# 2022-2023 Curriculum Guide for Master of Public Health degree program with a specialization in Biomedical Informatics

The Master of Public Health (MPH) degree is intended for students whose interests in Biomedical Informatics (BMI) are oriented towards professional practice within the public health and/or healthcare domains.

Students admitted to the Master of Public Health (MPH) 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*: http://cph.osu.edu/students/graduate/handbooks the *Graduate School Handbook:* http://www.gradsch.ohio-state.edu/ and the CPH competencies: https://go.osu.edu/competencies.

## PROGRAM OF STUDY

The MPH-BMI curriculum consists of a minimum of 45 credits organized into five curricular domains:

1. MPH Integrated Foundational curriculum (12 credits)
2. Specialization courses (19-20 credits)
3. Elective courses (8-9 credits)
4. Applied Practice Experience (2 credits)
5. Integrative Learning Experience (3 credits)

### MPH Integrated Foundational curriculum⸸ (12 credits)

Every student in the MPH-BMI program must take the following MPH Integrated Foundational curriculum:

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| PUBHTLH 6001 | Methods in Quantitative Data Analysis | 4 credits |
| PUBHLTH 6002 | History, Values and Essential Services of the U.S. Public Health System | 2 credits |
| PUBHLTH 6003 | Methods in Public Health Planning and Evaluation | 2 credits |
| PUBHLTH 6004 | Essentials of Population Health | 4 credits |

### Required Specialization courses (19-20 credits)

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| PUBHBIO 6211 | Applied Biostatistics II | 3 credits |
| BMI 5710 | Introduction to Biomedical Informatics | 3 credits |
| BMI 5740 | Introduction to Research Informatics | 3 credits |
| BMI/PUBHLTH 5760 | Public Health Informatics | 3 credits |
| BMI 7000+ | Advanced Coursework in Biomedical Informatics | 3 credits |
| BMI 7891 | Seminars in Biomedical Informatics | 2 credits |

#### Ethics course requirement - Select one course:

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| BIOETHIC 6010 | Biomedical Research Ethics | 3 credits |
| BIOPHARM 7510 | Professional and Ethical Issues in Biomedical Sciences | 2 credits |
| NURSING 7781 | Responsible Conduct of Research | 3 credits |
| SURGERY 8814 | Responsible Conduct of Research: Human Participants and the Use of Animals in Biomedical Research | 2 credits |

**Recommended Electives\*\* (8-9 Credits)**

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| BMI 5730 | Introduction to Bioinformatics | 3 credits | BMI 8040.01 | Special Topics in BMI: Clin. & Transl. Informatics | Varies |
| BMI 5750 | Methods in Biomedical Informatics | 3 credits | BMI 8050 | Special Topics in BMI: Data Sci | Varies |
| BMI 5770 | Health Analytics: Data to Discovery to Dissemination | 3 credits | BMI 8130 | Analysis and Applications of Genome-Scale Data | 3 credits |
| BMI 7040 | Clinical Informatics | 3 credits | BMI 8150 | Rigorous and Reproducible Design & Data Analysis | 3 credits |
| BMI 7810 | Design and Methodological Approaches in BMI | 3 credits | PUBHBIO 6250 | Regression Methods for the Health Sciences | 3 credits |
| BMI 7830 | Systems Biology | 3 credits | PUBHBIO 6270 | Intro to SAS for Pub Hlth Students | 2 credits |
| BMI 8030 | Special Topics in Comp. Biol | Varies | PUBHHMP 7678 | Approaches to Health Services Research | 3 credits |
| BMI 8140 | Measuring patient experiences and preferences | 3 credits | PUBHHMP 7682 | Info Sys for Health Service Org | 3 credits |
| PUBHEPI 6412 | Basic Prin Clinical & Transl. Science | 2 credits | CSE 5231 | Software Engineering Techniques | 2 credits |
| PUBHEPI 6413 | Conduct & Comm Research in CTS | 2 credits | CSE 5241 | Introduction to Database Systems | 2 credits |
| PUBHEPI 6431 | Design & Implement Health Surveys | 3 credits | CSE 5521 | Survey of Artificial Intel I: Basic Tech | 2 credits |
| CSE 5522 | Survey of Artificial Intel II: Adv Tech | 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 advisors in the Department of Biomedical Informatics to identify suitable electives.*

**Applied Practice Experience** (2 credits)

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| PUBHLTH 7189 | Applied Practice Experience in Public Health | 2 credits |

**Integrative Learning Experience** (3 credits)

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| PUBHLTH 7998 | Integrative Learning Experience in Public Health | 3 credits |

### *Sample Curriculum Plan for the Master of Public Health in Biomedical Informatics*

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| **Year 1 Autumn** | PUBHLTH 6001ǂ | Methods in Quantitative Data Analysis | 4 credits | AU |
| | PUBHLTH 6002ǂ | History, Values and Essential Services of the U.S. Public Health System | 2 credits | AU |
| | BMI 5710 | Introduction to Biomedical Informatics | 3 credits | AU, SP |
| | BMI 7891 | Seminar in Biomedical Informatics | 0-1 credit | AU, SP |
| **Year 1 Spring** | PUBHLTH 6003ǂ | Methods in Public Health Planning and Evaluation | 2 credits | SP |
| | PUBHLTH 6004ǂ | Essentials of Population Health | 4 credits | SP |
| | PUBHBIO 6211 | Applied Biostatistic II | 3 credits | AU, SP |
| | BMI 5740 | Introduction to Research Informatics | 3 credits | SP |
| | BMI 7891 | Seminar in Biomedical Informatics | 0-1  credit | AU, SP |
| **Year 1 Summer** | PUBHLTH 7189 | Applied Practice Experience | 2 credits | ANY |
| | ELECTIVE | Recommend: BMI 5750 Methods in Biomedical Informatics | 3 credits | ANY |
| **Year 2 Autumn** | BMI/PUBHLTH 5760 | Public Health Informatics | 3 credits | AU |
| | BMI 7000+ | Advanced Biomedical Informatics Coursework | 3 credits | AU |
| | ELECTIVE | | 3-4 credits | ANY |
| | BMI 7891 | Seminar in Biomedical Informatics | 0-1 credit | ANY |
| | ETHICS COURSE | | 2-3 credits | ANY |
| **Year 2 Spring** | PUBHLTH 7998 | Integrative Learning Experience in Public Health | 3 credits | ANY |
| | ELECTIVE | | 3-4 credits | ANY |
| | BMI 7891 | Seminar in Biomedical Informatics | 0-1 credit | ANY |

*ǂPUBHLTH 6001-6004: Students will be enrolled by The College of Public Health Office of Academic Programs and Student Services for these courses.*

**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 11 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 provide assistance with College, Graduate School and University policies and procedures.
(614) 292-8350/100 Cunz Hall/1841 Neil Ave/Columbus, Ohio/ 43210/cph.osu.edu