

PH.D. IN BIOMEDICAL SCIENCES

The Ph.D. in Biomedical Sciences is research-based and typically takes five to six years to complete, culminating in writing and defending a dissertation. This option is more comprehensive in scope than the research-based master's degree and is designed for motivated students who have the ability to develop critical thinking skills and conduct original research in one of the three primary areas of study in the Department of Biomedical Sciences: cardiovascular physiology, reproductive physiology, and neurobiology.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>). Visit the Department of Biomedical Sciences (<https://vetmedbiosci.colostate.edu/degree-programs/graduate/phd-biomedical-sciences/>) for more information.

Requirements Effective Fall 2021

| Code | Title | Credits |
|--|--|---------|
| Core Courses | | |
| GRAD 544 | Ethical Conduct of Research | 1 |
| Select one group from the following: | | 4-8 |
| Group A: | | |
| BC 563 & BC 565 | Molecular Genetics and Molecular Regulation of Cell Function | |
| Group B: | | |
| BC 563 or BC 565 | Molecular Genetics Molecular Regulation of Cell Function | |
| Select one group from the following: | | 4-8 |
| Group A: | | |
| BMS 500 & BMS 501 | Mammalian Physiology I and Mammalian Physiology II | |
| Group B: | | |
| BMS 500 or BMS 501 | Mammalian Physiology I Mammalian Physiology II | |
| BMS 784 | Supervised College Teaching | Var. |
| Select one group from the following: | | 4-8 |
| Group A: | | |
| BMS 792A or BMS 792B or BMS 792C | Seminar: Biomedical Sciences Seminar: Neurophysiology Seminar: Reproductive Physiology | |
| BMS 796A/ NB 796C or BMS 796B or BMS 796C | Group Study: Topics in Neuroscience Group Study: Cardiopulmonary Physiology Group Study: Reproductive Physiology | |
| Group B: | | |
| BMS 792A or BMS 792B or BMS 792C | Seminar: Biomedical Sciences Seminar: Neurophysiology Seminar: Reproductive Physiology | |
| or | | |

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|--|--|-------------|
| BMS 796A/ NB 796C or BMS 796B or BMS 796C | Group Study: Topics in Neuroscience Group Study: Cardiopulmonary Physiology Group Study: Reproductive Physiology | |
| Selected Courses ¹ | | Var. |
| BMS 503/NB 503 | Developmental Neurobiology | |
| BMS 505/NB 505 | Neuronal Circuits, Systems and Behavior | |
| BMS 545 | Neuroanatomy | |
| BMS 631 | Mechanisms of Hormone Action | |
| BMS 632 | Metabolic Endocrinology | |
| BMS 640 | Reproductive Physiology and Endocrinology | |
| BMS 642 | Research Techniques for Gametes and Embryos | |
| BMS 795A | Independent Study: Endocrinology | |
| BMS 795B | Independent Study: Neurophysiology | |
| BMS 795C | Independent Study: Cell Physiology | |
| BMS 795D | Independent Study: Cardiopulmonary Physiology | |
| BMS 795E | Independent Study: Reproductive Physiology | |
| BMS 796A/ NB 796C | Group Study: Topics in Neuroscience | |
| BMS 796B BMS 796C | Group Study: Cardiopulmonary Physiology Group Study: Reproductive Physiology | |
| NB 502/CM 502 | Techniques in Molecular & Cellular Biology | |
| NB 771 | Writing, Submitting, and Reviewing Grants | |
| NB 793 | Neuroscience Seminar | |
| NB 796A | Group Study: Ion Channels | |
| NB 796B | Group Study: Neuronal Growth and Regeneration | |
| NB 796D | Group Study: Seizures and Epilepsy | |
| NB 796E | Group Study: Neuroendocrine Mechanisms | |
| STAR 511 | Design and Data Analysis for Researchers I | |
| STAR 512 | Design and Data Analysis for Researchers II | |
| Dissertation | | |
| BMS 799 | Dissertation | Var |
| Program Total Credits: | | 72 |

A minimum of 72 credits are required to complete this program.

¹ Select courses with approval of advisor and graduate committee.

Requirements for All Graduate Degrees

For more information, please visit Requirements for All Graduate Degrees (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/>) in the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Summary of Procedures for the Master's and Doctoral Degrees

NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (<https://graduateschool.colostate.edu/deadline-dates/>). Students should consult this schedule whenever they approach important steps in their careers.

Forms (<https://graduateschool.colostate.edu/forms/>) are available online.

| Step | Due Date |
|--|--|
| 1. Application for admission (online) | Six months before first registration |
| 2. Diagnostic examination when required | Before first registration |
| 3. Appointment of advisor | Before first registration |
| 4. Selection of graduate committee | Before the time of fourth regular semester registration |
| 5. Filing of program of study (GS Form 6) | Before the time of fourth regular semester registration |
| 6. Preliminary examination (Ph.D. and PD) | Two terms prior to final examination |
| 7. Report of preliminary examination (GS Form 16) - (Ph.D. and PD) | Within two working days after results are known |
| 8. Changes in committee (GS Form 9A) | When change is made |
| 9. Application for Graduation (GS Form 25) | Refer to published deadlines from the Graduate School Website |
| 9a. Reapplication for Graduation (online) | Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying |
| 10. Submit thesis or dissertation to committee | At least two weeks prior to the examination or at the discretion of the graduate committee |
| 11. Final examination | Refer to published deadlines from the Graduate School Website |
| 12. Report of final examination (GS Form 24) | Within two working days after results are known; refer to published deadlines from the Graduate School website |
| 13. Submit a signed Thesis/ Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/ dissertation | Refer to published deadlines from the Graduate School website. |
| 14. Submit the thesis/dissertation electronically | Refer to published deadlines from the Graduate School website |
| 15. Graduation | Ceremony information is available from the Graduate School website |