THE OHIO STATE UNIVERSITY
COLLEGE OF PUBLIC HEALTH

THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE

2026-2027 Curriculum Guide for the online Master of Science degree program with a specialization in BIOMEDICAL INFORMATICS

The Online Master of Science (MS) degree is intended for students whose interests in Biomedical Informatics (BMI) are academically oriented rather than directed toward professional practice. The MS degree is a natural entry point for students who are qualified to pursue a PhD degree which requires broader scope and depth of content via additional didactic courses and more intensive research emphasis. To reflect this research and academic orientation, the MS degree requires preparation and defense of a hypothesis-based thesis. The MS degree typically can be completed within two years.

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: https://cph.osu.edu/students/graduate/student-handbook, the Graduate School Handbook: https://gradsch.osu.edu/graduate-school-handbook-gsh and the CPH competencies: https://go.osu.edu/cphcompetencies.

PROGRAM OF STUDY

The MS-BMI curriculum requires 47 credit hours.

Required Foundation Courses (9 credit hours)

PUBHLTH 6010	Essentials of Public Health	3 credit hours
PUBHBIO 6210	Applied Biostatistics I	3 credit hours
PUBHEPI 6410	Principles of Epidemiology	3 credit hours

Required Specialization Courses (23 credit hours)

PUBHBIO 6211	Applied Biostatistics II	3 credit hours
PUBHBIO 6000+	Advanced Coursework in Biostatistics	3 credit hours
BMI 5710	Introduction to Biomedical Informatics	3 credit hours
BMI 5760	Public Health Informatics	3 credit hours
BMI 7810	Research Design & Grant Preparation in Biomedical Informatics	3 credit hours
BMI 7891	Seminars in Biomedical Informatics (must take this 1 credit course **twice**)	2 credit hours
BMI 5000+	Advanced Coursework in Biomedical Informatics	3 credit hours

Ethics course requirement - select one course:

BIOETHIC 6010	Biomedical Research Ethics	3 credit hours
NURSING 7781	Responsible Conduct of Research	3 credit hours

Recommended Electives** (9 credit hours)

BMI 5551	Survey of AI/ML in Digital Health	3	BMI 5750	Methods in BMI	3
BMI 5552	AI in Medical Imaging	3	BMI 5770	Health Analytics: Data to Discovery to Dissemination	3
BMI 5553	Predictive Analytics in Electronic Health Records	3	BMI 5780	Programming for BMI	3
BMI 5554	Natural Language Processing in Biomedical Research	3	BMI 7040	Clinical Informatics	3
BMI 5556	Human-Centered Design of AI in Healthcare	3	PUBHEPI 6412	Principles Clinical & Transl. Science	2
BMI 5557	Multimodal AI in Healthcare	3	PUBHEPI 6413	Conduct & Comm Research in CTS	2
BMI 5558	R-based Computational Apps for BMI	3	BMI 8130	Analysis and Applications of Genome Scale Data	3

BMI 5730	Introduction to Bioinformatics	3	BMI 8140	Measuring Patient Experiences and Preferences	3
BMI 5740	Introduction to Research Informatics	3	BMI 8150	Rigorous and Reproducible Design and Data Analysis	3
BMI 5750	Methods in BI and Data Science	3	PUBHEPI 6431	Design & Implement Health Surveys	3
BMI 5770	Health Analytics	3	PUBHBIO 6250	Regression Methods for the Health Sciences	3
BMI 5780	Programming for BMI	3	PUBHBIO 6270	Intro to SAS for Pub Hlth Students	2
BMI 7040	Clinical Informatics	3	PUBHHMP 7678	Approaches to Health Services Research	3
BMI 7050	Meta-Analysis in Health Science Research	3	PUBHHMP 7682	Info Sys for Health Service Org	1.5
BMI 7235	Machine Learning for Bioinformatics	3	PUBHEHS 6310	Principles of Envi Health Science	3
BMI 7250	Design and Analysis of Pragmatic Trials	3	CSE 5231	Software Engineering Techniques	2
BMI 7770	Health Analytics	3	CSE 5241	Introduction to Database Systems	2
BMI 8030.01	Special Topics in BMI: Computational Biology and Bioinformatics	3	CSE 5521	Survey of Artificial Intel I: Basic Tech	2
BMI 8040.01	Special Topics in BMI: Clinical and Translational Informatics	3	CSE 5522	Survey of Artificial Intel II: Adv Tech	3
BMI 8050.01	Special Topics in BMI: Data Science	3			

** Students should work with staff and faculty academic advisors in the Department of Biomedical Informatics to identify suitable electives. Not all courses listed are offered distance learning.

Thesis (6 credit hours)

BMI 7999 Research in Biomedical Informatics 6 credit hours

Sample 2-year Curriculum Plan for the Master of Science in Biomedical Informatics [1]

TERM	COURSE	COURSE TITLE	CREDIT HOURS	TERM(S) OFFERED
Year 1 Autumn	PUBHBIO 6210	Applied Biostatistics I	3	AU, SP, SU
	PUBHEPI 6410	Principles of Epidemiology	3	AU, SP
	BMI 5710	Introduction to Biomedical Informatics	3	AU
	ELECTIVE		3	
Year 1 Spring	PUBHBIO 6211	Applied Biostatistics II	3	AU, SP, SU
	BMI 7810	Research Design and Methodological Approaches in Biomedical Informatics	3	SP
	ELECTIVE		3	
	PUBHLTH 6010	Essentials of Public Health	3	AU, SP
	BMI 7891	Seminar in Biomedical Informatics	1	AU, SP
Year 1 Summer	ELECTIVE		2-3	
Year 2 Autumn	PUBHBIO 6000+		3	AU, SP
	BMI 5760	Public Health Informatics	3	AU
	BMI 7999	Research in Biomedical Informatics (Thesis)	6	
	BMI 7891	Seminar in Biomedical Informatics	1	AU, SP
Year 2 Spring	BMI 5000+	Advanced Biomedical Informatics Coursework	3	AU, SP
	ETHICS COURSE		3	AU, SP

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 Foundation and specialization courses. Students should familiarize themselves with Section 12 of the College of Public Health Graduate Student Handbook.

College of Public Health - Office of Academic Programs and Student Services (OAPSS)

OAPSS staff are available to assist with College, Graduate School and University policies and procedures.
(614) 292-8350 100 Cunz Hall 1841 Neil Ave Columbus, Ohio 43210 cph.osu.edu. Questions regarding the student's program of study should be directed to their advisor.

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