



General Information

Course Title:	Cell and Systems Biology	Course Designation: BMS 502	Credits: 3
Semester:	Fall	Year:	2008
Department:	Various		
Director:	Drs. Pat McLaughlin & Hank Donahue	Phone #	6414
		Email:	pxm9@psu.edu hdonahue@psu.edu
		Office Rm #	C3727
Time :	10 am to 11:00 am (unless noted otherwise)	Days:	M W Th (unless noted otherwise)
		Location:	usually C1845

Course Information

Description and/or Overview:
This core course focuses on the principles and concepts of cellular and intracellular organization, assembly of cells into tissues, and further integration of cells and tissues into biological systems.
Goals and/or Objectives:
To gain an in-depth knowledge of the key concepts related to cell biology, tissue organization, and systems biology.

Pre-requisites:
None
Requirements; course-specific policies and expectations:
The instructors will assign readings and problems to augment material presented in lecture.
Required Texts and Resources:
<i>Molecular Biology of the Cell</i> , 5 th Edition (B. Alberts et al., editors), Garland Science, 2008. ISBN –978-0815341055. Additional textbooks on histology and development will be placed on reserve in the Harrell Library.
Other reading assignments, including peer-reviewed research journals, will be required.

Electronic Links:
ANGEL (https://cms.psu.edu/frameIndex.htm)
Attendance Policy:
Attendance is highly recommended but is the student's responsibility. Arrangements should be made with the Course Directors in cases of unavoidable absence.
Examination Policy:
In-class exams will be given at the times listed on the syllabus. Students MUST be present at examinations; absences will be excused for medical reasons that are verified by a signed note from a licensed physician. Unless informed otherwise by the instructor, all exams are closed book/notebooks. All electronic devices (except those medically necessary) must be turned off and put away during the examination. Exam materials may not be removed from the room during in-class exams. In some cases, "take-home" questions may be included. Questions will be distributed at the time of the associated exam, should be completed without assistance from any person, and must be returned on or before the deadline set by the lecturer or course director.

Grading Criteria:
The overall course grade is based on the average for the 3 exams (including take-home questions); each lecture usually provides 10 points of material per exam. Letter grades (including + and -) are assigned based on this average and depend in part on your performance as compared to the overall class. In general, an average score below 65% will receive a C or lower. Letter grades are not assigned for the individual exams.

Academic Integrity and Plagiarism

Academic Integrity at Penn State is defined by Faculty Senate Policy 49-20 as “the pursuit of scholarly activity in an open, honest and responsible manner”. The University's Code of Conduct states that “all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others”. Academic dishonesty (including, but not limited to cheating, plagiarism, or falsification of information) will not be tolerated and can result in academic or disciplinary sanctions such as a failing (F) grade in the course.

For more information on plagiarism, see
<http://tlt.its.psu.edu/suggestions/cyberplag/cyberplagstudent.html>

The instructors reserve the right to use Turnitin.com, a plagiarism prevention tool subscribed to by The Pennsylvania State University, to exam any document submitted by a student in this course.

Statement on Remediation

The basis for grades, as stated in [Senate Policy 47-20](#), is "...the instructor's judgment of the student's scholastic achievement..." Occasionally, a disagreement arises in the assignment of a grade. A student who wishes to question or challenge the grade assigned in a course must first discuss grading practices and assignments with the instructor. It is expected that the student and instructor will try to eliminate any misunderstandings and will attempt to work out any disagreements over grades.

On the rare occasion that a student and instructor fail to resolve the grade dispute through informal means, the student may request that the head of the academic program offering the course act as a mediator. If this mediation does not resolve the dispute, the student who is a graduate student may request further mediation from the associate dean for graduate studies.

[For more information, see: <http://www.psu.edu/dept/oue/aappm/G-10.html>]

Educator's Code of Conduct

The Penn State Milton S. Hershey Medical Center and Penn State College of Medicine are dedicated to developing and maintaining a strong commitment to ethical teaching practices at all levels of the education process. The foundation for this Educator's Code of Conduct is provided by the Penn State University Graduate School Statement on Teaching Ethics (1). The development of this Graduate School statement was based on a special issue of the journal, *New Directions for Teaching and Learning*. In this special issue, entitled *Ethical Dimensions of College and University Teaching: Understanding and Honoring the Special Relationship between Teachers and Students* (2), several authors provided theoretical and practical guidelines for honing ethical college teaching skills. Some of the authors' recommendations have been used to formulate the Educator's Code of Conduct provided herein. Some of these recommendations were modified to specifically fit the needs of both educators and students at the Hershey Medical Center and the Penn State College of Medicine. Both the Unified Campus Commitment to Excellence of the Hershey Medical Center and Penn State College of Medicine (3) and the Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM (4) were also consulted in preparing this Educator's Code of Conduct.

Four Norms to Govern Teaching

Honesty

Honesty and integrity must be practiced during all aspects of the education process.

Promise-Keeping

Promise keeping requires the educator to fulfill the "promises" made at the beginning of the semester or any other learning activity. Syllabi, assignments, grading principles, and class and office hour schedules each involve promises that are made to students that must be adhered to under normal circumstances.

Respect for Persons

The educator must approach the learner with personal respect. In addition, the educator ought to encourage mutual respect among students. In particular, respect for race, religion, sexual orientation, disability gender, age, marital status, cultural differences, and political conviction should be supported and encouraged in all aspects of the educational process. Additionally, educators ought to show respect and common courtesy for students both during interpersonal interactions and in responding promptly to students' need for guidance and feedback. An environment free from harassment and discrimination, verbal abuse, physical violence, and intimidation in any form must also be provided for all learning activities.

Fairness

Recognizing the inherent subjectivity involved in grading, an educator ought to ensure that their grading practices are as objective as possible by creating and adhering to unambiguous criteria.

Principles of Ethical College and University Teaching

Content Competence

An educator maintains a high level of subject matter knowledge and ensures that the content of the educational experience is current, accurate, representative, and appropriate to the position of the learning experience within the students' program of study. The educator must be capable of approaching each learner with a commitment to meeting his or her educational needs.

Pedagogical Competence

A pedagogically competent educator communicates the objectives of the educational experience to students, is aware of alternative instructional methods or strategies, and selects methods of instruction that are effective in helping students to achieve the course objectives.

Dealing with Sensitive Topics

Topics that students are likely to find sensitive or discomfoting are dealt with in an open, honest, and positive way.

Student Development

The overriding responsibility of the educator is to contribute to the intellectual development of the student, at least in the context of the educator's own area of expertise, and to avoid actions such as exploitation and discrimination that detract from student development.

Dual Relationship with Students

To avoid conflict of interest, an educator does not enter into dual-role relationships with students that are likely to detract from student development or lead to actual or perceived favoritism on the part of the educator. The establishment of a romantic/sexual relationship between an educator and a student should be reported to the immediate supervisor of the educator. Such relationships should be dealt with consistent with Penn State Administrative Policy AD41 — Sexual Harassment (5).

Student Confidentiality

Student grades, letters of evaluation, attendance records, and private communications are treated as confidential materials and are released only with student consent, for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to the student or to others.

Patient Privacy and Confidentiality

Educators who utilize patient information as part of any educational experience must follow patient privacy and confidentiality guidelines as outlined by the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Respect for Colleagues

An educator respects the dignity of his or her colleagues and works cooperatively with colleagues in the interest of fostering student development.

Valid Assessment of Students

An educator is responsible for taking adequate steps to ensure that the assessment of a student's performance is valid, open, fair, and congruent with the course/educational experience objectives. An educator must be aware that such assessments are important in students' lives and in the development of their careers.

Respect for Institution and Profession

In the interest of student development, an educator is aware of and respects the educational goals, policies, and standards of the institution in which he or she teaches and the profession which he or she represents.

Citing Sources of Educational Material

An educator acknowledges and documents, as appropriate, the sources of information and other materials used for teaching.

Violations of the Educator's Code of Conduct

Should a learner experience conduct that is inconsistent with the Educator's Code of Conduct, he/she is encouraged to first address the issue with either the educator responsible for the inconsistency or the director of the course in which the educator teaches. Should this attempt to resolve the problem fail, or if the nature of the inconsistency is such that the learner does not feel comfortable addressing the issue with either the educator or the course director, the student may consult other individuals. These individuals may include but are not limited to: faculty advisor, student ombudsman, departmental chair, the Vice Dean for Educational Affairs, and the Vice Dean for Faculty and Administrative Affairs. The decision of who to contact may be dependent on the educational program of the learner and/or type of violation that was encountered.

References:

- (1) <http://www.gradsch.psu.edu/research/ethics.html#teaching>)
- (2) <http://cte.uncwil.edu/et/br030697.htm>
- (3) Unified Campus Commitment to Excellence of the Penn State Milton S. Hershey Medical Center and College of Medicine; 05/11/01
- (4) Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM; Effective Date October, 2001
- (5) <http://guru.psu.edu/POLICIES/Ad41.html>

Developed by the Unified Campus Academic Team Endorsed by Teams Council — May 21, 2003

Course Schedule

Course Title:		Cell and Systems Biol	Course Designation:	BMS 502 Fall 2008	
Course Directors:		Dr. Pat McLaughlin (pxm9@psu.edu) & Dr. Hank Donahue (hdonahue@psu.edu)			
Time :	10 am - 11:00 am	Days:	M W Th (unless otherwise noted)	Location:	C1845 usually
Date	Lecture #	Instructor Last, first	Instruction Type (Lecture or lab)	Projected Lecture Topic - This list is an approximate guide to lecture topics. Titles and content are subject to change	
08/25 M	1	Grigoryev, S	Lecture	Cell Organelles	
08/27 W	2	"	Lecture	Nuclear Organization and Transport	
08/28 Th	3	"	Lecture	Chromatin and Chromosome Structure	
09/3 W	4	Yun, J	Lecture	Cell Membranes	
09/4 Th	5	"	Lecture	Membrane Rafts	
09/8 M	6	Brown, R	Lecture	Vesicle Trafficking and Endocytosis	
09/10 W	7	"	Lecture	Vesicle Trafficking: Endoplasmic Reticulum	
09/11 Th	8	"	Lecture	Cytoskeleton I - Tubulin	
09/15 M	9	"	Lecture	Cytoskeleton II - Actin	
09/17 W LR-C	10	"	Lecture	Molecular Motors	
09/18 Th		Grigoryev, Yun, Brown	Review		
09/22 M C1845		EXAM	Exam	EXAM I 1:00 – 5:00 pm C1845	
09/24 W	11	Ropson, I	Lecture	Protein Data Bank: Basic Molecular Modeling	
09/25 Th	12	"	Lecture	Protein Folding	
09/29 M	13	"	Lecture	Chaperones on a Molecular Level	
10/1 W	14	"	Lecture	Protein Modification & Function	
10/2 Th C3621	15	Ritty, T	Lecture	Cell Junctions	
10/6 M	16	"	Lecture	Cell Adhesion Molecules	
10/8 W	17	"	Lecture	Extracellular Matrix Proteins	
10/13 M	18	Milner, R	Lecture	Principles of Vertebrate Development	
10/14 T 9-10am	19	"	Lecture	Early Development in a Simple System	
10/15 W	20	"	Lecture	Axis Specification in Drosophila	
10/16 Th	21	"	Lecture	Early Development in Mammals	
10/20 M	22	"	Lecture	Limb Development	
10/22 W	23	McLaughlin, P	Lecture	Histological Methods and Microscopy	
10/23 Th	24	"	Lecture	Histology: Epithelium, Connective Tissue	
10/27 M		Ropson, Milner, Ritty, McL	REVIEW		
10/29 W LR-C		EXAM	EXAM	EXAM II 1:15 pm – 5:15 pm LR-C	
10/30 Th	25	McLaughlin, P	Lecture	Histology: Cartilage, Bone, Blood	
11/3 M	26	"	Lecture	Histology: Muscle Tissues	
11/5 W	27	"	Lecture	Histology: Nervous System	
11/6 Th	28	Milner, R.	Lecture	Introduction to the Nervous System	
11/10 M	29	"	Lecture	The Synapse	
11/12 W	30	"	Lecture	Neurotransmission	
11/13 Th	31	"	Lecture	Mammalian Nervous System	
11/17 M	32	"	Lecture	Plasticity	
11/19 W	33	Milner, R.	Lecture	Diseases of the Nervous System	
11/20 Th	34	Grigson, S.	Lecture	Integrated Nervous System: Addiction	
11/24 – 11/28		THANKSGIVING	NO CLASSES		
12/3 W	35	Karpa, K	Lecture	Using Drugs: Absorption	
12/4 Th	36	"	Lecture	Biotransformation & Elimination	
12/5 F 8-9am	37	"	Lecture	Pharmacokinetics: Principles	
12/8 M	38	Christensen, N	Lecture	Integrating Systems: Immune I	
12/9 W	39	"	Lecture	Integrating Systems: Immune II	
12/11 Th			Review	Review	
12/15 M LR-C			EXAM	EXAM III 9 am -1 pm LRC	

Contact Information

Faculty / Title	Department	Phone #	e-mail	Office Room #	Mail Code
Hank Donahue, Ph.D. Co-Director	Orthopaedics and Rehabilitation	4819	hdonahue@psu.edu	C3804F	H089
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Pat McLaughlin, D.Ed. Co-Director	Neural & Behavioral Science	6414	pxm9@psu.edu	C3727	H109
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Sergei Grigoryev, Ph.D.	Biochemistry and Molecular Biology	8588	sag17@psu.edu	C5739	H171
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Jong Yun, Ph.D.	Pharmacology	1508	jky1@psu.edu	C7706D	H059
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
C. Randell Brown, Ph.D.	Cellular & Molecular Physiology	0859	crb13@psu.edu	C4711	H166
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Ira Ropson, Ph.D.	Biochemistry and Molecular Biology	4064	iropson@psu.edu	C5744B	H171
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Timothy Ritty Ph.D.	Orthopaedics and Rehabilitation	4988	tritty@psu.edu	C3850	H089
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Robert Milner, Ph.D.	Neural & Behavioral Science	6407	rmilner@psu.edu	C3802C	H109
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<i>Contact by email first.</i>					
Sue Grigson, Ph.D.	Neural & Behavioral Science	5772	psg6@psu.edu	C1716	H181
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Kelly Karpa, PhD	Pharmacology	1621	Kjd36@psu.edu	HCAR 3027	H078
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Neil Christensen PhD	Gittlen Cancer Research Institute	6185	Ncd1@psu.edu	C7800	H059
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
Kathy Simon, Adm. Asst.	Graduate Student Affairs	8892	ksimon@psu.edu	C1712	H170
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
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