# Neurobiology-NB (NB)

## Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Prerequisite</th>
<th>Registration Information</th>
<th>Term Offered</th>
<th>Grade Mode</th>
<th>Special Course Fee</th>
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<tbody>
<tr>
<td>NB 192</td>
<td>Introductory Neuroscience Seminar</td>
<td>1</td>
<td>Introduction to neuroscience; discussion of concentrations, career paths and research opportunities. Group activities and strategies for success.</td>
<td>None</td>
<td>Written consent of instructor required.</td>
<td>Fall, Spring</td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
</tr>
<tr>
<td>NB 292</td>
<td>Research Topics in Neuroscience</td>
<td>1</td>
<td>A discussion of current research interests of neuroscience faculty.</td>
<td>None</td>
<td>No.</td>
<td></td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
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<tr>
<td>NB 399</td>
<td>Thesis Preparation</td>
<td>1</td>
<td>Preparation for senior thesis in Neuroscience.</td>
<td>(CO 300 or CO 301B) and (BMS 300).</td>
<td>No.</td>
<td>Fall, Spring</td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
</tr>
<tr>
<td>NB 475</td>
<td>Mentored Research in Neuroscience</td>
<td>3</td>
<td>Mentored research with final written report required.</td>
<td>CHEM 344, may be taken concurrently and LIFE 212.</td>
<td>No.</td>
<td>Fall, Spring, Summer</td>
<td>Traditional</td>
<td>No.</td>
</tr>
<tr>
<td>NB 493</td>
<td>Senior Seminar</td>
<td>1</td>
<td>Topics of current interest in neuroscience.</td>
<td>None</td>
<td>No.</td>
<td>Fall, Spring</td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
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<tr>
<td>NB 495</td>
<td>Independent Study</td>
<td>Var[1-4]</td>
<td>Instructor mentored projects performed independently.</td>
<td>None</td>
<td>Written consent of Neuroscience undergraduate program director. Maximum of 12 credits toward degree for any combination of NB 475, NB 487, NB 495, NB 496.</td>
<td>Fall, Spring, Summer</td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
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<tr>
<td>NB 496</td>
<td>Group Study in Neuroscience</td>
<td>Var[1-4]</td>
<td>Faculty-directed exploration of areas of special interest in neuroscience.</td>
<td>None</td>
<td>Written consent of Neuroscience undergraduate program director. Maximum of 12 credits toward degree for any combination of NB 475, NB 487, NB 495, NB 496.</td>
<td>Fall, Spring, Summer</td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
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<tr>
<td>NB 499</td>
<td>Senior Thesis</td>
<td>3</td>
<td>Interpreting research results (experiential or from the literature) and writing a thesis; oral presentation required; supervised by a faculty mentor.</td>
<td>NB 399 and NB 493, may be taken concurrently.</td>
<td>No.</td>
<td>Fall, Spring, Summer</td>
<td>Traditional</td>
<td>No.</td>
</tr>
<tr>
<td>NB 500</td>
<td>Readings in Cellular Neurobiology</td>
<td>1</td>
<td>Faculty directed exploration of key literature in the neurosciences.</td>
<td>CHEM 344 and LIFE 212.</td>
<td>No.</td>
<td></td>
<td>S/U Sat/Unsat Only</td>
<td>No.</td>
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<tr>
<td>NB 501</td>
<td>Cellular and Molecular Neurophysiology</td>
<td>2</td>
<td>Membrane properties of nerve and muscle; molecular mechanisms of synaptic function; neuromuscular units.</td>
<td>(BZ 100 to 481 - at least 1 course or BIO 100 to 481 - at least 1 course and PH 100 to 481 - at least 1 course) and (BC 100 to 481 - at least 1 course and PH 100 to 481 - at least 1 course and MATH 141 or MATH 155 or MATH 160 to 161 - at least 1 course or MATH 255 or MATH 261) and (BMS 325)</td>
<td>No.</td>
<td>Written consent of Neuroscience undergraduate program director. Maximum of 12 credits toward degree for any combination of NB 475, NB 487, NB 495, NB 496.</td>
<td>Fall, Spring, Summer</td>
<td>S/U Sat/Unsat Only</td>
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### NB 500 Readings in Cellular Neurobiology

**Course Description:** Faculty directed exploration of key literature in the neurosciences.

**Prerequisite:** CHEM 344 and LIFE 212.

**Restriction:** Must not be a: Freshman, Sophomore, Junior.

**Registration Information:** Senior standing. Written consent of instructor. Credit not allowed for both BMS 502 and NB 500.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

### NB 501 Cellular and Molecular Neurophysiology

**Course Description:** Membrane properties of nerve and muscle; molecular mechanisms of synaptic function; neuromuscular units.

**Prerequisite:** (BZ 100 to 481 - at least 1 course or BIO 100 to 481 - at least 1 course and PH 100 to 481 - at least 1 course) and (BC 100 to 481 - at least 1 course and MATH 141 or MATH 155 or MATH 160 to 161 - at least 1 course or MATH 255 or MATH 261) and (BMS 325) | No.                      | Written consent of Neuroscience undergraduate program director. Maximum of 12 credits toward degree for any combination of NB 475, NB 487, NB 495, NB 496. | Fall, Spring, Summer | S/U Sat/Unsat Only | No.               |

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.
NB 502 Techniques in Molecular & Cellular Biology Credits: 2 (1-3-0)
Also Offered As: CM 502.
Course Description: Current methods in molecular and cellular neurobiology.
Prerequisite: (BIO 100 to 481 - at least 4 credits or BZ 100 to 481 - at least 4 credits or LIFE 100 to 481 - at least 4 credits) and (BC 100 to 481 - at least 4 credits and PH 100 to 481 - at least 4 credits).
Registration Information: Written consent of instructor. Must register for lecture and laboratory. Credit not allowed for both CM 502 and NB 502.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

NB 503 Developmental Neurobiology Credits: 3 (3-0-0)
Also Offered As: BMS 503.
Course Description: Molecular mechanisms involved in development of nervous system including differentiation, growth, pathfinding, and synaptogenesis.
Prerequisite: (BIO 100 to 481 - at least 1 course or BZ 100 to 481 - at least 1 course or LIFE 100 to 481 - at least 1 course) and (BC 100 to 481 - at least 1 course and PH 100 to 481 - at least 1 course) and (MATH 141 or MATH 155 or MATH 160 to 161 - at least 1 course or MATH 255 or MATH 261).
Registration Information: Credit not allowed for both NB 503 and BMS 503.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

NB 505 Neuronal Circuits, Systems and Behavior Credits: 3 (3-0-0)
Also Offered As: BMS 505.
Course Description: Anatomical and physiological organization of the nervous system.
Prerequisite: BMS 325 or BMS 500 or NB 501.
Registration Information: Credit not allowed for both BMS 505 or NB 505.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

NB 586 Practicum-Techniques in Neuroscience II Credit: 1 (0-2-0)
Course Description: Current research projects in the laboratories of neuroscience faculty.
Prerequisite: NB 501 and NB 502.
Term Offered: Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 600 Advanced Psychology-Sensation and Perception Credits: 3 (3-0-0)
Also Offered As: PSY 600D.
Course Description: Neural mechanisms of human perception; color and depth perception, pitch, loudness, and the effects of aging.
Prerequisite: PSY 456 and PSY 100 to 799 - at least 15 credits.
Restriction: Must be a: Graduate, Professional.
Registration Information: Credit not allowed for both NB 600 and PSY 600D.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

NB 650 Computer Analysis of Neuronal Proteins Credit: 1 (1-0-0)
Course Description: Theory and practice of using computers to study proteins.
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Term Offered: Spring (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

NB 750 Physiology of Ion Channels Credits: 2 (2-0-0)
Course Description: Physiological and structural analysis of membrane ion channels.
Prerequisite: BMS 500.
Restriction: Must be a: Graduate, Professional.
Registration Information: Written consent of instructor required.
Term Offered: Spring (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

NB 771 Writing, Submitting, and Reviewing Grants Credit: 1 (1-0-0)
Course Description: Preparation of NRSA fellowship proposals; proposal review; possible submission to NIH for funding.
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

NB 793 Neuroscience Seminar Credit: 1 (0-0-1)
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 795 Independent Study Credits: Var[1-18] (0-0-0)
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 796A Group Study: Ion Channels Credits: Var[1-18] (0-0-0)
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 796B Group Study: Neuronal Growth and Regeneration Credits: Var[1-18] (0-0-0)
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.
NB 796C  Group Study: Topics in Neuroscience  Credits: Var[1-4] (0-0-0)
Also Offered As: BMS 796A.
Course Description: Faculty-directed exploration of areas of special interest in neuroscience.
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Registration Information: Written consent of instructor. May not be taken concurrently with BMS 796A.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 796D  Group Study: Seizures and Epilepsy  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.

NB 796E  Group Study: Neuroendocrine Mechanisms  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring.
Grade Mode: Instructor Option.
Special Course Fee: No.