PENNSTATE
Milton S. Hershey Medical Center
College of Medicine

General Information							
Course Title:	Genetics of Model Organisms: Molecular Genetic Analysis of Signaling Pathways		**Course Designation:** GENET 582			**Credits:** 1	
Semester:	Spring		**Year:**	2008			
Department:	Genetics						
Directors:	Dr. Ralph L. Keil Dr. Lisa M. Shantz	**Phone #**	8595 1562	**Email:**	rkeil@psu.edu lshantz@psu.edu	**Office Rm #**	C5715 C4731
Time :	8 – 9 am	**Days:**	M, W, F unless noted		**Location:**	YYY	

Course Information

Description and/or Overview:

This course stresses the principles that make molecular genetic analysis a critical tool for identifying and characterizing components and functions of biological pathways. The specific focus will be signaling pathways.

Goals and/or Objectives:

To gain in-depth knowledge of the key concepts of genetic analysis. Students will develop the abilities to critically read primary scientific literature, to design experiments, and to interpret data.

Pre-requisites:

Undergraduate courses in genetics and/or cell and molecular biology are highly recommended. Successful completion of BMS 501, BMS 502, and BMS 503 is required.

Requirements; Course-specific Policies and Expectations:

Exams and/or take-home assignments will be used to assess acquisition of an understanding of the genetic principles and information presented in the course. These tools will be designed to evaluate the ability of the student to apply the acquired knowledge to analyze problems, formulate hypotheses, design appropriate experiments to test hypotheses, and interpret experimental data.

Required Texts and Resources:

There is no required text although an advanced undergraduate genetics text will be helpful. Required readings from the primary literature will be assigned.

Electronic Links:

ANGEL https://cms.psu.edu/frames.aspx

Attendance Policy:

Attendance is highly recommended but is the student's responsibility. Arrangements should be made with the appropriate instructor in cases of unavoidable absence. Attendance is required at the times scheduled for exams.

Examination Policy:

Assignments and exams are dispersed throughout the course and are scheduled independent of the lecture times.

Grading Criteria:

Final letter grades are assigned based on grades from all assignments. Usually, the mean of the grade distribution is a B.

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, 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 examine 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 Student*s (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 and 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 subjectively 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 discomforting 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:	Genetics of Model Organisms: Molecular Genetic Analysis of Signaling Pathways	**Course Designation**	GENET 582
Course Directors:	**Ralph L. Keil and Lisa M. Shantz**		
Time :	**8 – 9 am**	**Days:**	**M, W, F unless indicated otherwise**
Location:	**YYY**		

Date	Lecture #	Instructor	Instruction Type	Projected Lecture Topic - This list is an approximate guide to lecture topics. Titles and content are subject to change
M 1/14/08	1	Keil, Ralph L.	Lecture	In the beginning: isolation of mutants
W 1/16/08	2	Keil, Ralph L.	Lecture	What next? Characterization of mutants
F 1/18/08	3	Keil, Ralph L.	Lecture	Genetics and DNA: molecular genetic analysis I
M 1/21/08		Martin Luther King Day	No Class	
T 1/22/08	4	Keil, Ralph L.	Lecture	Genetics and DNA: molecular genetic analysis II
W 1/23/08	5	Keil, Ralph L.	Lecture	Genetics and DNA: genome analysis
F 1/25/08	6	Keil, Ralph L.	Lecture	Expanding the pathway: identifying additional components I
M 1/28/08	7	Keil, Ralph L.	Lecture	Expanding the pathway: identifying additional components II
W 1/30/08	8	Keil, Ralph L.	Lecture	Genomics and microarrays
F 2/1/08	9	Shantz, Lisa	Lecture	Using mouse models to dissect mTOR-dependent pathways I
M 2/4/08	10	Shantz, Lisa	Lecture	Using mouse models to dissect mTOR-dependent pathways II
W 2/6/08	11	Shantz, Lisa	Lecture	mTOR in diabetes/obesity models I
F 2/8/08	12	Shantz, Lisa	Lecture	mTOR in diabetes/obesity models II
M 2/11/08	13	Shantz, Lisa	Lecture	mTOR in cancer models I
W 2/13/08	14	Shantz, Lisa	Lecture	mTOR in cancer models II
F 2/15/08	15	Keil, Ralph L & Shantz, Lisa	EXAM	

Contact Information

Faculty / Title	Department	Phone #	EMAIL	Office Room #	Mail Code
Kathy Simon, Adm. Asst.	Graduate Student Affairs	6608	ksimon@psu.edu	1712	H170
Comments: (i.e. preferred method of contact, contact hrs.)	*Student Walk In Days – Tuesday & Thursday*				
Dr. Ralph L. Keil	Biochemistry & Molecular Biology	8595	rkeil@psu.edu	C5715	H171
Comments: (i.e. preferred method of contact, contact hrs.)	*arrange appointments after class or by e-mail or phone*				
Dr. Lisa M. Shantz	Cellular & Molecular Physiology	1562	lshantz@psu.edu	C4731	H166
Comments: (i.e. preferred method of contact, contact hrs.)	*arrange appointments after class or by e-mail or phone*				