognize necessary infrastructure to support policy. Prerequisites: HUN 4410, HUN 6522, PHC 6500.

**HUN 7524 Nutrition Science and Implications for Community Health (3).** Critical examination and synthesis of current human nutrition science topics with emphasis on implications to human health, nutrition, public health policy, and research. Prerequisites: Nutritional Biochemistry and Pathophysiology.

**IHS 6502 Principles of Clinical Trials (3).** Advanced study of clinical trials including research design, ethics, monitoring and analysis. Prerequisites: PHC 6706 or equivalent.

**IHS 6937 Interdisciplinary Graduate Seminar (1-3).** Multidisciplinary seminar including foundations of reasoning and investigative methods focusing on a multi-dimensional problem related to social, legal, policy, economic, and health issues. Prerequisite: Research Methods.

**IHS 6948 FIU Behavioral Health Workforce Education and Training Fellowship (0-3).** Inter-professional and integrated care training of behavioral health clinicians and competent to serve the underserved, uninsured, economically disadvantaged and those with chronic health conditions. Prerequisite: Acceptance in BHWET Fellowship Corequisite: For Field Practicum II semester: SOW 6533, SOW 6425 For Field Practicum III semester: SOW 6534 and SOW 6351

**PHC 5009 AIDS: Contemporary Issues (3).** This course introduces the contemporary social and public health issues associated with the AIDS epidemic and the policies and programs designed to prevent HIV transmission.

**PHC 5108 Foundations of Public Health Practice for Social Workers (1).** This course will serve as an

introduction to applied public health (PH) for MSW level social workers, provide an overview of public health disciplines and provide exposure to its field applications.

**PHC 5158C A History of United States Health Policy (3).** Places contemporary health policy controversies into historical perspective by highlighting some of the major health-related issues that have drawn federal intervention during the past two centuries. Prerequisite: PHC 6102.

**PHC 5409 Public Health Behavior Change Theory and Practice (3).** A course for health promotion practitioners who lack formal training in behavior change foundations and strategies. The course emphasizes applications to practical development of health promotion interventions. (S)

**PHC 5415 Public Health in Minority/Urban Population (3).** Covers the scope of Public Health Issues related to minority and urban populations with an emphasis on health care status, utilization of the health care system and expenditures. (F)

**PHC 5581 Public Health Aspects of Complementary and Alternative Medicine (3).** Introduction of theory, practice and scientific evidence for complementary and alternative medicine. Emphasis on regulatory issues and quality assurance; politics of use and social, cultural and historical factors.

**PHC 5675 The Cuban Maternal and Child Health Paradox: A View from Santiago de Cuba (3).** This course consists of visits and encounters with workers in the front line of MCH in Cuba who contribute to the Cuban "paradox" (low maternal and infant mortality in a low-resource setting).

**PHC 6000 Epidemiology I: Introduction to Public Health Epidemiology (3).** This course is an introduction to the study of the distribution, determinants, and measurement of health and disease in populations, including design methods and their application. (F,S)

**PHC 6001 Environmental and Occupational Epidemiology (3).** This course covers outbreaks; cluster analysis; cross-sectional, case-control, cohort, ecological and time series designs; surveillance programs; environmental cancer; reproductive hazards, biological monitoring and biomarkers. Prerequisites: PHC 6315 and PHC 6000.

**PHC 6002 Infectious Disease Epidemiology (3).** This course covers principles specific to infectious disease epidemiology, explores the application of epidemiologic methods to infectious disease problems, and examines surveillance, and outbreak investigation. Prerequisites: PHC 6000 and PHC 6065.

**PHC 6003 Chronic Disease Epidemiology (3).** A review of selected epidemiologic research methodology as it applies to infectious and chronic diseases and its application towards understanding selected major infectious and chronic diseases from a population based perspective. Prerequisite: PHC 6000.

**PHC 6004 Injury Epidemiology and Prevention (3).** Analyzes the impact and extent of injuries as a public health problem. Issues of prevention, sources of data, environment, social and occupational aspects are included

in an epidemiological approach. Prerequisite: PHC 6000. (SS)

**PHC 6007 Cancer Epidemiology (3).** This course will provide an understanding of the epidemiological patterns, etiology and risk factors of cancer from a community and population perspective. Prerequisite: PHC 6000.

**PHC 6008 Cardiovascular Disease Epidemiology (3).** This course will increase understanding of epidemiological patterns, etiology and risk factors of selected major cardiovascular disease from a population based perspective. Prerequisites: PHC 6000, PHC 6065.

**PHC 6009 AIDS Epidemiology and Control (3).** Reviews the epidemiology, virology, immunology, and clinical aspects of HIV, and also examines its impact upon risk groups and the responses of society to the epidemic. Prerequisites: PHC 6000 and PHC 6065 or permission of the instructor. (S)

**PHC 6012 Current Research in Epidemiology (3).** This course will examine current areas of research in epidemiology and bring students into contact with researchers in various fields. Prerequisites: PHC 6000, PHC 6065. (S)

**PHC 6013 Epidemiology II: Observational Design (3).** The fundamental concepts, principles, and methods of observational epidemiologic research at an intermediate level. (S)

**PHC 6014 Behavioral Epidemiology (3).** This course will examine human behaviors as determinants of health and disease, methods of exploring these relationships, and ways of altering risk behaviors. Prerequisite: PHC 6000.

**PHC 6016 Social Epidemiology (3).** Explores the epidemiological aspects of health and medical care of the poor and disadvantaged population groups. Emphasis on the relationship of organization and delivery of health care, including health promotion, prevention, and related topics. Prerequisite: PHC 6000 and PHC 6065 or permission of the instructor. (F)

**PHC 6020 Clinical Epidemiology (3).** A course on methods in clinical epidemiologic studies, including study design, sample size, clinical measurements, clinimetric indices, casual inference, analytic issues and clinical decision making. Prerequisites: PHC 6065, PHC 6000 or permission of the instructor.

**PHC 6033 Mechanism of Complex Disease in Public Health (3).** This course will review genetic and non-genetic epidemiologic associations with complex diseases together with the underlying biological basis for them to develop strategies for prevention. Prerequisites: PHC 6000 and undergraduate course in (human) biology.

**PHC 6034 Intermediate Epidemiology (3).** This course is designed for Public Health students requiring a more thorough knowledge of the concepts and methods used in epidemiological research. Prerequisite: PHC 6000.

**PHC 6039 Healthcare Epidemiology and Infection Control (3).** The course introduces principles of healthcare epidemiology & infection prevention, epidemiology and prevention of healthcare associated infections, and interventions to control such infections. Prerequisite: PHC 6002

**PHC 6052 Biostatistics I (3).** An introduction to basic biostatistical techniques for MPH students majoring in Biostatistics, but also open to those seeking a thorough understanding of and ability to use the essential biostatistical procedures. Prerequisites: Familiarity with basic algebra and basic calculus is important.

**PHC 6055 Data Management and Epidemiologic Analysis Using SAS/SPSS (3).** Covers practical issues related to the management, security, and analysis of epidemiologic data by creating, managing, and analyzing an epidemiologic database using statistical software packages. Prerequisite: PHC 6052, or permission of the instructor.

**PHC 6056 Longitudinal Health Data Analysis (3).** Applied longitudinal health data analysis; methods to compare different health treatments and behavioral interventions. Focus will be on models for single and multiple correlated public health outcomes. Prerequisites: PHC 6052, PHC 6091 or permission of the instructor.

**PHC 6059 Survival Data Analysis (3).** Concepts of lifetime events and survival data in Public Health; modern methods used to analyze time-to-event data; non-parametric and parametric models. Prerequisite: PHC 6052, PHC 6091, or permission of the instructor. Corequisite: PHC 6091.

**PHC 6060 Principles and Approaches to Biostatistical Consulting (3).** The course specifically addresses the process of providing biostatistical consulting support for public health, medical and clinical research. Prerequisites: PHC 6052, PHC 6091, PHC 6093.

**PHC 6062 Systematic Reviews and Meta-Analysis (3).** This course is designed to train students in the conduct of a systematic literature review and developing the skills critical for evidence-based clinical and public health practice.

**PHC 6063C Health Policy Database Applications I (3).** In this course students identify and manage secondary data to obtain quantitative evidence to support public health/health system decision making. Prerequisites: PHC 6000, PHC 6065

**PHC 6064 Applied Statistical Methods for Discrete Data (3).** This course will offer students a focused introduction to statistical models for the analysis of binary medical and public health data. The course will provide an introduction to the application of statistical models for PH outcomes in epidemiology, dietetics and nursing. Prerequisite: PHC 6052 or permission of the instructor.

**PHC 6065 Public Health Statistics (3).** Covers the basic concepts and tools for non-biostatisticians, including descriptive statistics, confidence intervals, hypothesis testing, the basic statistical tests and data presentation. (F,S)

**PHC 6067 Probabilistic Graphical Models (3).** Concepts and implementation of Probabilistic Graphical Models, comparative study the models, and their suitability for various datasets. Prerequisites: PHC 6052, PHC 6091, or permission of the instructor.

**PHC 6080 SAS Computing for the Health Sciences (3).** Course covers essential computer-based techniques for the SAS system for data management and statistical analysis relevant to public health. Topics include:

programming techniques, macro programming, and SQL with SAS. Prerequisites: PHC 6052, PHC 6091 or permission of the instructor.

**PHC 6084 Introduction to Bayesian Inference (3).** This course will introduce students to probabilistic statistical inference using the Bayesian approach, as well as equip students to perform basic computing within the Bayesian statistical framework. Prerequisite: PHC 6052 and PHC 6091.

**PHC 6086 Cluster Analysis for Public Health (3).** This course introduces data matrix, types of data, measures of similarity, hierarchical and non-hierarchical clustering methods, density based methods, clustering trees, and number of clusters. Prerequisites: PHC 6065 or an equivalent, basic calculus and linear algebra.

**PHC 6087C Health Policy Database Applications II (3).** Students will analyze secondary data and communicate results to inform evidence-based public health/health system decision making. Prerequisite: PHC 6102, PHC 6063C

**PHC 6090 Advanced Public Health Statistics (3).** Public Health Statistics continuation. Covers the concepts and interpretation of randomized blocks and factorial ANOVA, multiple, logistic and proportional hazards regression techniques and survival analysis. Prerequisite: PHC 6065.

**PHC 6091 Biostatistics 2 (3).** Continuation of Biostatistics I. Covers advanced methods for ANOVA, different regression and correlation techniques and survival analyses. Prerequisite: PHC 6052.

**PHC 6093 Biostatistical Data Management Concepts and Procedures (3).** Covers procedures and tools for data management, including data collection, transfer, handling, quality and security issues for research projects for public health, medicine and related fields.

**PHC 6099 R Computing for Health Sciences (3).** This course will introduce R statistical software computing and analytics associated with topics discussed in Biostatistics I and II. Prerequisite: PHC 6052 Biostatistics I or equivalent statistics course with permission of instructor. Corequisite: PHC 6091 Biostatistics II or permission of instructor.

**PHC 6102 Health Policy in a Global Context (3).** This core public health course introduces students to comparative health systems and policies in the United States and globally with key concepts and methods in policy assessment and evaluation.

**PHC 6103 Introduction to Applied Public Health (3).** This course will serve as an introduction to applied public health and provide an overview of core public health disciplines with hands-on exposure to its application in the field.

**PHC 6104C Public Health Management and Leadership (3).** This course integrates theory with practice by examining management, leadership and organizational behavior in public health organizations.

**PHC 6110 Health Risk Appraisal (3).** Health promotion technique designed for identifying personal health risks and the use of these methodologies for inducing behavioral change. Evaluation of the effectiveness of various health appraisal instruments. Prerequisite: Biostatistics and Epidemiology.

**PHC 6113 Community Health Promotion Planning and Research (3).** This course allows students to develop and apply the research principles necessary for needs assessments, planning, implementation, and evaluation of health promotion programs for diverse populations. Prerequisite: PHC 6410

**PHC 6118 Population Health Management and Improvement I (3).** This course is an introduction to population health management, an emerging model in healthcare delivery that involves moving from individual-based episodic healthcare to a population health model. Prerequisite: PHC 6102.

**PHC 6146 Health Promotion Program Planning and Intervention Design (3).** The principles of and practices of health promotion program planning and design, development, testing of behavioral interventions are described and explained in this course. Prerequisites: PHC 6410, PHC 6706, PHC 6065.

**PHC 6147C Continuous Quality Improvement in Healthcare Organizations (3).** This course covers continuous quality improvement (CQI) strategies in healthcare and health systems, including foundational concepts in patient safety and quality, leadership, teams, and systems. Prerequisite: PHC 6102

**PHC 6148 Strategic Planning for Healthcare Organizations (3).** This course introduces students to strategic planning for healthcare organizations encouraging modern business approaches, including the planning process and using data to identify growth opportunities. Prerequisite: PHC 6102.

**PHC 6150 Public Health Policy Analysis and Formulation (3).** Strategies for formulating public health policy; political processes; resource allocation, organization, and participation. Examination of current policy issues and efforts to effect change. (SS)

**PHC 6154C Evidence Synthesis Applied to Clinical Settings and Health Policy-Making (3).** This decision-making processes in health-policy and clinical settings and describes methods for communicating evidence synthesis to its end-users. Prerequisites: PHC 6000, PHC 6065.

**PHC 6155C Health Policy Analysis (3).** Students will analyze public health and health care policies from multiple perspectives, communicate health policy issues via written reports, and develop the capacity to collaborate with peers. Prerequisite: PHC 6065.

**PHC 6160 Public Health Budgeting and Financial Management (3).** The course covers the analysis of healthcare financial statements, cost allocation, and budgeting. It introduces the basic concepts of accounting and reimbursement methods of healthcare organizations.

**PHC 6183 Disaster Risk and Emergency Management in Public Health I (3).** This course meets the demand for new management strategies and skills that will permit an orderly, structured, effective, and flexible approach to health emergency preparedness and response.

**PHC 6185 Disaster Risk and Emergency Management in Public Health II (3).** This course meets the demand for new management strategies and skills that will permit an orderly, structured, effective, and flexible approach to health preparedness and response. Prerequisite: PHC 6183.

**PHC 6190 Biostatistical Methods for Survey Research (3).** Discusses the biostatistical issues for sample surveys in the health sciences. Includes the use of national/state health databases. Prerequisites: PHC 6052, PHC 6091, or permission of the instructor.

**PHC 6251 Disaster and Emergency Epidemiology (3).** Disaster and Emergency Epidemiology studies the public health response to natural disasters, environmental emergencies and perpetuated acts of terrorism.

**PHC 6256C Population Health Management and Improvement II (3).** This is second in a two-course sequence. This course moves students from the conceptualization of population health management issues and initiatives to real-world implementation and evaluation. Prerequisites: PHC 6102 and PHC 6118.

**PHC 6306 Intersections Between Human and Planetary Health (3).** This interdisciplinary course examines how the environment, both natural and anthropomorphic, can profoundly impact human and population health outcomes at local, regional, and global levels.

**PHC 6307 Exposure Assessment in Environmental and Occupational Epidemiology (3).** Surveys available mechanisms utilized by public health and environmental agencies to monitor levels of pollution, environmental quality, and change in environmental conditions which impact human health. Prerequisites: PHC 6000, PHC 6065, PHC 6315. (SS)

**PHC 6310 Environmental Toxicology (3).** Theory and practice of occupational and environmental toxicology; health effects of toxins in humans; principles of toxicology; toxicokinetics; and health effects of toxins on organ systems. Prerequisite: PHC 6315.

**PHC 6311 Environmental Health Risk Assessment (3).** This course explores environmental health care management problems associated with risk to the population from exposure to particular agents and conditions. Emphasizes practical problems in risk estimation through the case method approach. Prerequisite: PHC 6315. (S)

**PHC 6312C Health Impacts of Air, Water and Land Pollution (3).** The course covers the impact of air, water and land pollution on human health/well-being and on the whole environment plus pollution and control measures of each kind of pollution. Prerequisite: PHC 6315.

**PHC 6315 Introduction to Environmental Health Sciences (3).** An overview of public health philosophy and government organization in the provision of official agency, environmental, and preventive medicine services, with particular emphasis on the regulatory and surveillance responsibilities authorized in the public sector. (F,S)

**PHC 6316 Environmental Health Management (3).** The course provides the student with skills in management of the programs dealing with food, water, waste, radiation, workplace, air, energy, human establishments, and humanitarian challenges. Prerequisites: PHC 6315 or permission of the instructor.

**PHC 6326 Emerging Environmental Health Issues (Local/County, State, U.S., and Global) (3).** This course



is designed to provide students in environmental health with a step-by-step guide to the practical application of knowledge already acquired in environmental and occupational health sciences.

**PHC 6328 Molecular and Cellular Toxicology (4).** The course is designed to provide a mechanistic understanding of how environment agents result in toxicity at the cellular and molecular level through interactions with receptors, enzymes, and DNA.

**PHC 6329 Biomarkers (3).** This course will provide an understanding of the principles, identification, validation and application of molecular biomarkers, and their use health/disease risk assessment in human populations.

**PHC 6355 Environmental and Occupational Health and Safety (3).** Assessment of environmental/occupational health risks and injuries and preventive principles including regulations, standards, health surveillance, risk communication, workplace emergency preparedness. Prerequisite: PHC 6315.

**PHC 6356 Fundamentals of Industrial Hygiene (3).** The course covers recognition, evaluation, and control of chemical biological and physical agents in the workplace; application to exposure, control measures, and standard setting procedures. Prerequisite: PHC 6315.

**PHC 6374 Environmental Disasters and Human Health (3).** This course will provide an overview of environmental disasters and the measures designed to reduce the impact of disasters on Environmental Health. It aims to strengthen the ability of people to withstand the disruption of their accustomed infrastructure and systems for environmental health.

**PHC 6380 Introduction to Neurotoxicology (3).** This master-level course will provide students a knowledge of how environmental neurotoxicants may impact the development and progression of brain diseases such as Alzheimer's and Parkinson's.

**PHC 6382C Neuropharmacology (3).** This course introduces fundamental concepts in neuropharmacology, such as pain relief and mood modulation, and describe how environmental factors affect drug actions in the nervous system.

**PHC 6383C Neurobehavioral Techniques (3).** A master's level course designed to introduce students to neurobehavioral methods used in the research lab and clinic to assess the effects of environmental exposures. Prerequisite: PHC 6380, PHC 6382C

**PHC 6410 Health Behavior and Public Health (3).** The overall goal of this course is to introduce the student to the learning and behavioral science theories that provide the framework for the practice of health promotion and public health. Prerequisites: Public Health major or permission of the instructor. (F,S)

**PHC 6412 Health Promotion in Culturally Diverse Communities (3).** This course will examine both analytical and practical approaches to cultural competency, cultural humility, and addressing the public health needs of culturally diverse communities.

**PHC 6422 Regulatory Aspects of Environmental Health Sciences (3).** The application of law as it relates to the environment and human health. Legal process and

rule-making; cost-benefit analysis; judicial review; evidentiary problems; and other elements of environmental law are emphasized. Prerequisites: PHC 6000, PHC 6065 and PHC 6315. (S)

**PHC 6430C Public Health Economics (3).** This course focuses on the application of basic microeconomics tools to the analysis of consumers', producers', and insurers' behavior in the market for health care. Prerequisite: PHC 6065 or permission of the instructor.

**PHC 6436 Advanced Issues in Economic Evaluation of Health Care Programs (3).** This course presents applications of economic evaluation issues including cost analysis, health outcomes, and health state utilities. Prerequisites: PHC 6065, PHC 6430.

**PHC 6441 Epidemiology of Health Disparity (3).** This course is designed to provide an overview and understanding of Health Disparity, its indicators, measuring methods and models as well as theoretical underpinning for explanation of Health Disparity. Prerequisites: PHC 6000 and PHC 6065.

**PHC 6442 Global Environmental Public Health (3).** This graduate level course addresses global public health issues by integrating the complex molecular, biological, environmental, technological and social system interactions causing diseases. Prerequisites: PHC 6315 or PHC 6312 or by instructor's permission and IDS 3189 or IDS 3183.

**PHC 6443 Ethical Issues in Public Health (3).** This course provides an overview of ethical principles, perspectives, and decision-making in public health. (F,S)

**PHC 6465C Public Health and Medicine in History (3).** This course introduces students to central themes and questions pertaining to the history of medicine, public health, and health care in the United States.

**PHC 6500 Foundations of Public Health Practice (3).** Philosophy, nature, and scope of public health; organization and administration; principles of disease prevention and health promotion; current issues and trends; socioeconomic and political forces. Prerequisites: Public Health major or permission of the instructor. (F,S,SS)

**PHC 6504 Introduction to Public Health Education and Wellness (3).** Primarily intended to introduce graduate students to concepts and principles underlying the use of Public Health and Behavioral Strategies to positively influence behavioral patterns. Prerequisites: Public Health major or permission of the instructor. (S)

**PHC 6510 Advanced Infectious and Tropical Disease Epidemiology (3).** Course covers advanced principles specific to tropical infectious disease biology, immunology, pathogenesis, epidemiology, and investigation strategies relevant to S Florida, Caribbean, Latin America. Prerequisite: PHC 6000 and PHC 6002

**PHC 6520 Public Health Aspects of Foodborne Diseases (3).** Examines the scope of the foodborne disease problem; factors that contribute to outbreak of foodborne disease; strategies for the prevention and control of these diseases are explored. Prerequisites: PHC 6000, PHC 6065, and PHC 6315. (SS)

**PHC 6530 Principles of Maternal and Child Health (3).** Covers the scope of the field of maternal and child health with emphasis on the needs of infants, children, youth, women and families in the reproductive cycle and programs designed to meet these needs. Prerequisites: Public Health major or permission of the instructor. (S)

**PHC 6531 Environmental Justice: Contextualizing Maternal and Child, Women, Youth, and Family (WYF) Wellbeing (3).** Explores disparities in exposures to environmental agents and conditions and related adverse events and outcomes relevant to maternal, child, reproductive, and family health and approaches to respond.

**PHC 6536 Health Demography (3).** The study of basic population structure, composition, trends and relationship to health status. Implications of demographic trends, policies for public health; population growth, immigration, infant mortality. Prerequisites: PHC 6065 or permission of the instructor. (SS)

**PHC 6537 Case Studies in Maternal and Child Health Programs, Policies and Research (3).** Seminar course focused on intended and unintended impact of programs and policies on the health of women and children from a life course perspective, identifying research gaps and needs. Prerequisite: PHC 6530 or permission of the instructor. Corequisite: If student has not taken PHC 6530, should be taken concurrently.

**PHC 6538 Gene & Environment Interaction (3).** Genetic issues and topics that impact on Public Health will be covered such as HW gene frequencies and HUGO. A public health perspective with a field of study.

**PHC 6580 Contemporary Issues in Health Promotion (3).** Current problems and findings in health promotion content areas such as smoking, alcohol, and drug misuse, family health, safety, physical fitness, communicable and chronic diseases will be discussed. Prerequisites: PHC 6000 and PHC 6065. (SS)

**PHC 6589 Health Promotion in Institutional Settings (3).** This course will investigate the role, methods and techniques used to promote health in diverse settings such as clinic and community agencies, schools, universities and workplaces. (SS)

**PHC 6591 Reproductive Health Epidemiology (3).** This course focuses on current research, methodological issues, and discusses case studies in the epidemiology of reproductive and perinatal health from domestic and international setting. Prerequisites: PHC 6000 and PHC 6065.

**PHC 6595 Genetic Epidemiology (3).** This course provides a background to genetic epidemiologic methods, and focuses on design, execution, analysis and interpretation of genetic association studies. Basic genetics will also be covered. Prerequisites: PHC 6000 or approval by instructor.

**PHC 6600 Health Promotion Communication Theory and Design (3).** Theory, design, and implementation of health education communication utilized in reaching the public. Emphasis on the critical analysis of the communication processes; group techniques and media methods; and the consultation process. Prerequisites:

Health Promotion Concentration or by permission of the instructor. (F)

**PHC 6601 Emerging Issues in Public Health (3).** Investigation of emerging public health issues, such as public health informatics, genomics, global health, policy and law, and public health ethics, within the framework of ecological model.

**PHC 6602 Theoretical Foundations of Health Promotion (3).** The course will emphasize the use of psychosocial theories in understanding and addressing public health problems. Prerequisites: PHC 6410, PHC 6065.

**PHC 6604 Current Issues in Health Policy (3).** This course is an intervention of current public health policy issues, such as chronic disease, health disparities, and healthcare reform within a policy analysis framework.

**PHC 6605 Global Healthcare Quality and Safety (3).** This course takes students from basic concepts to major challenges of patient safety and quality from a global health perspective. An optional 1-week global learning experience in Brazil is offered. Prerequisite: PHC 6102

**PHC 6609 Healthy Aging for Global Populations (3).** This course examines the multiple challenges of aging populations globally. The implications of this changing demographic worldwide for health provision will be explored as well as health equity.

**PHC 6660 Global Burden of Disease (3).** A transdisciplinary overview of the global burden of disease addressing three major modules: infectious diseases; non-communicable medical illnesses; and psychiatric and behavioral disorders.

**PHC 6661 Global Health Governance (3).** This interdisciplinary course examines theoretical tools, background knowledge, legal overview and diplomatic skills necessary for professional engagement with global health institutions and actors..

**PHC 6662 Global One Health (3).** This course enables students to examine the global historical influence of demographic, epidemiological, and socio-cultural transitions at the intersection of environment, health, and wellbeing.

**PHC 6663 Global Mental Health (3).** This course focuses on improving and achieving equity in mental health for populations around the world. Students are actively engaged through critical thinking using an inquiry-based pedagogy.

**PHC 6673 Comparative Health Systems (3).** This course examines the diversity of health system challenges and policy choices of low-, middle-, and high-income countries. Implications for healthcare delivery and reform are discussed. Prerequisite: PHC 6102

**PHC 6700 Methods and Analysis in Epidemiological Research (3).** This course provides understanding of principles, methods and analytical techniques applied in epidemiologic research using multimedia and interpersonal approaches of instructions to motivate and explain with real life examples. Prerequisite: PHC 6000.

**PHC 6701 Advanced R Computing (3).** This course will introduce writing statistical computing and data science code in R covering data structures, graphics, reports,

functions and scripts for analysis pipelines. Prerequisite: PHC 6099 or equivalent computational statistics course (with instructor permission).

**PHC 6703 Epidemiology Methods: Experimental Design (3).** Introduction to clinical and community trial design and conduct, randomization, blinding, recruitment, data collection, assessment of adverse effects, compliance with therapy, and analyses. Prerequisites: PHC 6013, PHC 6xxx – Public Health Statistics II.

**PHC 6706 Research Methods in Public Health (3).** Study of scientific research, inductive and deductive thinking, research methods and design as applied to the field of Public Health. Prerequisite: Undergraduate statistics course.

**PHC 6709 Quantitative Research Analysis in Health Urban Affairs I (3).** Application of quantitative techniques used for research analysis in health and urban affairs research and practice settings. Prerequisites: STA 3145 or STA 6166 or equivalent.

**PHC 6715 Survey Research in Public Health (3).** Health survey design, implementation and analysis, and interpretation of data. Emphasis on practical aspects of conducting health surveys. Study of existing health surveys. Prerequisites: PHC 6000 and PHC 6065. (F,S)

**PHC 6730C Neurotoxicology Research Methods (3).** A master's level course designed to introduce students with fundamental approaches in neurotoxicology and interpreting research results in environmental health sciences. Prerequisite: PHC 6380.

**PHC 6750 Program Development and Evaluation in Health Promotion (3).** Focuses on the development, implementation, and evaluation of health promotion programs to improve health outcomes. Prerequisites: PHC 6000 and PHC 6065. (SS)

**PHC 6751 Community Organization for Health Promotion (3).** Emphasis is on the diagnosis of community health problems and various organizational strategies utilized for effective solution. Review and analysis of community organization process; resources; and the role of health promotion specialist. Prerequisites: Health Promotion Concentration or permission of the instructor. (F)

**PHC 6754C Analytic Methods in Maternal and Child Health (3).** Enhances skills in independent data analysis using free software (Epi Info, OpenEpi) and publicly available data in local and state health agency professionals and students preparing for MCH practice.

**PHC 6762 International Public Health (3).** This course describes international differences in the distribution and determinants of disease and health, and examines interventions aimed at improving health status. (F)

**PHC 6763 Global Perspectives of Environmental Health in Caribbean and Latin America (3).** The course describes the relationship between human health and the environment in developing countries of the Caribbean and Latin America. Prerequisite: PHC 6315.

**PHC 6900 Environmental Public Health Genomics and Molecular Toxicology Journal Club (1).** Students will learn to read, evaluate, present and discuss papers. Papers will be presented on a diverse set of topics related

to genetics of environmental human diseases and molecular toxicology.

**PHC 6901 Readings in Public Health (1-3).** Individual advanced study in a comprehensive overview of Public Health or in-depth advanced study of a specialty. Prerequisites: Permission of instructor and Advanced standing in the graduate program.

**PHC 6907 Independent Study: Public Health (1-3).** Allows student investigations of special topics and issues utilizing literature searches, analysis, or active performance in public health settings under the direction of faculty supervision. Prerequisite: Permission of the faculty advisor.

**PHC 6914L Current Topics in Environmental Health Sciences Research Lab (1-9).** To conduct laboratory based analytical research and collect data.

**PHC 6920 Special Topics in Environmental Health Sciences (3).** This course is designed to impart in depth knowledge of emerging issues in the area of environmental and occupational health.

**PHC 6921 Environmental Health Sciences Seminar (1).** This is an oral communication course intended to provide graduate students the opportunity to practice speaking in front of an audience and to present their research data or topic of interest.

**PHC 6930C Integrative Seminar in Public Health (3).** Integrative Seminar serves as the culminating experience for MPH degree and the final assessment of the public health competencies required of MPH graduates. Prerequisites: PHC 6945 or instructor consent, if exempt from PHC 6945.

**PHC 6931 Special Topics in Biostatistics (1-3).** This is a series of 1-3 credit hour offerings, on topics of considerable interest to advanced masters and doctoral students in public health, not limited to statistical methods. Prerequisites: PHC 6052, PHC 6091, or permission of the instructor.

**PHC 6934 Scientific Writing and Oral Presentations in Epidemiology and Biostatistics (3).** Covers the planning and execution of written and oral presentations in epidemiology/biostatistics by critically evaluating published articles and preparing a manuscript and an oral presentation. Prerequisites: PHC 6000 and PHC 6065.

**PHC 6939 Special Topics in Cardiovascular Disease Epidemiology (3).** The purpose of this course is designed to impart in-depth knowledge of a particular cardiovascular disease or risk factor that is affecting populations nationally and or internationally. Prerequisites: PHC 6000, PHC 6065, or permission of the instructor.

**PHC 6945 Practicum in Public Health (3).** This course is a preceptor-guided experience in public health organization. It provides an opportunity for graduate students in Public Health to bridge the gap between theory and practice. Prerequisite: Permission of the faculty advisor. (F,S,SS)

**PHC 6971C Master's Thesis in Public Health (1-6).** The Master's Thesis is a scholarly manuscript resulting from a long period of research and related preparation, undertaken to fulfill partially the requirements of an advanced degree.

**PHC 6977 Master's Research Project (3).** Course provides the student with an opportunity to pursue research in an area pertaining to Public Health.

**PHC 7011 Advanced Current Research in Epidemiology (3).** The purpose of this course is to examine and critically review current areas of research in Epidemiology with focus on observation studies. Prerequisites: PHC 6000, PHC 6013, PHC 6065 or equivalent.

**PHC 7015 Advanced Research Methods-Experimental Design (3).** A course on methods in experimental epidemiologic studies, including randomization, blinding, assessment of adverse effects, compliance, and intent-to-treat, survival and subgroup analyses. Prerequisites: PHC 6000, PHC 6065, PHC 6013.

**PHC 7017 Advanced Epidemiology for Health Disparity (3).** Provides advanced understanding of health disparity - disparity indicators, complex measurement methods and applications, theoretical frameworks, and analysis and evaluation of programs/policy. Prerequisites: PHC 6055 and PHC 6065 or equivalent.

**PHC 7018C Advanced Environmental Health (3).** The objective of this course is to teach students advanced toxicology principles such as toxicokinetics, polymorphisms of metabolizing enzymes, toxicogenomics, and biomarkers of toxic exposure. Prerequisite: PHC 6310.

**PHC 7050 Advanced Biostatistics I (3).** Introduction to mathematical expectation of random variables, probability distributions, moment generating functions, sampling, covariance and correlation, point estimation of distribution parameters. Admission to the PhD program in Biostatistics, or satisfactory completion of the following undergraduate courses or their equivalents: MAC 2311-2313, MAS 3105, STA 3111-3112, STA 3163-3164, MAA 3200, STA 4321-4322, MAA 4211-4212.

**PHC 7051 Advanced Biostatistics II (3).** Familiarize students with the likelihood principle, point estimators, interval estimators, hypothesis testing, Bayesian point and interval estimators, and asymptotic evaluations. Prerequisite: PHC7050 or equivalent (permission from instructor).

**PHC 7054 Advanced Biostatistics III (3).** Generalized linear model and estimating equation approaches for non-linear public health data. Held in the Public Health Informatics Laboratory utilizing various statistical software. Prerequisites: PHC 7050, PHC 7051, or permission of the instructor.

**PHC 7064 Applied Structural Equation Modeling (3).** Will introduce the application of SEM to public health data including model specification, path analysis, testing fit, confirmatory factor analysis, longitudinal data analysis, and the interpretation. Prerequisite: PHC 6052 and PHC 6091 or equivalent courses (with instructor permission)

**PHC 7083 Advanced Bayesian Inference (3).** This course will cover advanced topics related to Bayesian methods such as prior assumptions, hierarchical modeling and computational MCMC methods with various sampling algorithms. Prerequisite: PHC 6084 or equivalent

**PHC 7095C Advanced Methods for Health Systems Research (4).** This course focuses on quantitative

research methods using secondary data and introduces students to a wide spectrum of national and global health policy databases. Prerequisite: PHC 6091.

**PHC 7162 Grant Writing in Public Health (3).** Course covers proposal writing political/social aspects of "grantmanship" identifying sources of grant funding doing research to support the application, and tailoring the proposal to specific audiences. Prerequisites: PHC 6091, PHC 7705, PHC 7981.

**PHC 7198 Advanced Qualitative Methods in Public Health (3).** Advanced research design, data analysis and writing findings in qualitative research. Prerequisites: PHC 6706, PHC 6715, or equivalent advanced research methods.

**PHC 7300 Biological Basis of Environmental Diseases (4).** This course describes the state of homeostasis of anatomical and physiological systems where contributing environmental factors are translated to influence the human health and diseases.

**PHC 7327 Emerging Issues in Environmental Health Sciences (2).** This course will explore emerging scientific discoveries to understand environmental human disease and how the emerging technologies can be applied to environmental health and regulatory decisions.

**PHC 7372 Signal Transduction in Environmental Health and Toxicology (3).** Designed to develop critical and analytical thinking about how hazardous agents interfere with normal signaling while others may mimic endogenous stimulants and mediators.

**PHC 7374 Organ-Specific Toxicology (4).** Provides an advanced understanding of the responses of specific, key organ systems (e.g. immune, renal, hepatic, reproductive) to toxic insult.

**PHC 7381C Neuroscience (4).** This course will familiarize doctoral students with fundamental concepts in neuroscience with emphasis on the role of environmental factors play in the modulation of neurological processes.

**PHC 7384 Advanced Neurotoxicology (4).** This doctoral course will provide students an in-depth knowledge of how various environmental neurotoxicants may induce neurotoxicity resulting in neurodegeneration as seen in some brain diseases. Prerequisite: PHC 7381C

**PHC 7385C Emerging Issues in Neurotoxicology (2).** This course will require doctoral students to integrate media reports and scientific literature to develop socially-relevant and impactful hypotheses for research in environmental health sciences. Prerequisite: PHC 7381C, PHC 7384.

**PHC 7437C Applied Economic Evaluation for Health Systems Research (4).** This course is an advanced methods course focuses on the economic evaluation of health policies, programs, and systems. Prerequisites: PHC 6091, PHC 7095C.

**PHC 7466 Policy and Advocacy in Global Health Disparities (3)** This course focuses on the influence of policy and advocacy on health disparities in the United States, Caribbean region and globally and other structural factors impacting disparity.

**PHC 7502 Health Promotion in the Workplace (3).** This course emphasizes program design, management, and

evaluation of health promotion in corporations. Issues in health assessment, fitness, wellness, and stress will be covered. Prerequisites: PHC 6589, PHC 6410.

**PHC 7583 Policy and Practice in Health Promotion (3).** Intensive exploration of health promotion policies with critical analysis. Preparation to develop effective policies and to assess the appropriate practice of health promotion or different levels.

**PHC 7584 Advanced Research Designs (3).** This course reviews and critically evaluates multiple research methods of analysis from disciplines such as psychology and sociology as they apply to health promotion research and ethics. Prerequisites: PHC 6750 and PHC 6146 or permission of the instructor.

**PHC 7587 Theory Development in Health Promotion (3).** Discussion and critique of the structural components and research processes related to the origination and construction of health promotion theories. Prerequisites: PHC 5409 and PHC 6602.

**PHC 7588 History and Foundations of Public Health (3).** This course reviews the evolution of the public health profession and the principles and practices of health promotion. Prerequisites: advanced standing.

**PHC 7606 Tobacco Use: Causes, Consequences, and Control (3).** The course will utilize a broad approach to provide a comprehensive overview of the history, epidemiology, health effects, and policy aspects of the tobacco epidemic. Prerequisites: None for PhD students, and core courses for MPH students.

**PHC 7702 Advanced Measurement in Public Health (3).** Advanced course in measurement and evaluation in public health. Computer applications for public health practice emphasized. Prerequisites: PHC 6065, PHC 6715, PHC 6750.

**PHC 7705 Methods in Evidence Based Public Health (3).** Review of methods in evidence based public health; study designs addressing patient reported outcome measures; health status measures, area-based health intervention evaluation, quality of life and survival measures in health interventions. Prerequisite: PHC 6065.

**PHC 7711 Methodological Issues in Scientific Inquiry of Public Health Research (3).** Understanding and application of analytical methods in the philosophy of science in order to explore systematically the critical methodological issues underlying public health research. Prerequisite: Doctoral standing.

**PHC 7713 Advanced Environmental Toxicology Research Methods (2).** Students will gain an appreciation and knowledge of key methods in environmental toxicology, and how to apply these to the design, execution, and analysis of environmental health case studies. Prerequisites: PHC 6001, PHC 6065, Ph.D. standing or advanced MPH student with departmental approval.

**PHC 7716 Advanced Research Methods: Survey Research (3).** Conceptualization of survey research including how to conduct a survey and present results for professional publication. Prerequisites: PHC 6706, PHC 6065.

**PHC 7719 Multivariate Methods in Health Sciences Research (3).** Advanced statistical methods for analysis of multivariate data and related statistical inference in public health and biomedical research. Prerequisites: PHC 6052, PHC 6091, or permission of the instructor.

**PHC 7723 Survey Research in Public Health (3).** This course facilitates the systematic identification, interpretation, and understanding of survey research concepts, principles, and practices in public health. Prerequisites: PHC 6000, PHC 6065, PHC 6410, PHC 6706.

**PHC 7731C Advanced Neurotoxicology Research Methods (2).** A rigorous doctoral level course designed to familiarize students with fundamental approaches in neurotoxicology necessary for conducting cutting-edge research in environmental health sciences. Prerequisite: PHC 7381C Corequisite: PHC 7384.

**PHC 7732C Research Ethics & Scientific Integrity (1).** This course will introduce and familiarize students with basic elements of research ethics using real-life scenarios to create a foundation of responsible research conduct.

**PHC 7733 Theoretical Paradigms in Health Disparities Research (3).** This course focuses on the concept of cultural and social diversity in public health and its importance in guiding policy, programs, services, and health within a community.

**PHC 7753C Applied Econometrics for Health Systems Research (4).** This methods course focuses on using econometrics methods to identify causal relationships using cross-sectional or panel data for health systems research. Prerequisites: PHC 6091, PHC 7095C.

**PHC 7795 Advanced SAS Computing for Health Sciences (3).** Primary focus of this course is on use of advanced features of SAS software in statistical research. These include SAS IML, SAS PROC SQL, SAS SG procedures, SAS Macro and statistical simulations. Prerequisite: PHC 6080 or equivalent courses with instructor permission.

**PHC 7908C Health Systems Research Readings 1 (3).** This is the first of a two-semester course sequence for doctoral students covering the main components of health system in the U.S. and abroad, and the diverse ways in which researchers analyze them. Prerequisite: Permission of the instructor.

**PHC 7909C Health Systems Research Readings 2 (3).** This is the second of a two-semester course sequence for doctoral students covering the main components of health systems in the U.S. and abroad, and the diverse ways in which researchers analyze them. Prerequisite: Permission of the instructor.

**PHC 7917 Environmental and Occupational Health Sciences Pre Doctoral Research (1-9).** This course is designed to provide the Pre-Doctoral student with experience in the conduct of a research project with guidance from appropriate environmental and occupational health faculty.

**PHC 7932 Health Disparities Training and Development Seminar (3).** This course focuses on health disparities development and research training in the areas of HIV, substance abuse, obesity, and diabetes with a focus in the United States and the Caribbean region.

**PHC 7933 Seminar in Biostatistics (1-6).** Course emphasis on the biostatistical methods used in research. Various biostatisticians will present their current research and lead class discussions on the development of their research agenda. Prerequisites: PHC 7050, PHC 7051, PHC 7054.

**PHC 7980 Dissertation (1-12).** Research for doctoral dissertation under the supervision of a major professor and a doctoral committee. Prerequisites: Permission of instructor and doctoral candidacy.

**PHC 7981 Research Concepts and Proposal Development (3).** The purpose of this course is to present the basic general components of research, to describe methods, and to present perspectives specifically and directly applicable to the field of public health. Prerequisites: PHC 6091 or equivalent.

**PHC 7982 Public Health Pre Dissertation Research (1-6).** This course is designed to provide Doctoral students with the guidance necessary to prepare for comprehensive examination and dissertation proposal under the guidance of the dissertation chair. Prerequisites: Admission into the Ph.D. program, instructor consent, completion of coursework.

**SOW 5105 Human Behavior and the Social Environment I (3).** Study of individuals and families with emphasis on the analysis of biopsychosocio-cultural factors (including racial/ethnic and gender variables) affecting human development and social functioning through the life cycle. Prerequisites: 12 semester hours of college-level courses in the social and behavioral sciences and one college-level course in biology (including coverage of human biology).

**SOW 5109\* Crises in the Lives of Women (3).** An overview of special experiences in the lives of women which might lead women to seek professional assistance. Topics include pregnancy, domestic violence, rape, abortion, childbirth, sex discrimination, AIDS, climacteric, widowhood. Prerequisites: Senior or graduate standing.

**SOW 5116 Trauma Theory and Interventions (3).** This course will provide an overview of theories related to trauma over the lifespan and skills necessary to assess and intervene in situations involving trauma. Prerequisites: SOW 5105, Human Biology, Human Behavior, and Social Environment or similar. Corequisites: Social work major or similar field.

**SOW 5155\* Social Work Practice with Sexual Problems (3).** Skills applicable to sex-related concerns encountered in social work practice. Presents theories of the etiology of common sexual problems and explores treatment intervention modalities. Prerequisites: Graduate or senior level practice course or permission of the instructor.

**SOW 5235 Social Welfare Policy and Services I (3).** This course analyzes major social welfare policies and programs in the United States, their emergence, development, contemporary operations and how they shaped the development of the Social Work profession.

**SOW 5240\* Advanced Interventions in Child Maltreatment (3).** This course will examine best practices in the health, mental health, and socio-emotional development of children and adolescents within the child

welfare system. Prerequisites: SOW 5105 and SOW 5342 or advanced standing status.

**SOW 5241\* Advanced Child Welfare Policy and Practice (3).** This course will explore professional practice and policy issues in child welfare, with emphasis on intervention in child maltreatment. Prerequisites: SOW 5235 and SOW 5105 or advanced standing status.

**SOW 5324 Theory and Practice With Groups (3).** Study and application of biopsychosocial, cultural dimensions, theories, techniques and intervention strategies for social work group practice. Prerequisite: SOW 5342. Corequisite: SOW 5532.

**SOW 5342 Social Work Practice with Individuals and Families (3).** This course is an overview of social work practice with individuals and families placing emphasis on professional values, interviewing skills, assessment, intervention, and outcome evaluation, all within a cross-cultural perspective. Pre/Corequisite: SOW 5105. Corequisite: SOW 5379L.

**SOW 5344 Theory and Practice with Communities and Organizations (3).** Study and application of biopsychosocio-cultural dimensions, theories, techniques and intervention strategies for communities and organizations. Focuses on empowerment of populations at risk and promotion of social and economic justice.

**SOW 5354\* Crisis Intervention in Social Work Practice (3).** This course examines the etiology, structure, theory, and application of crisis intervention in social work practice. It provides assessment criteria for assignment to this form of treatment and techniques for intervention. Prerequisites: Senior or graduate level practice course, or permission of the instructor.

**SOW 5365\* Behavior Therapy in Social Work Practice (3).** Overview of the principles, clinical foundations, and applications of socio-behavioral approaches relevant to social work practice. Emphasis on behavioral change methods and problem solving in assessment, intervention, and evaluation. Prerequisite: SOW 5342 or Advanced Standing Status.

**SOW 5379L Interviewing Skills Lab (3).** Competency-based course providing graduate students with basic interviewing skills for social work practice. Emphasis is on acquisition of interviewing behavior rather than theory. Corequisite: SOW 5342.

**SOW 5404 Social Work Research Methodology (3).** This course provides information on the principles and methods of basic social work research. The ethical conduct of research is taught within the context of social work purposes and values. The formulation of problems for study that address the social needs of diverse population groups is emphasized. Prerequisite: Statistics.

**SOW 5455\* Writing and Managing Grants for Social Service Programs (3).** Prepare students to write, develop and manage grants for social services programs. Develop knowledge of grant sources, the grant making, writing and management of grant funded social welfare services. Prerequisite: SOW 5344.

**SOW 5532 Field Practicum I (3).** The first masters-level field practicum and seminars that provide students with the opportunity to apply and integrate generalist social work knowledge and skills. Prerequisites: SOW 5105,

5235, 5342, 5404, 5379L. Pre/Co-Req: SOW 5629, 5344. Corequisite: SOW 5324.

**SOW 5541\* Advanced Standing Seminar (2).** This course examines the integration of academic knowledge and social work skills that develop the profession's critical thinking foundation. Prerequisites or Corequisites: SOW 6125, SOW 5324.

**SOW 5605\* Medical Social Work (3).** Principles of medical social work practice in hospitals and communities. Focuses on the social worker as part of the health care team, with basic knowledge of medical problems of patients and their families. Prerequisites: Graduate or senior standing.

**SOW 5607\* Social Work Practice and Psychopharmacology (3).** Social work practice, research, and policy in relation to psychotropic drugs including effectiveness and limitations of main drug classes and ethical, professional, legal, scientific and cultural issues. Prerequisites: Graduate or senior standing.

**SOW 5614\* Social Work Practice with Persons Affected by Domestic Violence (3).** Course prepares students to appropriately identify, assess, and intervene with persons affected by domestic violence utilizing assessment and intervention strategies in practice. Prerequisites: Graduate or Senior standing with the permission of the instructor.

**SOW 5621\* Social Work with Refugees, Immigrants, and Migrants (3).** Provides skills and knowledge responsive to the needs of immigrants and refugees and addresses influences of cultural, ethnic, gender, age, and class differences in acculturation and service delivery. Prerequisites: Graduate or Senior standing with the permission of the instructor.

**SOW 5624\* Feminist Therapy in Social Work (3).** Reviews basic principles of feminist therapy and focuses on the application of feminist therapy in clinical social work practice. Prerequisites: Graduate standing or permission of the instructor.

**SOW 5629 Social Work Practice with Diverse Populations (3).** Prepares students for responsive practice with diverse populations, with emphasis on South Florida. Includes knowledge and skills in interviewing, assessment interventions, termination, and follow-up. Prerequisite: SOW 5342.

**SOW 5635\* School Social Work Practice (3).** Designed to assist students in developing knowledge and skills necessary for effective social work practice in school settings. Promotes understanding of social work practice to improve the functioning of children. Prerequisite: SOW 5342 or Advanced Standing Status.

**SOW 5640\* Foundations in Gerontology for Health Professions (3).** Implications for health professions of the biological, cross-cultural, physiological, psychological, social, and societal contexts of aging.

**SOW 5641\* Understanding the Process of Aging (3).** Study of the physical, psychosocial, and cultural factors affecting human development in late life, from a social work perspective. Prerequisites: Graduate or senior standing and permission of the instructor.

**SOW 5672\* Animal Assisted Treatment for Social Work (3).** An introduction to the human animal bond and

animal assisted treatment. There will be illustrations of programs using small animals, horses, and dolphins. Prerequisites: Graduate or permission of instructor.

**SOW 5710\* Current Issues in Addiction Practices (3).** An overview of chemical dependency in the social service delivery system including policy and program approaches, client assessment, treatment techniques and prevention issues. Prerequisites: Graduate or Senior standing.

**SOW 5805C\* Counseling the Elderly (3).** Applied gerontological knowledge to counseling skills required for independent as well as frail elderly clients. Course focuses on long and short term interventions in a range of practice settings. Prerequisites: Graduate or senior standing.

**SOW 5806 Disaster Behavioral Health (3).** A combination seminar and lecture course in which students will learn about the fundamentals of mental and behavioral health issues and practices in disaster response and recovery. Prerequisite: SOW 5105 or Advanced Standing Status or Permission of instructor.

**SOW 5905\* Individual Study (1-3).** Individually selected program of advanced supervised study related to specific issues in social work and social welfare. Prerequisite: Permission of the instructor.

**SOW 5921 Self-Awareness and Self-Modification for Practice (3).** An experience-oriented course directed toward helping students become aware of their own interpersonal processes and how these may influence their skill and effectiveness as helping persons.

**SOW 5932\* Seminar in Social Work (3).** An exploration of various critical issues of concern to the social work profession. Prerequisites: Graduate or senior standing.

**SOW 6114C\* Assessment and Treatment of Addiction and Related Problems (3).** Course provides increased understanding of treatment for addictive disorders including assessment, therapeutic techniques and supportive aftercare as well as community consultation and referral skills. Prerequisite: SOW 5710. Corequisite: SOW 5710

**SOW 6125 Human Behavior and the Social Environment II-Psychopathology (3).** Study of the psychosocial aspects of client problems, including psychopathology, frequently encountered by social workers in direct practice with attention to differential treatment issues. Prerequisite: SOW 5532 or advanced standing status.

**SOW 6236 Social Welfare Policy and Services II (3).** This course offers students the opportunity to gain in-depth knowledge about social welfare policy-making processes and their impact on the social service delivery system. Prerequisites: SOW 5532 and advanced standing.

**SOW 6243\* Child and Family Social Policy Issues (3).** A comprehensive overview of the range of children and family policies, programs and issues in the U.S.A. in the context of comparing residual and institutional approaches to social service delivery, and policy implications for use of each approach.

**SOW 6245\* Social Welfare Policies and Services to the Elderly (3).** The content of the course will center around the federal/state policies affecting the quality of life of the older person. Among the areas to be considered are an



overview of the situation of the aged, specific public and private social welfare policies, including the origin of policy making, and problems involved in the process of implementation of social welfare policies for the elderly.

**SOW 6281\* Legal Aspects of Social Work Practice (3).** Introduction to legal aspects of social work practice including client and agency rights, malpractice issues, legal research, and practice interaction with legal counsel, legal services, and the courts.

**SOW 6351 Clinical Intervention in Couple and Family Social Work Practice (3).** Provides students with a critical and culturally sensitive understanding and application of the major models of social work intervention with couples and families. Prerequisite: SOW 6533 and SOW 6425 Assess. And Intervention. Corequisite: SOW 6534.

**SOW 6359\* Social Work Treatment with Families of the Elderly (3).** Preventive and treatment approaches in social work practice with families of the elderly. Focus on aging family as client-system; knowledge, skills needed for a range of interventions are provided.

**SOW 6372\* Supervision, Consultation and Staff Development (3).** Key aspects of the social services supervisory situation are explored. This course emphasizes supervisory competence, issues facing supervisor and supervise. Also explores consultation and staff development.

**SOW 6386\* Social Program Planning and Development (3).** Theory and practice of social program planning and development for organizations and communities. Social services to families, children and elderly, especially service needs for which programs do not exist will receive special emphasis.

**SOW 6387\* Social Services Management Skills (3).** Learning units in which students practice and demonstrate, through simulation and participation, skills in major aspects of social services management.

**SOW 6425 Clinical Assessment and Intervention Planning (3).** Critical analysis of assessment models, the current issues, skills of assessment and intervention planning, including the evidence basis of assessment practice. Prerequisites: SOW 5324 and SOW 5532 or advanced standing. Corequisite: SOW 6533.

**SOW 6435 Evidence-Based Social Work Practice (3).** Examines the foundations, tools to find resources, design tailored interventions, implement, and evaluate evidence-based social work practice. Prerequisites: SOW 5532 or advanced standing.

**SOW 6436\* Empirically-Based Practice in Social Work (3).** Advanced utilization of intervention effectiveness research results and techniques in social work practice with individuals, families and groups. Prerequisites: SOW 6435 and an advanced practice course.

**SOW 6533 Field Practicum II (3).** The first part of two masters-level advanced field practicum courses and integrative seminars that provide students with the opportunity to apply and integrate advanced clinical knowledge and skills. Prerequisites: A BSW/BSSW degree and advanced standing status or satisfactory completion of SOW 5532, 5344, 5629, 5324. Pre/Co-Reqs: SOW 6125, 6435, 6236. Corequisite: SOW 6425.

**SOW 6534 Field Practicum III (6).** The second advanced field practicum/ integrative seminar which includes licensure prep and capstone, giving students the opportunity to apply and integrate advanced clinical knowledge and skills. Prerequisites: SOW 6533, 6435, 6125, 6236. Corequisite: SOW 6351.

**SOW 6611\* Advanced Practice with Family Systems (3).** Advanced clinical skills in working with families and couples. Focus will be given to non-traditional change strategies such as family sculpting, family reenactment, family choreography and dramatization. Extensive use of videotaped case simulations, co-therapy, live supervision and peer evaluation models. Prerequisites: SOW 6351 or permission of the instructor.

**SOW 6646\* Social Work Practice with the Elderly (3).** The knowledge and skills necessary for advanced social work practice in social agencies which deal with problems and issues of the aging population in contemporary society.

**SOW 6647\* Advocacy in Social Work Practice (3).** This course covers skills and knowledge necessary for the practice of advocacy on behalf of individuals and groups, including political, legislative, and organizational perspectives.

**SOW 6649\* Social Work Practice in Long Term Care and the Elderly (3).** This course focuses on direct practice with the frail elderly and their families within the rapidly changing system of community and institutional long term care.

**SOW 6655\* Clinical Intervention in Child and Adolescent Social Work Practice (3).** This course will provide students with the opportunity to select, apply and evaluate appropriate intervention strategies in working with children and adolescents. Specific attention to socio-cultural, gender and racial differences in understanding development issues and in critically assessing the applicability of practice theories. Prerequisites: SOW 5324, SOW 5532, or advanced standing program.

**SOW 6656\* Decision-Making in Child Placement (3).** This course will stress decision-making and interventions when substitute care is considered or carried out. Termination of parental rights and the choice and timing of placements of children will be considered.

**SOW 6711\* Prevention of Addiction and Related Problems (3).** Course provides increased understanding of substance abuse prevention including history and effective approaches as well as skills to reinforce healthy lifestyles and identify early potential problems. Prerequisite: SOW 5710. Corequisite: SOW 5710

**SOW 6914\* Independent Research (1-6).** Individually selected program of supervised data collection and analysis on specific topics in social work and social welfare. Prerequisites: SOW 5404 and permission of the instructor.

**SOW 7216 Social Welfare Policy (3).** Using a systemic approach and focusing on high-risk populations, this course analyzes the social welfare policy-making process and its impact on public and private social service delivery systems. Prerequisites: Admission to Ph.D. program or permission of the instructor.

**SOW 7237 Micro-Practice Theory and Research (3).** Analysis of research priorities in the development of effective interventions in the social welfare field. Prerequisites: Admission to Ph.D. program or permission of the instructor.

**SOW 7238 Macro-Practice Theory and Research (3).** This course focuses on intervention theory research and methods at the community, organizational and societal level. Prerequisites: Admission to Ph.D. program or permission of the instructor.

**SOW 7406 History and Systems of Social Work Research (3).** Development, dissemination, and utilization of Social Work Research; the social work research tradition; types of research questions in Social Welfare; past and current contextual influences on social work research.

**SOW 7492 Theory Development and Research Methods in Social Welfare (3).** The logic of social research, role of theory in social welfare research, range and limitations of research methods, ethical issues. Students begin work on their doctoral research proposal. Prerequisites or Corequisites: STA 6166 or equivalent. Prerequisites: Admission to Ph.D. program or permission of the instructor.

**SOW 7493 Research Methods in Social Welfare II (3).** This second course in a two-semester sequence focuses primarily on design, measurement, and analysis issues in ethno-graphic field studies, surveys and group experiments for the evaluation of intervention technology in social welfare. Prerequisites: SOW 7492 and STA 6166, or equivalent.

**SOW 7916 Supervised Research (3).** Directed experience in the conduct of research in social welfare and social work under the guidance of a faculty member. Must be taken twice for a total of six credits. Prerequisite: Completion of first year.

**SOW 7932 Interdisciplinary Seminar on Social Welfare Within an Urban Milieu (3).** Academics from social work and allied disciplines and professions will discuss their theoretical interests and research activities. Prerequisite: Successful completion of first year of Doctoral program.

**SOW 7936 Dissertation Seminar in Social Welfare (3).** This course focuses on helping students with the development of the dissertation prospectus. Emphasis is placed on development of an acceptable research protocol in the students' specialization area. Prerequisites: SOW 7215, SOW 7237, SOW 7238, SOW 7492, and SOW 7493.

**SOW 7980 Ph.D. Dissertation (1-12).** This course provides dissertation guidance to doctoral candidates in the Ph.D. program in Social Welfare. Prerequisites: Permission of Major Professor and Doctoral Candidacy.

**SYG 6932 Special Topics in Disaster Studies (3).** Case studies of major disasters used to explore topics such as impact of gender, class, ethnicity, and age on vulnerability, response, and outcome; effects of larger political and economic systems; and relationship to social change. May be repeated with change of topic.

\*Social Work Electives

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