

2016-2017 Curriculum Guide for Master of Science degree program with a specialization in BIOMEDICAL INFORMATICS

The Master of Science (MS) degree is intended for students whose interests in biomedical informatics are academically oriented rather than directed toward professional practice. MS graduates will have the knowledge and skills to participate in basic and applied research and will have the foundation to enter into a research-oriented career. It is also a natural entry point for students who are interested in pursuing a PhD degree. Because of this orientation, the emphasis in the MS degree program is on building a strong foundation in a particular specialty field, along with the research methods important in that field. To reflect this research and academic orientation, the MS degree ordinarily requires the preparation of a thesis, though it is available under a non-thesis option at the discretion of the division or specialization.

Students admitted to the MS degree program are assigned a faculty advisor who will provide guidance throughout the program. This document serves as a resource to be used by the student and the advisor in planning a program with a specialization in Biomedical Informatics, but is not inclusive of all important degree, college, and university requirements. All students are expected to be familiar with the College of Public Health (CPH) *Graduate Student Handbook* (available at <http://cph.osu.edu/students/graduate/handbooks>) and with the *Graduate School Handbook* (available at <http://www.gradsch.ohio-state.edu/>).

PROGRAM OF STUDY

The MS-BMI curriculum consists of a minimum of 48 credits organized into three curricular domains:

1. Courses required for a specialization in Biomedical Informatics (30 credits)
2. Elective courses (12 credits)
3. Thesis (6 credits)

Required Courses in the Specialization (30 credits)

PUBHBIO 6210	Design & Analysis of Studies in the Health Sciences I	3 credits
PUBHBIO 6211	Design & Analysis of Studies in the Health Sciences II	3 credits
PUBHBIO 6212	Regression Methods for the Health Sciences	3 credits
PUBHEPI 6430	Epidemiology I & Lab	4 credits
PUBHEPI 7410	Epidemiology II & Lab	4 credits
BMI 5710	Introduction to Biomedical Informatics	3 credits
BMI 5740	Introduction to Research Informatics	3 credits
BMI 7891	Seminars in Biomedical Informatics	2 credits
BMI 7840	Advanced Topics in Biomedical Data Management	3 credits
Varies	Ethics course for Biomedical Research	2 credits

Recommended Electives** (12 credits)

BMI 5720	Introduction to Imaging Informatics	3 credits	PUBHBIO 7225	Survey Sampling Methods	3 credits
BMI 5730	Introduction to Bioinformatics	3 credits	PUBHBIO 7235	Applied Survival Analysis	3 credits
BMI 5750	Methods in Biomedical Informatics	3 credits	PUBHEPI 7430	Epidemiology III	3 credits
BMI 5760	Public Health Informatics	3 credits	PUBHEPI 6412	Prin Clinical & Translational Sci (CTS)	3 credits
BMI 7810	Adv. Topics in Clinical Informatics	3 credits	PUBHEPI 6413	Conduct & Comm Research in CTS	2 credits
BMI 7820	Biological & Medical Image Analysis	3 credits	PUBHEPI 6401	Health Data Sources and Uses	3 credits
BMI 7830	Systems Biology	3 credits	PUBHEPI 6414	Sci Writing Biomed & Clin Science	1 credit

PUBHHMP 6611	Intro Health Care Organization	3 credits	CSE 5231	Software Engineering Techniques	2 credits
PUBHHBP 7534	Research Methods in HBHP	3 credits	CSE 5232	Software Requirements Analysis	2 credits
PUBHHMP 7682	Info Sys Health Service Org	3 credits	CSE 5241	Introduction to Database Systems	2 credits
PUBHEPI 6431	Design & Implement Health Surveys	3 credits	CSE 5243	Introduction to Data Mining	3 credits
PUBHHMP 7605	Intro to Health Policy	3 credits	CSE 5521	Survey of Artificial Intel I: Basic Tech	2 credits
PUBHHMP 7678	Intro Health Services Research	3 credits	CSE 5522	Survey of Artificial Intel II: Adv Tech	3 credits
PUBHBIO 6270	Intro SAS for Public Health Students	2 credits	CSE 5531	Introduction to Cognitive Science	3 credits
PUBHBIO 7220	Applied Logistic Regression	3 credits			

**Students with a background in public health or medicine are encouraged to focus on computer science (CSE) electives to enhance their computational abilities. Similarly, students with backgrounds in computer science, electrical engineering, or information technology are encouraged to focus their electives to enhance their understanding of medicine and public health. Students should work with staff and faculty academic advisors in the Department of Biomedical Informatics to identify suitable electives.

Thesis

BMI 7999 Research in Biomedical Informatics 6 credits

Sample 2-year Curriculum Plan for the Master of Science in Biomedical Informatics¹

Year 1 Autumn	PUBHBIO 6210 PUBHEPI 6430 BMI 5710 BMI 7891	Design & Analysis of Studies in the Health Sciences I Epidemiology I & Lab Introduction to Biomedical Informatics Seminar in Biomedical Informatics	3 credits 4 credits 3 credits 0-1 credit	AU, SP* AU AU AU, SP
Year 1 Spring	PUBHBIO 6211 PUBHEPI 7410 BMI 5740 ELECTIVE BMI 7891	Design & Analysis of Studies in the Health Sciences II Epidemiology II & Lab Introduction to Research Informatics Seminar in Biomedical Informatics	3 credits 4 credits 3 credits 3 credits 0-1 credit	SP SP SP ANY AU, SP
Year 1 Summer	ELECTIVE ELECTIVE		3 credits 3 credits	
Year 2 Autumn	PUBHBIO 6212 BMI 7840 BMI 7999 BMI 7891	Regression Methods for the Health Sciences Advanced Topics in Biomedical Data Management Research in Biomedical Informatics (Thesis) Seminar in Biomedical Informatics	3 credits 3 credits 6 credits 0-1 credit	SU, AU AU AU AU, SP
Year 2 Spring	ETHICS COURSE ELECTIVE BMI 7891	Seminar in Biomedical Informatics	2 credits 3 credits 0-1 credit	AU, SP AU, SP AU, SP

*SP offerings is only offered as a web-based course

Grade Policy:

In addition to the general Graduate School requirements of a cumulative grade point average of 3.0 or higher, students must meet specific college policies regarding grades in Core and specialization courses. Students should familiarize themselves with Section 11 of the College of Public Health Graduate Student Handbook.

Office of Academic Programs and Student Services (OAPSS)

OAPSS staff are available to provide assistance with College, Graduate School and University policies and procedures.
PH: (614) 292-8350. OAPSS Address: 100 Cunz Hall/1841 Neil Ave/Columbus, Ohio/ 43210/cph.osu.edu

¹ A sample 3 year program is available by request from the Department of Biomedical Informatics. Please contact bmi.education@osumc.edu