

Course Information

Date Submitted: 5/2/2013

Current Prefix and Number: IBS - Integrated Biomedical Sciences , IBS 603 - CELL BIOLOGY

Other Course:

Proposed Prefix and Number: IBS 603

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? No

1. General Information

a. Submitted by the College of: College of Medicine

b. Department/Division: Integrated Biomedical Sciences

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: Brett T. Spear

Email: bspear@uky.edu

Phone: 257-5167

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: No OR Effective Semester: Spring 2014

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: N/A

b. Full Title: CELL BIOLOGY

Proposed Title: Cell Biology and Signaling

c. Current Transcript Title: CELL BIOLOGY

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

LECTURE: 41

Proposed Meeting Patterns

LECTURE: 41

f. Current Grading System: Graduate School Grade Scale

Proposed Grading System: PropGradingSys

g. Current number of credit hours: 3

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester? No

2i. Current Course Description for Bulletin: An introduction to cell biology and signaling focused on cell types and architecture, membrane structure, cytoskeletons, mitochondria, cellular mechanisms of development, cell division, cell cycle, apoptosis and prokaryotic cell biology and modulation by bacterial pathogens.

Proposed Course Description for Bulletin: An introduction to cell biology and signaling focused on cell types and architecture, membrane structure, cytoskeleton, mitochondria, cellular mechanisms of development, cell division, cell cycle, apoptosis, necrosis and cancer. Emphasis will also be placed upon the signaling pathways controlling these processes.

2j. Current Prerequisites, if any: Prereq: CHE 105, 107, 230 and 232; BIO 150 and 152; or equivalents.

Proposed Prerequisites, if any: Prereq: CHE 105, 107, 230 and 232; BIO 150 and 152; or equivalents.

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? Yes

If YES, explain and offer brief rationale: The curriculum for Integrated Biomedical Sciences (IBS) is currently being revised, which involves a number of different changes that includes the reduction of didactic coursework and an increase in teaching in small group format. The contents of IBS 603 (Cell Biology) and IBS 604 (Cell Signaling) are being merged into a single 3-credit hour course (New course: IBS 603, Cell Biology and Signaling). This will result in certain topics from both original courses being eliminated or reduced in content. However, the important concepts of both courses will remain. Furthermore, this merger will result in a reduction in the redundancy between IBS 603 and IBS 604. Method of grading and exam format will not change.

5a. Are there other depts. and/or pgms that could be affected by the proposed change? Yes

If YES, identify the depts. and/or pgms: College of Medicine: Graduate Center for Toxicology; Master of Science in Medical Sciences; Graduate Center for Nutritional Sciences. These programs require IBS603 for their students. The DGS of this change and the revised IBS603 will continue to be taken by their students. IBS 603 is also taken as an elective by students in other graduate programs; these students will still be allowed to take IBS 603 and it is anticipated that the revised course will still satisfy their needs in that it provides a solid foundation in Cell Biology.

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? **NO**

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? **NO**

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|WF-BATCH|Batch User|Get the department head person|20130121

SIGNATURE|WF-BATCH|Batch User|Get College Approvers|20130121

SIGNATURE|MRWH224|Melissa R Wilkeson|College approval for ZCOURSE_CHANGE IBS 603|20130225

SIGNATURE|JDLIND2|Jim D Lindsay|HCCC approval for ZCOURSE_CHANGE IBS 603|20130308

SIGNATURE|ZNNIKO0|Roshan N Nikou|Graduate Council approval for ZCOURSE_CHANGE IBS 603|20130326

SIGNATURE|WF-BATCH|Batch User|Reminder for minor course work item|20130417

IBS 603
Cell Biology and Signaling
SYLLABUS
Spring 2014

Faculty	Department	Office	Phone	Email
<i>Course Director</i> Michael Kilgore	Pharmacology	MN354 UKMC	323-1821	m.kilgore@uky.edu
<i>Course Assistant</i> Deborah Turner	Pharmacology	MN306 UKMC	323-6085	dturner@uky.edu
<i>Participating Faculty</i>				
Doug Andres	Biochemistry	BBSRB 283	257-6775	dandres@uky.edu
Luke Bradley	Anatomy	MN 222	323-1826	lhbradley@uky.edu
Rolf Craven	Pharmacology	213 Combs	323-3832	rolf.craven@uky.edu
Gregory Frolenkov	Physiology	MS615 UKMC	323-8729	gregory.frolenkov@uky.edu
Richard Grondin	Anatomy	313 Whitney	323-8925	rcgron0@uky.edu
Mariana Karakashian	Physiology	MS 531	323-1115	aakara2@uky.edu
Timothy McClintock	Physiology	MS 585	323-1083	mcclint@uky.edu
M. Paul Murphy	Biochemistry	211 Sanders-Brown	257-1412 ext. 490	mpmurp3@email.uky.edu

A. COURSE DESCRIPTION

IBS 603 (Cell Biology and Signaling) is a 3-credit hour Spring semester course consisting of lectures on a number of related topics including cell types and architecture, membrane structure, cytoskeleton, mitochondria, cellular mechanisms of development, cell division, cell cycle, apoptosis, necrosis and cancer. Emphasis will also be placed upon the signaling pathways controlling these processes. Exams will be given after approximately 9 to 13 lectures; the final exam is not cumulative.

B. COURSE OBJECTIVES and LEARNING OUTCOMES

To provide students with a detailed understanding of cell structure and function, cell cycle, cell transformation and cell death and signaling pathway and mechanism that control these functions.

C. CLASS ATTENDANCE

It should be noted that class attendance is expected! Should it become necessary a sign-up sheet will be issued at every class session. **Students may be required to sign their own name to prove attendance. If so, the sign up sheet will be collected 5 minutes after the start of class. Please inform Ms. Turner or Dr. Kilgore if you have any excused absences.** (See F).

D. TEXT AND COURSE MATERIALS

Faculty will provide lecture outlines and notes for their lectures. These will be provided during the course via Blackboard (see <https://elearning.uky.edu/>). Students are encouraged to check the IBS Blackboard website on a daily basis for course information.

Molecular Biology of the Cell, 5th Edition, Alberts *et al.* will be the reference text book for IBS 603. Faculty may assign chapters from Alberts *et al.* for each lecture and additional literature materials will be assigned as needed. While the 5th edition contains significant and substantive changes from the 4th edition, the 4th remains a viable reading supplement for most of the course.

E. PREREQUISITES

CHE 105 and 107, General College Chemistry I and II; CHE 230 and 232, Organic Chemistry I and II, BIO 150 and 152, Principles of Biology I and II, or equivalents. Students are encouraged to talk with the course director if they are not sure whether they have the appropriate prerequisites.

F. GRADING AND ATTENDANCE POLICIES

Students will be evaluated on the basis of the four written examinations. Each examination will last approximately two hours and will account for **25%** of the total grade.

The grading standards employed are listed and students who perform in these ranges will be guaranteed to receive the indicated grades:

A:	90-100%
B:	80-89%
C:	70-79%
D:	60-69%
E:	below 60%

Depending on the performance of the class as a whole, some adjustments (curving) **may** take place on the final cumulative semester grade. For example, median score = B, + 1 Standard Deviation = A, - 1 Standard Deviation = C may be employed but **is not a rule**.

Examinations can be submitted for a re-evaluation if the student feels that they can justify their position. Requests for re-evaluation must be accompanied by a written explanation of the perceived discrepancy. Upon this request, the entire examination may be subjected to a re-evaluation and all questions therein will be regarded at the instructor's discretion. Exams that a student submits for re-evaluation must be presented to the instructor who wrote the exam question within one week (7 days) of the exam's return.

Graduate students will not receive a grade of "D" but instead will receive a failing "E" mark for an average under 70%. All examinations must be taken at the scheduled time except when legitimate medical or personal reasons make it impossible to do so. Prior notification of your absence to the course director is required. In these cases, either an oral or written make-up examination will be given. An "I" grade will not be assigned to students who simply miss an examination.

Incompletes: An incomplete grade due to illness or other emergencies may be arranged. A request for an incomplete due to illness must be accompanied by a letter from your doctor, the Student Health Service, or a hospital. Lack of time to complete assigned work, or other reasons not relating to unavoidable excused absences, will not be accepted as a valid reason for petitioning for an incomplete. No incompletes will be given unless you have a prior written agreement with the instructor BEFORE the end of classes.

G. UNDERGRADUATE ENROLLMENT

Undergraduate students may enroll in the course with the permission of the Course Director.

H. OFFICE HOURS

The course director and faculty will be available for consultation. Students are encouraged to consult with all participating faculty; in general, email is the most effective means of scheduling a meeting.

I. DAY, DATES & TIMES

IBS 603 meets Monday, Wednesday, Friday, 9:00-9:50 AM in the Medical Sciences Building MN 263 unless otherwise noted. Exam times during the semester are 6:00-8:00 p.m. Please refer to the **Room** listing for the correct classroom for each lecture and each exam.

J. TOPIC

Readings refer to the chapter numbers from *Molecular Biology of the Cell* (Alberts et al., 5th edition) and are **required** reading. Where handouts are made available, these too will be required reading. A copy of the text will be put on hold in the Medical Center Library.

K. ACADEMIC HONESTY and INTEGRITY

The University has a policy that neither condones nor allows cheating, plagiarism, falsification or misuse of data. No exception to this policy will be tolerated. The course director reserves the right to assign a zero for the assignment in question as a minimum action. Further breaches may lead to referring the student for suspension from the University. It is the responsibility of the student to become familiar with the rules of academic dishonesty as outlined in the Code of Student Rights and Responsibilities (<http://www.uky.edu/Ombud>). Ignorance of these guidelines is not a defensible position against these rules.

Part II of *Student Rights and Responsibilities* (<http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it is a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work that a student submits as their own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, the student, and the student alone must do it. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how these were employed. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas that are so generally and freely circulated as to be a part of the public domain (Section 6.3.1). Programs and resources including, but not limited to, sources such as <http://www.plagiarism.org/> will be employed to insure academic integrity.

L. ACCOMODATIONS

If you have a documented disability that requires academic accommodations, please see the Course Director as soon as possible during scheduled office hours. In order to receive accommodations in this course, a Letter of Accommodation must be provided from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

M. INCLEMENT WEATHER

The University of Kentucky has a detailed policy for decisions to close in inclement weather. The snow policy is described in detail at http://www.uky.edu/PR/News/severe_weather.htm or you can call (859) 257-5684. In general, the University is not closed for severe weather, but the instructor may decide to cancel the class, in which case, s/he will post this information on Blackboard at <https://elearning.uky.edu/webapps/portal/frameset.jsp>

N. ABSENCES (per Senate Rule 5.2.4.2)

Students are expected to attend each class meeting unless she/he has been excused by the instructor. Students must call or email the instructor at the numbers/address listed on the first page of this syllabus to let him/her know of an absence. *Missed exams due to conflicts, illness or emergencies (see below) must be reported to the Course Director prior to the exam.* Make these arrangements as soon as you know of the conflict--BEFORE the exam. When there is an excused absence, students will be given the opportunity to make up missed work and/or exams.

The following are several typically accepted reasons for excused absences from exams:

1. Serious illness.
2. Illness or death of a family member.
3. Approved University-related trips or activities.
4. Major religious holidays.
5. Conflict with another class.
6. Other circumstances found to be "reasonable cause for nonattendance" (i.e., subpoenas, jury duty, military service)

Students anticipating an absence for a major religious occasion are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day for adding a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (257-2754).

Unexcused absences

A student who has unexcused absences in excess of five classes may receive a failing grade for the course without regard for points earned in exams. No makeup opportunities (including exams) will be given for unexcused absences. As mentioned previously, students are expected to take exam at the times scheduled in the syllabus.

SYLLABUS

#	Date	Topic	Instructor			
1	Jan. 15	Introduction: and Cell types	Kilgore			
2	17	Nucleus	Murphy			
	20	MLK day, No Class				
3	22	Nucleus I	Murphy			
4	24	Nucleus II	Murphy			
5	27	Ribosomes	Murphy			
6	29	Membrane Structure	Frolenkov			
7	31	Membrane compartments	Frolenkov			
8	Feb. 3	Ion transport and excitability	Frolenkov			
9	5	Ion channels	Frolenkov			
10	7	Calcium signaling	Frolenkov			
	10	Exam #1 (Lectures 1-10)				
11	10	Mitochondria I	Kilgore			
12	12	Mitochondria II	Kilgore			
13	14	Peroxisomes	Kilgore			
14	17	Endocytosis	Kilgore			
15	19	Endoplasmic reticulum	Andres			
16	21	Golgi complex	Andres			
17	24	Vesicular transport	Andres			
18	26	Receptor tyrosine kinase signaling	Andres			
19	28	Tyrosine kinase signaling	Andres			
20	March 3	Growth factor signaling	Andres			
21	5	Ubiquitin and sumoylation signaling	Andres			
	7	Exam #2 (Lectures 11-21)				
		Spring Break, March 10-14				
22	17	Cytoskeleton I	Bradley			
23	19	Cytoskeleton II	Bradley			
24	21	Contractile Function	Bradley			
25	24	Receptor pharmacology	McClintock			
26	26	G-protein coupled receptors	McClintock			
27	28	G-protein signaling	McClintock			
28	31	Gaseous messengers: NO & CO	McClintock			
29	April 2	Extracellular matrix	Karakashian			
30	4	Focal adhesion signaling	Karakashian			
31	7	Lipid signaling I	Karakashian			
32	9	Lipid signaling II	Karakashian			
	11	Exam 3 (lectures 22-33)				
33	14	Cell death and necrosis I	Craven			
34	16	Cell death and necrosis II	Craven			
35	18	Cell cycle and division I	Craven			
36	21	Cell cycle and division II	Craven			
37	23	Cancer and transformation I	Craven			
38	25	Cancer and transformation II	Craven			
39	28	Cancer and transformation III	Craven			
40	30	Cells and development I	Grondin			
41	May 2	Cells and development II	Grondin			
	6	Final, Exam #4 (Lectures 34-42)				

