

**COURSE APPROVAL FORM, Graduate School  
University of Arkansas for Medical Sciences**

This form and attached materials are due in the Graduate School Office on the first Monday of the month. All forms will be submitted to the UAMS Graduate Council Curriculum Committee for review and approval prior to consideration by the Graduate Council.

This form is not required for minor stylistic or editorial corrections to the title or course descriptions. These may be made when revising the catalog copy.

1. **Program:** Physiology & Biophysics/GPIBS | | | | | | | |  
*Department* *Alpha (Department) Code*

2. **Action proposed** (indicate one or more items): Effective term: Fall 2017

- |  |   |          |
|--|---|----------|
| <input type="checkbox"/> Add course                              | <input type="checkbox"/> Change title                             |          |
| <input type="checkbox"/> Eliminate course<br>(No outline needed) | <input type="checkbox"/> Change credit hours from: _____ to _____ |          |
|  | <input type="checkbox"/> Change course number                     | to _____ |
|  | _____ from: _____   |          |
|  | _____ Change description  | _____    |

3. **Course ID, title and description:**

P	H	Y	O	5	1	0	4	<u>Cellular and Molecular Endocrinology</u>
prefix				number				title (20 characters)
same as above								catalog name (40 characters)

Scheduled offering:  Fall  Spring  Summer  On demand

To cross list a course, use the Course Cross Listing Form.

Describe the course in sentence form using 50 words or less as it is to appear in the catalog. List prerequisites, co-requisites and possible off-site instructional opportunities or requirements.

This graduate course combines didactic lectures and discussions of scientific papers focusing on the fundamentals of hormone action and signal transduction at the cellular and molecular levels. Emphasis is on conceptual understanding and critical thinking of key mechanisms and experimental approaches in cellular and molecular endocrinology. Prerequisites: NBDS5111, BIOCH5101 or consent of Instructor.

4. **Justification:**

Justify this change in terms of course needs or curriculum improvement. State the effect of this change on any degree programs. Identify the courses to be eliminated, if any, if this course is approved. (Course Approval Forms must also be submitted for these courses) Identify any existing course or courses that would extensively overlap or be duplicated if the proposed curricular change occurs. Provide statements of concurrence with the change from the chairperson(s) and dean(s) of the programs/areas offering the affected courses.

The course was previously offered as PHYO5033 (Cellular Endocrinology) with Dr. Dana Gaddy as Course Director. With Dr. Gaddy's departure, Dr. RCM Simmen will serve as Course Director. Dr. Simmen has re-formatted the Course topics and Instructors in keeping with the most current and relevant areas in molecular endocrinology. This Course is highly relevant to the updated GPIBS program at UAMS.

Course Approval Form

**5. Course Information:** *This information is not required for seminars, special problems, research, thesis, dissertation, colloquia, practica, etc.*

**Course Title and Course number:** See Graduate School Office for assignment of course number.

**Credit Hours:** 3 Cellular and Molecular Endocrinology, PHYO 5104

**Proposed Date/Semester:** Fall 2017

**Course Description:** *Briefly describe course topics and educational materials the course will cover.*

**Course Goals or Objectives:** *State at least one: examples.* See attached Syllabus

- To evaluate ...
- To demonstrate ...
- To measure...
- To conduct ...
- To be able to ...

**Course Prerequisites:** *State if any; if none, indicate "No prerequisites."*

The prerequisites are... NBDS5111, BIOCH5101 or consent of Instructor.

**Attendance:** *See example below.*

Attendance is required for all classes. Excused absences may be obtained only by permission from the course director. Make-up exams will only be given under the most extenuating circumstances.

**Student Evaluation:** *See examples below;*

This is a pass/fail course. A grade of 70% or greater will constitute a "pass". See attached Syllabus

Students' grades will be based on the following:

Attendance, discussion of reading, class/lab participation.....	20%
Final Examination .....	80%
TOTAL.....	100%

**Course Evaluation:** *See example below; include evaluation by faculty peers as well as by students.*

At the end of the course, students will be provided with a Course Evaluation Form to anonymously assess the content and delivery of the course. Faculty will assess the course each term and make any appropriate modifications and updates.

**Textbooks/Reading Materials:** *See examples below.* See attached Syllabus

Textbook XXX along with other assigned reading will be used.

There will be no textbook but journal articles will be assigned reading.

Students will be e-mailed a copy of the PowerPoint presentations before each lecture.

**Course Director(s):** Dr. XXX Dr. Rosalia C.M. Simmen

**Tentative Course Schedule:** See Attached Syllabus

Session	Date	Topic	Instructor
1			
2			
3			
4			
5			
6			

Course Approval Form

6. Program Approvals:

Michael L. Jennings  
(Print or type) Chairperson, Academic Department or Area

Michael L. Jennings 2/6/17  
(Signature) Chairperson, Academic Department or Area Date

[Signature] 2/23/17  
College Dean (Dean McGehee for College of Medicine) Date

7. Graduate School Approvals

[Signature] 2/23/17  
Chairperson, Graduate Council Date

[Signature] 2/23/17  
Dean of the Graduate School Date

## Cellular and Molecular Endocrinology PHYO 5104

UAMS Fall 2017

**Course Director:** Rosalia C.M. Simmen, Ph.D.  
Email: [simmenrosalia@uams.edu](mailto:simmenrosalia@uams.edu)  
Phone: 501-526-7575  
Office Hours: TBA, email-accessible

**Class Schedule:** Tuesday/Thursday, 9:00-10:30 A.M.; Pasley Conference Room, Biomed 2 (242-2)

**Course Description:** This graduate course combines didactic lectures and in-class discussions of scientific papers focusing on the fundamentals of hormone action and signal transduction at the cellular and molecular levels. Emphasis is on conceptual understanding and critical thinking of key mechanisms and experimental approaches in cellular and molecular endocrinology with applicability to other areas of biology.

**Prerequisites:** NBDS5111, BIOCH5101 or consent of Instructor.

**Readings:** There is no required textbook. Instructors will post their lecture slides in Blackboard in advance of each class. Reading materials will be primary research papers to be assigned by each Instructor and provided to students at least one week prior to class.

**Examinations:** There will be three take-home, open book exams, to be handed out as scheduled and due to the Course Director by 5 p.m, 2 days after the scheduled exam date. The format of the exam will be short answer/essay with focus on critical thinking and experimental design. Points will be distributed equally for each lecture (10 points/lecture). Each exam is worth 80 points.

**Student Presentations:** Each student will select a primary journal article focused on a signaling pathway in an endocrine system. The student's selected paper should be submitted by November 22, 2017 to the Course Director who will approve the selection for presentation. Students will give a 20 min oral presentation on their critical review of the paper. The critical review will highlight the key experiments and results drawn from the paper, and pose a valid question for developing new directions for future research.

**Grading:** Course grades will be based on the following: Exam 1-80 points; Exam 2-80 points; Exam 3-80 points; Presentation-20 points. Grades will be scaled with the class average set at B.

### Lecture Schedules, Topics and Instructor

Dates	Lecture Topic	Instructor
8-22	Nuclear Receptor Signaling-Estrogen Receptor	R Simmen
8-24	Nuclear Receptor Signaling-Progesterone/Gluc Receptor	R Simmen

8-28	Nuclear Receptor Signaling-Androgen Receptor	A Diekman
8/30	Nuclear Receptor Co-Regulators	R Simmen
9-5	Serine and Tyrosine Kinases	H Zhao
9-7	G-protein Coupled Receptors	G Baldini
9-12	Calcium Signaling	P Palade
9-14	Cytokines and Jak-Stat Signaling	P Drew
<b>9-19</b>	<b>EXAM 1 (Take home, due 9-21)</b>	
9-21	Wnt-Signaling (Bone)	R Morello
9-26	Notch and Hedgehog Signaling (Stem Cells)	M Macnicol
10-3	Neuroendocrine Hormones-Hypothalamus	G Childs
10-5	Neuroendocrine Hormones- Pituitary	G Childs
10-10	Thyroid Hormone Signaling	A Franco
10-12	Insulin Signaling (Liver and Fat)	K Shankar
10-17	IGF Signaling (Somatic Growth)	F Simmen
10-19	Gut Hormone Signaling	F Simmen
<b>10-24</b>	<b>EXAM 2 (Take home, due 10-26)</b>	
10-26	Manipulating Cellular Signaling- CRISPR	V Lupashin
10-31	Manipulating Cellular Signaling-Endocrine Disrupting Chemicals	S Blossom
11-7	Manipulating Cellular Signaling-Altering Receptor Function	KI Varughese
11-9	Integration of Signaling Pathways: Puberty	A Odle
11-14	Integration of Signaling Pathways: Parturition	R Simmen
11-16	When Endocrine Signaling Goes Awry: Osteoporosis	C O'Brien
11-21	When Endocrine Signaling Goes Awry: Endocrine Aspects of Gynecologic Cancers	K Zorn

11-28	When Endocrine Signaling Goes Awry: Obesity	Kartik Shankar
12-5	STUDENT PRESENTATIONS	
12-7	STUDENT PRESENTATIONS	
12-12	<b>EXAM 3 (Take home, due 12-14)</b>	