

QBio Ph.D. Minor Approval Form

Student Name: _____ Campus ID #: _____

Current Ph.D. Graduate Program: _____

The minor program for Quantitative Biology should be designed to represent an interdisciplinary body of work and requires the following for completion:

- Ten (10) credits minimum from the course list attached to this document. At least three (3) of these credits must be beyond the required courses in the primary doctoral program. Elective courses may be used to satisfy the minor requirement. These minimum ten credits should span four (4) courses from four (4) distinct categories:
 - One (1) Research Seminar (BME 780 is the only available course and is thus required)
 - One (1) Quantitative Course
 - One (1) Integrated Course
 - One (1) Biological Course
- Student completion and submission of this form for approval to their advisor and to the QBio minor's faculty advisor (*no later than halfway through the minor course sequence and before requesting the Preliminary Exam Warrant*).

Questions regarding the minor that are not addressed on the [QBio website](#) or in the [Graduate School's Guide](#) should be directed to the minor's faculty directors, Dr. Sushmita Roy (sroy8@wisc.edu) or Dr. Anthony Gitter (gitter@biostat.wisc.edu).

	Instructor	Dept. & Course #: Course Title	Grade	# of Credits	Semester Taken (e.g., Spring 2018)
Research Seminar		BME 780: Methods in Quantitative Biology		1	
Quantitative Course					
Integrated Course					
Biological Course					

For Departmental Use:

I approve the above courses for use in satisfying the requirements for a doctoral minor in Quantitative Biology:

Advisor Name: _____ Advisor Signature: _____ Date: _____

QBio Minor Faculty Director Signature: _____ Date: _____

QBio Ph.D. Minor Course List

Research Seminar (Required)

- BME 780 - *Methods in Quantitative Biology*

Quantitative Courses (Choose One)

- CBE 660 - *Intermediate Problems in Chemical Engineering*
- COMP SCI 524 - *Introduction to Optimization*
- COMP SCI 760 - *Machine Learning*
- MATH 443 - *Applied Linear Algebra*
- MATH / COMP SCI 513 - *Numerical Linear Algebra*
- MATH / COMP SCI 514 - *Numerical Analysis*
- MATH 519 - *Ordinary Differential Equations*
- MATH 531 - *Probability Theory*
- MATH 605 - *Stochastic Methods for Biology*
- MATH 608 - *Mathematical Methods for Continuum Modeling in Biology*
- MATH 619 - *Analysis of Partial Differential Equations*
- MATH / COMP SCI 714 - *Methods of Computational Mathematics I*
- STAT / MATH 431 - *Introduction to the Theory of Probability*
- STAT / B M I 541 - *Introduction to Biostatistics*
- STAT / F&W ECOL / HORT 571 - *Statistical Methods for Bioscience I*
- STAT / F&W ECOL / HORT 572 - *Statistical Methods for Bioscience II*
- STAT 609 - *Mathematical Statistics 1*
- STAT 610 - *Introduction to Statistical Inference*
- STAT / ISYE / MATH / OTM 632 - *Introduction to Stochastic Processes*
- STAT / MATH 709 - *Mathematical Statistics*
- STAT / MATH 710 - *Mathematical Statistics*

Integrated Courses (Choose One)

- BIOCHEM 570 - *Computational Modeling of Biological Systems*
- BME 556 - *Systems Biology: Mammalian Signaling Networks*
- BME / CBE 782 - *Modeling Biological Systems*
- BME / CBE 783 - *Design of Biological Molecules*
- BMI / BIOCHEM / BMOLCHEM / MATH 606 - *Mathematical Methods for Structural Biology*
- BMI / BIOCHEM / BMOLCHEM / MATH 609 - *Mathematical Methods for Systems Biology*
- BMI / COMP SCI 576 - *Introduction to Bioinformatics*
- BMI / COMP SCI 776 - *Advanced Bioinformatics*
- BMI / STAT 877 - *Statistical Methods for Molecular Biology*
- GENETICS 885 - *Advanced Genomic and Proteomic Analysis*
- MICROBIO 657 - *Bioinformatics for Microbiologists*
- ONC 675 - *Bioinformatics for Biologists*

Biological Courses (Choose One)

- BIOCHEM 501 - *Introduction to Biochemistry*
- BIOCHEM 601 - *Protein and Enzyme Structure and Function*
- BIOCHEM / GENETICS / MICROBIO 612 - *Prokaryotic Molecular Biology*
- BIOCHEM / GENETICS / MD GENET 620 - *Eukaryotic Molecular Biology*
- BIOCHEM / BOTANY 621 - *Plant Biochemistry*
- BIOCHEM 625 - *Coenzymes and Cofactors in Enzymology*
- BIOCHEM / PHMCOL-M / ZOOLOGY 630 - *Cellular Signal Transduction*
- BIOCHEM 660 - *Methods in Biochemistry*
- BIOCHEM / CHEM 704 - *Chemical Biology*
- BIOCHEM / MICROBIO 726 - *Regulation of Expression in Prokaryotes*
- GENETICS 466 - *Principles of Genetics*
- GENETICS / MICROBIO 607 - *Advanced Microbial Genetics*
- GENETICS / BOTANY / MM & I / MICROBIO / PL PATH 655 - *Biology and Genetics of Fungi*
- GENETICS 701 - *Advanced Genetics*
- MICROBIO 625 - *Advanced Microbial Physiology*
- MICROBIO / BMOLCHEM 668 - *Microbiology at Atomic Resolution*
- ONC 703 - *Carcinogenesis and Tumor Cell Biology*
- PATH 750 - *Cellular and Molecular Biology/Pathology*
- ZOOLOGY 570 - *Cell Biology*