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<th>Lecture</th>
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| 1       | Aug 20   | OVERVIEW & INTRO  
--Data Processing & intro to phosphorylation  
Reading: CSP: Chapter 1, 2.6 & 8 (Pages 11-24, pp 44-55, pp283-287) |
| 2       | Aug 22   | Chemical Inhibitors of Kinases                                       |
| 3       | Aug 27   | Ubiquitination & UBLs  
Reading CSP: Chapter 2.8 to 2.8.4 (page 57-page 62)  
Sumo-targeted Ubiquitin-ligases |
| 4       | Aug 29   | Introduction to G-proteins                                           |
| 5       | Sept 3   | Regulation of small G-proteins by phosphorylation                    |
| 6       | Sept 5   | G-protein coupled receptors & vision  
Reading: CSP Chapter 2.1 to 2.5 (pages 25 – page 57)  
CSP: Chapter 8.6 to 8.7.1) (page 313-317.) |
| 7       | Sept 10  | Trimeric G proteins & taste                                           |
| 8       | Sept 12  | QUIZ#1—10 pts  
Other Receptors-  
MAP kinases in pheromone response  
Reading CSP: Chapter 2.12 to 2.14 (pages 70 –77) |
| 9       | Sept 17  | MAP kinase cascade: Scaffold proteins  
Reading CSP: Chapter 3.2 to 3.5.1 (pages 82--115) |
| 10      | Sept 19  | --BMB-GSA symposium –or--  
MAP kinase pathways & cell cycle regulation  
Reading CSP: chapter 11 to 11.7 (page 389-408) |
| 11      | Sept 24  | Two-component phospho relays and quorum sensing                      |
| 12      | Sept 26  | QUIZ#2- 15 points  
Quorem Sensing & Cholerae                                             |
| 13      | Oct 1    | Phosphinositol phosphates-Phospholipase C                             |
| 14      | Oct 3    | PIP3 kinase, PTEN & AKT  
Reading: CSP chapter 4.4.4 to 4.4.5 (pages 150-168)  
Reading CSP Chapter 4.6.6 (pages 175- 181) |
<p>| 15      | Oct 8    | EXAM#1                                                               |
| 16      | Oct 10   | PTEN regulation: Phosphatase and cancer                               |</p>
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<tr>
<th>Date</th>
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<tr>
<td>17</td>
<td>Oct 15 Tues</td>
<td><em>Signals that regulate nuclear transport</em></td>
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| 18   | Oct 17 Thurs | *mTOR signaling*  
Reading CSP: chapter 9.1 to 9.3.1 (page 325-330)  
Reading: CSP chapter 9.4 – 9.4.3 (pages 335-344) |
| 19   | Oct 22 Tues | *Adjusting cell growth to supply: mTOR signaling & autophagy* |
| 20   | Oct 24 Thurs | *Autophagy & PKA* |
| 21   | Oct 29 Tues | *Glycogen Synthase Kinase*  
Reading: CSP chapter 9.4.4 (pages 345-350)  
CSP chapter 5.9.2 (pages 213-215) |
| 22   | Oct 31 Thurs | QUIZ#3—35 pts  
*GSK- Tau & Alzheimer’s Tyrosine Kinases*  
Reading: CSP chapter 7.2. to 7.2.2 (pages 258 –265) |
| 23   | Nov 5 Tues | *Signal Transduction by Proteolysis* —Alzheimer’s disease  
Reading: Chapter 13 to 13.1.4 (page 455-464) |
| 24   | Nov 7 Thurs | *A struggle between life and death*  
*Apoptosis, a program for cell death—Part 1—receptor mediated cell death.*  
Reading: Chapter 13.2 to 13.2.3 (pages 464-470)  
Chapter from Pollard |
| 25   | Nov 12 Tues | QUIZ #4—40 pts  
*Apoptosis, a program for cell death—Part 2. Mitochondrial-mediated cell death*  
Reading: Chapter 13.2.4 (pages 470-476) |
| 26   | Nov 14 Thurs | *Cell cycle I—cyclin dependent kinases, Cyclins & Wee kinase*  
**EXAM #2** |
|      | Nov 28 Thurs | Fall Break—Thanksgiving Day —Enjoy your turkey!! |
| 28   | Dec 3 Tues | *Cell cycle II—Regulation of cyclin dependent kinases*  
Reading: CSP  
Chapter 12.13 to 12.14 (pages 445-447) |
| 29   | Dec 5 Thurs | *P53: apoptosis, and Cancer*  
Reading: *p53 and cancer*  
**OR**  
*The small G-protein Ras*  
Reading CSP Chapter 10 to 10.1.4 (page 353-363)  
**OR**  
*Signal transduction by Cell adhesion molecules*  
*The adenomatous polyposis coli protein*  
Reading: CSP chapter 7.2.3 to 7.3.2 (pages 265-273) |
REQUIRED TEXT:
Cellular Signal Processing: An Introduction to the Molecular Mechanisms of Signal Transduction. By Friedrich Marks, Ursula Klingmüller and Karin Müller-Decker. Published by Garland Science, Taylor and Francis Group. Copyright 2009 Chapters will be assigned for each lecture.

RECOMMENDED AND ASSIGNED READINGS
Both primary scientific literature and review articles will also be assigned as reading. References will be provided for each lecture topic. Often, references for each lecture topic will be provided on the powerpoint slides/handouts. These may be helpful to review, if you have questions. Each reading list will contain articles discussed in detail in class, as well as those useful for background or further reading. The main research paper discussed in class should be read before class.

Class Handouts will be posted on the D2L website the evening before the lecture, usually about 9pm. These should be brought to class.

COURSE GRADE:
Exams: All are open note, open book.
Quizzes are CLOSED note, CLOSED book.
There will be four quizzes (25% total). AND three examinations: two hourlie exams (25% each) and a comprehensive final (20%). Class Participation will constitute 5% of the final grade. The weighted average of the four scores will be used to compute the final grade. The examinations will cover the lecture material and the readings discussed in detail in class. If for any reason you miss an hourly exam, the final will count 45%. All exams will be given in the class periods indicated and graded by the course instructor. If you feel a mistake has been made in grading your exam, then notify the instructor with a written note no later than one week after the exam has been returned. Exam grades will not be changed after this period. No 'make-up' exams will be given.

Class Attendance: If you must miss class for religious holidays, illness, or interviews, please arrange to have the class tape recorded. You should also pick up the notes from a friend in the course. (Simply picking up/downloading the handouts will probably not suffice).

INSTRUCTOR AND COURSE DIRECTOR: Rita Miller, Ph.D.
Office: 248A Noble Research Center Phone: 744-7732 Email: rita.miller@okstate.edu
Office hours: Tues. 11:00am to 12:00 pm & Thurs 11:00 am-12:01pm, noon. You are welcome any other time that is mutually convenient. Please feel free to email me to make an appointment.

Academic Honesty:
Writing assignments will be the original work of the student and exclusively prepared for this class, unless express written and prior permission is granted by the instructor.

Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript (F!), and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627, academicintegrity.okstate.edu.
Academic dishonesty or misconduct is defined in the Oklahoma State University Policy and Procedures Letter 2-0822. You should become familiar with this document as a matter of self-interest.

Disabilities:
If any member of this class feels that he/she has a disability and needs special accommodations of any nature, we will work with you and the Office of Disabled Student Services, 326 Student Union, to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class. Please advise Dr. Miller of such disability and the desired accommodations as early as possible to address your needs in a timely manner.

Oklahoma State University Syllabus Attachment:
We are very concerned about your success as a student at OSU. The information at the following link is provided to answer most often asked by students. [Http://academicaffairs.okstate.edu/current-students/47-syllabus-fall](http://academicaffairs.okstate.edu/current-students/47-syllabus-fall). A copy of this course syllabus and the OSU Syllabus Attachment are posted on the OSU D2L website for this course for your convenience.

**HAVE A GREAT SEMESTER!!**

*Additional and specific information about the course will be provided during the semester.*