COURSE TITLE and NUMBER: Medical Biochemistry BMB 514 (Fall Semester 2015)

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Section Codes for the Course:
301 for CHM-EL;
302 for CHM-GR

Lines of Communication:
(a) Administrative aspects of the Course: contact course director, John J. LaPres
(b) Scientific content pertaining to a specific lecture or topic: contact the instructor teaching that specific portion of the course or your on-site instructor.
(c) Missed exams: Refer to the CHM Preclinical Students Angel website for the “Request for Approval of Absence from Examination or Required Experience” form. Attach completed form and e-mail as an attachment to the appropriate address: CHM-EL students --- absenceEL@msu.edu
CHM-GR students --- absenceGR@msu.edu

Course Web Site: The URL for the Course web site is https://d2l.msu.edu/d2l/

You should pay attention to two MAIN sections at this website:
(1) Course Home – Course-related communication to the class will be made here. You should check for announcements on a daily basis.
(2) Content – Syllabus, Lecture recordings, tutorials (TT), self-study module (SSM), and all other scientific material will be deposited.

Please note that each visit to any section of D2L by an individual student is “tracked” by the computer. Although the instructors of the course will have access to such information, we do not intend to use it.

Office Hours: Students are encouraged: (a) to address questions and suggestions to instructors via the e-mail system; (b) to seek individual consultation with the lecturer or the on-site instructor by appointment throughout the semester; and (c) to attend help sessions.

Help Sessions: (no new material will be presented; attendance optional; neither broadcast nor recording will be made of these question-and-answer sessions)
(a) In EL, Help Sessions are scheduled for the following dates, times, and venues.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Instructor</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, September 4</td>
<td>Noon - 1:00 pm</td>
<td>Wang</td>
<td>A133 Life Sci</td>
</tr>
<tr>
<td>Thursday, September 17</td>
<td>11 am - noon</td>
<td>Wang</td>
<td>A133 Life Sci</td>
</tr>
<tr>
<td>Friday, September 25</td>
<td>11 am – noon</td>
<td>LaPres</td>
<td>A133 Life Sci</td>
</tr>
<tr>
<td>Friday, October 9</td>
<td>10 am – 11:30</td>
<td>LaPres</td>
<td>A133 Life Sci</td>
</tr>
<tr>
<td>Friday, October 22</td>
<td>11 am – noon</td>
<td>Wang</td>
<td>A133 Life Sci</td>
</tr>
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</table>
Course Objectives: This course is intended to present a survey of the major biochemical events that occur in normal cells and tissues. It should provide students with a vocabulary of terms they will encounter in other basic science and clinical courses. It will also supply an understanding of the principal biochemical mechanisms that contribute to homeostasis and the inherent capacity of the individual for the maintenance of health and recovery from disease. Where possible, examples will relate directly to human biology. The normal state will be described; abnormal conditions are considered insofar as they serve to illuminate the normal condition.

Prerequisites: One year of college level organic chemistry.

Course Credit by Waiver Examination: As announced July 2015 via D2L (from the Biochemistry Department to all CHM students beginning in 2015), this waiver examination will be offered on August 27, 2015, 6-8 pm.

Venues: (a) for CHM-EL students: B105 Life Sciences Building
(b) for CHM-GR students: Room 220, Secchia Center

   c) "Medical Physiology: Principles for Clinical Medicine," R.A. Rhoades and D.R. Bell, eds., (Lippincott Williams & Wilkins, 4th edition, 2013). (This is a PSL 534 text.)

Other Instructional Material: In addition to the texts, homework assignments may also be derived from computer-aided instructional (CAI) material. These are available in the CHM Echt Computer Laboratory (A137 Clinical Center) and in the corresponding resource center (3rd Floor Secchia) in GR.

There are four tutorials (TT) that consist of Camtasia recordings posted on the Course website on D2L. An interactive self-study module (SSM), as well as exercises associated with each TT, all provide opportunities to confirm mastery of the material.

There are four clinical cases (CC) that provide excellent examples of the inter-connectedness of several metabolic pathways. Each CC will present data from a real patient, background material to the metabolic problems, and several exercises that will require students to integrate the information learned in lecture sessions. Each CC represents an excellent opportunity to review for the examination shortly following the assignment of the case.

Opportunities to confirm your understanding: You are strongly encouraged to confirm your mastery of the material by working on practice questions in homework problem sets (designated as JW-1, JS-1, JKL, etc.). These are at appropriate places within the course packet (see Lecture schedule, reading assignments, and other homework on course D2L site). Answers to the homework problems are also provided. Homework will not be collected.

All the exams for this course from 2010-2013 can be found at the website, https://bmb.natsci.msu.edu/undergraduate/undergrad-grad-course-descriptions/bmb-514/ (Note: This is distinct from the D2L course website but can be found as a link from the D2L course website). You can use these old exams to gauge the level of the questions to be expected in the course.
**Student Feedback on Instruction/Course:** The faculty of BMB 514 will be monitoring the effectiveness of the instruction throughout the semester and will be responsive to constructive student feedback. Three main mechanisms are available to assess the attainment of instructional objectives: (a) direct student contact with the instructors; (b) the use of “focus groups” and class liaisons; and (c) the use of instructor/course evaluations.

Over the long-term, student feedback via “focus groups” and instructor/course evaluations provides the instructors with invaluable information regarding student perspectives on the performance of the faculty and the quality of the course. The information gained from these evaluations will be used to develop future offerings of biochemistry.

**Evaluation of Student Performance:** The achievement of course objectives will be evaluated on the basis of: (a) two in-class quizzes (Quiz #1 and #2); (b) two “In-Semester” exams (Exam #1 and #II); (c) Two clinical case discussions that contain iClicker based questions, and (c) one comprehensive final examination. Questions will deal with material presented in lectures, in the list of specific instructional objectives (see course pack), in the homework assignments, in the tutorials (TT), self-study module (SSM), and in the clinical case (CC) discussions.

<table>
<thead>
<tr>
<th>EXAM/QUIZ</th>
<th>DATE</th>
<th>SESSIONS</th>
<th># of LECTURES</th>
<th># of POINTS</th>
<th>% of GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz #1</td>
<td>8-Sep</td>
<td>1-6 + TT #1</td>
<td>6 + 1 TT</td>
<td>6</td>
<td>4.1</td>
</tr>
<tr>
<td>Exam #1</td>
<td>18-Sep</td>
<td>1-13 + TT #1-4 CC-A</td>
<td>13 + 4 TT</td>
<td>32</td>
<td>21.9</td>
</tr>
<tr>
<td>Quiz #2</td>
<td>29-Sep</td>
<td>14-20 SSM #1</td>
<td>7 + 1 SSM</td>
<td>6</td>
<td>4.1</td>
</tr>
<tr>
<td>Clinical Case B</td>
<td>7-Oct</td>
<td>29-30</td>
<td>iClicker Session</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Exam #2</td>
<td>12-Oct</td>
<td>14-30 + 1 SSM CC-B</td>
<td>15 + 1 CC + 1 SSM</td>
<td>32</td>
<td>21.9</td>
</tr>
<tr>
<td>Clinical Case C</td>
<td>16-Oct</td>
<td>37-38</td>
<td>iClicker Session</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Final Exam</td>
<td>23-Oct</td>
<td>31-42 + CC-C,D</td>
<td>10 + 1 CC</td>
<td>64 (28 new/36 review)</td>
<td>43.8</td>
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(a) **Quizzes:** Each Quiz will contain 6 questions, to be completed during the first 10 minutes of the (first) class on the date stated, in the lecture venue.

(b) **"In-Semester" Exams:**
Exams #1 and 2 will be held 8 – 9:10 a.m.  
(#1) Friday, 09/18  
(#2) Monday, 10/12.

**Venues:**
(1) CHM-EL: A-133 Life Sciences.  (2) CHM-GR: 120 Secchia Center.

(c) **Final Exam:** The final exam will be held 8 – 10 am on Monday, 10/23. There will be 28 questions specifically covering the last 12 sessions (#31-42) of the course and Clinical Cases C and D. The remaining 36 questions of the final exam will be comprehensive, reviewing the major points of the course.

**Exam venues:** as you reported for “In-Semester” exams.

(d) **Clinical Case Discussions (iClicker sessions):** There will be two 2 hour clinical case discussion sessions involving a series of iClicker question/answer exchanges. To receive credit for these sessions, the student must participate in no fewer than 80% of the iClicker questions presented.
**Excused Absences and Make-Up Exams/Quizzes:** Make-up exams/quizzes will be given only to students with excused absences, obtained from the respective information listed on page 1 under **Lines of Communication**. Otherwise, there will be no make-up exams offered during the semester. Make-up exams/quizzes (based on excused absences) should be arranged with the course assistants.

**Grading:** A total of 146 points can be derived from the two quizzes, two in-semester exams, and final exam. Course grades will be assigned on the basis of the overall examination scores, delineated below.

**CHM**
- P $\geq$ 110 points (75%)
- CP 102 - 109 (70-74%)
- N $<$ 102 points (70%)

Students failing to earn 70% overall will receive an N grade that remains on their college record. They will be required to remediate in accordance with the policy detailed below.

CHM students that receive the CP grade will also need to remediate by examination in order to change the CP to a CP/P grade.

**Remediation:** The remediation policy can be found in the student handbook at the following URLs. CHM---[http://humanmedicine.msu.edu/medical_education/assets/preclinical_handbook_8_13.pdf](http://humanmedicine.msu.edu/medical_education/assets/preclinical_handbook_8_13.pdf)

Consistent with the policies, the remediation opportunities for BMB 514 are as follows:

1. Remediation examination: Thursday, January 2nd, 2016, 8-10 am; 60 questions, comprehensive for the course; passing is 75%. Venues to be arranged and announced at a later date.

2. Remediation examination: Friday, March 7th, 2016, (time and venue to be arranged); 60 questions, comprehensive for the course; passing is 75%.

All CHM students earning a CP or N are required to take the earliest remediation exam offering unless the later date is authorized by college administrators or the student receives an excused absence (according to college policy) for the earlier exam.

Students failing either remediation exam must retake BMB 514. However, they are NOT eligible for the waiver exam for BMB 514 when they re-enroll in the course.
Educational Competencies
S.C.R.I.P.T.

• SERVICE/No ACGME-related competency
  o Participates in the provision of beneficial services within the community
  o Demonstrates preparation and planning to provide services which respond to community need
  o Demonstrates reflection on their participation in service activities

• CARE OF PATIENTS/Patient Care and Interpersonal and Communication Skills
  o Demonstrates kindness and compassion to patients and their families
  o Collects complete and accurate patient data
  o Synthesizes patient and laboratory data to formulate reasonable assessments and plans
  o Demonstrates the incorporation of patient values into illness assessment and care plans
  o Communicates effectively in writing and orally
  o Effectively counsels and educates patients and their families

• RATIONALITY/Practice-Based Learning and Improvement
  o Identifies personal strengths and weaknesses and develops ongoing personal learning plans
  o Demonstrates receptiveness to faculty and peer/colleague feedback as a means of facilitating personal and professional improvement
  o Locates, appraises and assimilates evidence from scientific studies related to their patients’ health problems

• INTEGRATION/Systems-Based Practice
  o Demonstrates awareness of cost and access issues in the formulation of patient care plans
  o Demonstrates respect for all members of the health care team
  o Demonstrates understanding of and contributes to a culture of safety
  o Demonstrates knowledge of differing types of medical practice and delivery systems and their implications for controlling health care allocation and cost
  o Demonstrates knowledge of how social and economic systems in which people live impact on health, delivery of health care, and well being.

• PROFESSIONALISM/Professionalism
  o Demonstrates receptiveness to feedback from faculty/peers/colleagues/team members
  o Contributes actively to group/team process
  o Demonstrates respect to patients, colleagues and team members
  o Fulfills responsibilities in courses and on clinical rotations
  o Takes responsibility for patient outcomes and is accountable to the team, the system of delivery, the patient, and the greater public.

• TRANSFORMATION/Medical Knowledge
  o Applies essential basic, social, clinical science and systems knowledge in the care of patients
  o Creates new knowledge through research

Participates in lifelong teaching and learning with peers, trainees, and patients