2020-2021 Bioinformatics and Computational Biomedicine Schedule of Classes

PhD Degree

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| **Year 1 Summer Term** | **Year 1 Fall Term** | **Year 1 Winter Term** | **Year 1 Spring Term** |
| BMI 601 Research Rotation (variable credits) | BMI 665 Bioinformatics Programming & Scripting (3) | BMI 635 Management and Processing of Large Scale Data (3). Prereqs BMI 650, BMI 656, familiarity with Linux. | BMI 652B Research in Bioinformatics (1) |
|  | BMI 650 Algorithms (4) | BMI 651 Statistical Methods (4) | BMI 643 Machine Learning (3). Instructor’s signature required. Prereqs: BMI 631, multivariate calculus, linear algebra |
|  | BMI 631 Probability and Statistical Inference (3). Need R, linear algebra and calculus. (Prereq for BMI 643) | BMI 652A Research in Bioinformatics (1) | BMI 653 Readings in Bioinformatics (1) |
|  | BMI 605F Reading & Conference (1) | BMI 605F Reading & Conference (1) | BMI 605F Reading & Conference (1) |
|  | BMI 601 Research Rotation (1) |  | Elective or Advanced Research Methods or Cognate (3) |
|  | HIP 516 Protection of Human Subjects (1) |  |  |

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| **Year 2 Summer Term** | **Year 2 Fall Term** | **Year 2 Winter Term** | **Year 2 Spring Term** |
| BMI 669 Data Analytics (3) | BMI 630 Practice of Healthcare (3) | Biomedical Science Individual Competency\* (varies) | BMI 676 Managing Ethics in Biomedical Informatics (3) |
|  | BMI 605F Reading & Conference (1) | BMI 605F Reading & Conference (1) | BMI 605F Reading & Conference (1) |
|  | BMI 659 Computational Genetics (3) **OR** BMI 612 Clinical Information Systems (3) **OR** NEUS 624 Cellular Neurophysiology |  | BMI 646 Software Engineering (3) |
| Advanced Research Methods (3; need 12 credits total before taking qualifying exam. See advisor) | Advanced Research Methods (3) | Advanced Research Methods (3) | Advanced Research Methods (3) |
| Cognate (3; need 12 credits total before taking qualifying exam. See advisor) | Cognate (3) | Cognate (3) | Cognate (3) |

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| **Year 3 Summer Term** | **Year 3 Fall Term** | **Year 3 Winter Term** | **Year 3 Spring Term** |
| Comprehensive/ qualifying exam | BMI 657 Symposium (3) | BMI 601 Research | Pre-defense and proposal defense |
|  | BMI 601 Research | BMI 605F Reading & Conference (1) | BMI 601 Research |
|  | BMI 605F Reading & Conference (1) | Elective\*\* | BMI 605F Reading & Conference (1) |
|  | BMI 670 Scientific  Writing & Communication (3) |  | Elective\*\* |

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| **Year 4 Summer Term** | **Year 4 Fall Term** | **Year 4 Winter Term** | **Year 4 Spring Term** |
| BMI 654 Mentored Teaching Prep (1) | BMI 655 Mentored Teaching (3) | BMI 655 Mentored Teaching (3) | Pre-defense |
| BMI 601 Research | BMI 654 Mentored Teaching Prep (1) | BMI 601 Research | BMI 603 Dissertation defense (1) |
|  | BMI 601 Research | Elective | Final write-up |
|  | BMI 605F Reading & Conference (1) |  |  |

\*Individual Competency courses—choose **one (**1) of the following in the BIOMEDICAL SCIENCE domain: CONJ 661, 663, 664, 665, MGEN 622 Eukaryotic Genetics, MGEN 623 Mechanisms of Disease or MGEN 624 Gene and Cell Therapy.

\*\* Number of electives needed varies. Take electives as needed to finish the program with a total of 137 credits, the number required to graduate. You may not need the number of Electives that is shown in your official progress report in Degree Audit.

Possible electives:

See BEHN website for current course offerings: <http://www.ohsu.edu/xd/education/schools/school-of-medicine/departments/basic-science-departments/behn/program/courses.cfm>

BEHN 516/616 Neurobiology of Learning and Memory Fall term, alternate years beginning 2010-11

BEHN 517/617 Neurochemical Substrates of Addiction Spring term, alternate years beginning 2011-12

BEHN 518/618 Behavioral Neuroscience Fall term, alternate years beginning 2010-11

BEHN 519/619 Molecular Strategies in Behavioral Research Spring term, alternate years beginning 2010-11

BEHN 525/625 Behavioral Genetics Spring term, alternate years beginning 2009-10

BEHN 526/626 Behavioral Psychopharmacology Winter term, alternate years beginning 2010-11

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| BME 565 Intro to Computational Neurophysiology (3) Spring term. Check BME website for availability. |
| BMI 514/614 Information Retrieval. Odd springs only  BMI 516/616 Standards for Interoperability (3) Summer hybrid even years only |
| BMI 548/648 Human Computer Interaction in Biomedicine (3) Summer hybrid |
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| Please see the PSU CS website for complete course information at: <http://www.cs.pdx.edu/> |
| SySc 551 Discrete Multivariate Modeling  OHSU CSLU (Center for Spoken Language Understanding) courses (schedule of classes TBD). Please see the OHSU CSLU website for complete course information. <http://www.ohsu.edu/xd/education/schools/school-of-medicine/departments/basic-science-departments/csee/classes/index.cfm>  CS/EE 506/606 Special Topics: Problem Solving on Large Scale Clusters  CS/EE 506/606 Special Topics: Research Programming  CS/EE 506/606 Special Topics: Speech Signal Processing  CS/EE 533/633 Automata and Formal Languages (Summer) |
| CS/EE 547/647 Statistical Pattern Recognition (3)  CS/EE 555/655 Analyzing Sequences |
| CS/EE 560/660 Artificial Intelligence (3) |
| CS/EE 562/662 Natural Language Processing (3)  EE 584/684 Introduction to Image Processing (3) |