

BIOCHEMISTRY AND NEUROSCIENCE

College of Natural Science and Mathematics
Department of Chemistry and Biochemistry
907-474-5510
www.uaf.edu/chem/

Ph.D. Degree

Minimum Requirements for Degree: 18 thesis credits

Biochemistry and neuroscience is an interdepartmental program administered by the Department of Chemistry and Biochemistry with research support through the Institute of Arctic Biology. A broad range of biomedical research experiences are available, including molecular and cellular neuroscience, proteomics, protein structure-function and molecular toxicology. The Arctic environment provides additional research opportunities in environmental biochemistry, adaptations and molecular genetics. Students seeking a M.S. degree in these research areas should see the M.S. chemistry with concentration in biochemistry and neuroscience degree.

UAF faculty and affiliate faculty at collaborating institutions provide a rich academic environment encompassing both research and comprehensive course offerings. Students with career interests in biotechnology, pharmaceutical sciences, environmental health, genetics and biomedicine are encouraged to apply. Students are normally accepted with financial support (fellowships, research assistantships and/or teaching assistantships) along with tuition waivers.

Ph.D. Degree with Biochemistry concentration

1. Complete the following admission requirements:
 - a. Submit GRE General Test scores
 - b. If English is not your native language, submit scores from both the Test of Spoken English and the Test of Written English, as well as TOEFL scores. Requests, including justification, for exceptions to this requirement should be made to the chair of the department.
2. Complete the general university requirements (page 210).
3. Complete the Ph.D. degree requirements (page 210).
4. Complete 3 courses from the following list:

CHEM F654—Protein Structure and Function.....	3
CHEM F657—Molecular Foundations of Gene Expression	3
CHEM F674—Membrane Biochemistry and Biophysics	3
CHEM F670—Cellular and Molecular Neuroscience	3
CHEM F675—Cellular Signaling	3
5. Complete three electives.
6. Complete Ph.D. dissertation.
7. Complete two seminar series (CHEM F692).
8. Minimum credits required (including core courses)38

Ph.D. Degree with Neuroscience concentration

1. Complete the following admission requirements:
 - a. Submit GRE General Test scores
 - b. If English is not your native language, submit scores from both the Test of Spoken English and the Test of Written English, as well as TOEFL scores. Requests, including justification, for exceptions to this requirement should be made to the chair of the department.
2. Complete the general university requirements (page 210).
3. Complete the Ph.D. degree requirements (page 210).
4. Complete 3 courses from the following list:

CHEM F654—Protein Structure and Function.....	3
CHEM F657—Molecular Foundations of Gene Expression	3
CHEM F674—Membrane Biochemistry and Biophysics	3
CHEM F670—Cellular and Molecular Neuroscience	3
CHEM F675—Cellular Signaling	3
5. Complete three electives with two of the electives in neurosciences.
6. Complete Ph.D. dissertation in a field of neuroscience.
7. Complete two seminar series (CHEM F692).
8. Minimum credits required (including core courses)38
See Chemistry B.A., B.S., and M.S. programs.
See Environmental Chemistry.