CGS Agenda Item:17-30
Effective Spring 2018

Eastern Illinois University
New Course Proposal
BIO 4835, Advanced Neurobiology

Banner/Catalog Information (Coversheet)

1. **X New Course or _____Revision of Existing Course**
2. **Course prefix and number:** BIO 4835
3. **Short title:** Advanced Neurobiology
4. **Long title:** Advanced Neurobiology
5. **Hours per week:** 3 Class 0 Lab 3 Credit
6. **Terms:** Fall X Spring Summer ___ On demand
7. **Initial term**: ___ Fall X Spring ___ Summer Year: 2018
8. **Catalog course description:** This course will cover advanced topics on molecular, cellular and physiological aspects of brain structure and function during health and diseases.
9. **Course attributes:**

   General education component: N/A

   ___ Cultural diversity ___ Honors ___ Writing centered ___ Writing intensive ___Writing active
10. **Instructional delivery**
    Type of Course:

    X Lecture ___ Lab ___ Lecture/lab combined ___ Independent study/research

    ___ Internship ___ Performance __ Practicum/clinical ___ Other, specify: _____

    Mode(s) of Delivery:

    X Face to Face ___ Online ___ Study Abroad

    ___ Hybrid, specify approximate amount of on-line and face-to-face instruction_____
11. **Course(s) to be deleted from the catalog once this course is approved.** None
12. **Equivalent course(s):** None

    a. Are students allowed to take equivalent course(s) for credit? ___ Yes ___ No
13. **Prerequisite(s):** BIO 4834

    a. Can prerequisite be taken concurrently? ___ Yes X No

    b. Minimum grade required for the prerequisite course(s)? C

    c. Use Banner coding to enforce prerequisite course(s)? ___ Yes X No

d. Who may waive prerequisite(s)?

___ No one X Chair X Instructor ___ Advisor ___ Other (specify)

14. Co-requisite(s): None

15. Enrollment restrictions

a. Degrees, colleges, majors, levels, classes which <u>may</u> take the course: All

b. Degrees, colleges, majors, levels, classes which may <u>not</u> take the course: May not have previously taken BIO5460H-001 (CRN#33735) or BIO3960A-003 (CRN#32704). The proposed course is currently being offered as a special topic course for graduate (BIO5460H-001) or undergraduate (BIO3960A-003) credit.

16. Repeat status: X May not be repeated ___ May be repeated once with credit

17. Enter the limit, if any, on hours which may be applied to a major or minor: ___

18. Grading methods: X Standard ___ CR/NC __ Audit ___ ABC/NC

19. Special grading provisions: N/A

___ Grade for course will <u>not</u> count in a student's grade point average.

___ Grade for course will <u>not</u> count in hours toward graduation.

___ Grade for course will be removed from GPA if student already has credit for or is registered in: _____

___ Credit hours for course will be removed from student's hours toward graduation if student already has credit for or is registered in: _____

20. Additional costs to students:
Supplemental Materials or Software_____

Course Fee X No ___Yes, Explain if yes_____

21. Community college transfer:

___ A community college course may be judged equivalent.

X A community college may <u>not</u> be judged equivalent.

Note: Upper division credit (3000+) will <u>not</u> be granted for a community college course, even if the content is judged to be equivalent.

Rationale, Justifications, and Assurances (Part I)

1. ___Course is required for the major(s) of _____
   ___Course is required for the minor(s) of _____
   ___Course is required for the certificate program(s) of _____
   X Course is used as an elective
2. **Rationale for proposal**: In Advanced Neurobiology course, students will explore more deeply into complex topics in neurobiology including movement and its central control, nervous system plasticity, and neurobiology of complex brain functions. The main goal of this course is to prepare students for graduate studies in neurobiology or related fields, professional studies in medical sciences, and careers in the biotechnology, pharmaceuticals, and health care industries.
3. **Justifications for (answer N/A if not applicable)**
   Similarity to other courses: None
   Prerequisites: BIO 4834 (Neurobiology) so that students understand the fundamentals of neurobiology.
   Co-requisites: None
   Enrollment restrictions: May not have previously taken BIO5460H-001 (CRN#33735) or BIO3960A-003 (CRN#32704). The proposed course is currently being offered as a special topic course for graduate (BIO5460H-001) or undergraduate (BIO3960A-003) credit.
   Writing active, intensive, centered: N/A
4. **General education assurances (answer N/A if not applicable)**
   General education component: N/A
   Curriculum: N/A
   Instruction: N/A
   Assessment: N/A
5. **Online/Hybrid delivery justification & assurances (answer N/A if not applicable)**
   Online or hybrid delivery justification: N/A
   Instruction: N/A
   Integrity: N/A
   Interaction: N/A

Model Syllabus (Part II)

1. **Course Number, Title, Credit Hours**
   BIO 4835, Advanced Neurobiology, 3-0-3

2. **Catalog Description**
   This course will cover advanced topics on molecular, cellular and physiological aspects of brain structure and function during health and diseases.

3. **Learning Objectives (Goals)**
   a. Integrate anatomical structure and physiological function of the nervous system (CT 1-5, GLG 1-2).
   b. Apply knowledge of neuroanatomy and neurophysiology to interpret results, formulate hypotheses, predict the results and discuss and summarize the key neurological findings (CT 6, WR 1-7, RC 1-4, GLG 2-4).
   c. Apply acquired knowledge on the neuroanatomy and neurophysiology in health and diseases (CT 1-6, WR 1-7, QR 1-6, GLG 2-4).

4. **Course Materials**

   Textbook: Purves, D., *et al*., 2012. Neuroscience, 5th edition, Sinauer Publishers.

5. **Weekly Outline of Content**

   Week 1: Lower motor neuron circuits and motor control.

   Week 2: Upper motor neuron control of the brainstem and spinal cord.

   Week 3: Modulation of movement by the basal ganglia.

   Week 4: Modulation of movement by the cerebellum.

   Week 5: Eye movements and sensory motor integration.

   Week 6: The visceral motor system.

   Week 7: Early brain development.

   Week 8: Construction of neural circuits.

   Week 9: Modification of neural circuits as a result of experience.

   Week 10: Repair and regeneration in the nervous system.

   Week 11: Association cortex.

   Week 12: Neurobiology of learning and memory.

   Week 13: Neurobiological regulation of Sleep and wakefulness.

   Week 14: Neurological basis of emotions.

   Week 15: Neurobiology of sex and sexuality.

   Week 16: Final Exam

6. **Evaluation**

Tests	200 points
Homework	50
In Class Discussions	50
Term Papers	100

Final Exam	100
Total	500

Note: Term paper, including literature review: 6 pages for undergraduates, 12 pages for graduate students.

7. Grading Scale

90% or more = A; 80-89% = B; 70-79% = C, 65-69% = D; <65% = F

8. Correlation of learning objectives to assignments and evaluation

Learning Objectives	Tests, homework, class discussion (60%)	Final Exam (20%)	Term Papers (20%)
Integrate anatomical structure and physiological function of the nervous system (CT 1-5, GLG 1-2).	X	X	X
Apply knowledge of neuroanatomy and neurophysiology to interpret results, formulate hypotheses, predict the results and discuss and summarize the key neurological findings (CT 6, WR 1-7, RC 1-4, GLG 2-4).	X	X	X
Apply acquired knowledge on the neuroanatomy and neurophysiology in health and diseases (CT 1-6, WR 1-7, QR 1-6, GLG 2-4).	X	X	X

Date approved by the department or school: February 21, 2017

Date approved by the college curriculum committee: February 24, 2017

Date approved by the Honors Council *(if this is an honors course):*

Date approved by CAA: March 9, 2017 CGS: