Advanced Nutrition Laboratory  
NUTR 302L (Classroom: PSFA 416)  
Fall 2016

Instructor: Dina Metti, MS  
Class Time: T TH 12:30-15:10  
Office: PSFA 416  
Office hours: By appointment only  
Email: dmetti@mail.sdsu.edu  
Prerequisites: NUTR 201, BIOL 336, Biochemistry (CHEM 160)

Text and Materials:
- Hong, MY, Advanced Nutrition Laboratory Manual. (available at KB Books)  
- Laboratory notebook  
- Lab Fee -- Must be paid within 1 week of start of class or automatic drop. Please bring your receipt or photocopy by Sept. 6.

Course Description:
This is a two-component course including a lecture and a lab taught and evaluated separately. The lab is designed to demonstrate theories presented in lectures by experimental application and to apply methodologies used to assess nutritional status.

Course Objectives:
1. To gain an understanding of various methods of nutritional assessment and interpretation and application in a practical setting.  
2. To obtain an understanding of the nutrition care process (NCP) and its application.  
3. To become familiar with the processes involved in planning and conducting research in nutritional science.  
4. To expand ability to review literature and apply research findings through technical writing.

Course Evaluation:
Case Studies - 100 pts  
Research Proposal -- 50 pts  
Lab Exam I -- 100 pts  
Lab Exam II -- 100 pts  
Manuscript -- 100 pts  
Lab notebook -- 25 pts  
Participation and Performance -- 25 pts  
Total Possible Points -- 500 pts

*Case Studies will not be accepted for labs conducted when absent. Additionally, you will lose 1 point/day for the NCP note due that day. You are expected to attend every lab, for the entire lab period. There will be no make-up exams, unless proof of severe circumstances is presented.

Grading Scale:
- A = 92.5-100  
- A- = 89.5-92.4  
- B+ = 87.5-89.4  
- B = 82.5-87.4  
- B- = 79.5-82.4  
- C+ = 77.5-79.4  
- C = 72.5-77.4  
- C- = 69.5-72.4  
- D+ = 67.5-69.4  
- D = 62.5-67.4  
- D- = 59.5-62.4  
- F = below 59.5

Formation of Lab Groups:
Lab groups will be formed on the first or second day of lab. Lab groups will be formed with member’s skills and knowledge in mind. Things to consider in forming the lab groups: lab expertise; interest in research; interest in performing the anthropometry lab; math skills; organizational skills; and others.

Lab Notebook:
The lab notebook will be checked during the semester. Date, title, objective, methods, results and discussion should be included. The lab notebook will be collected at the end of the semester to be fully graded.

Case Studies/NCP:
Each group will perform the experiments indicated on the Laboratory Schedule. The case study methods must be prepared (by the individual students) for the experiment prior to class. Completed case studies from the previous lab must be turned in at the beginning of the next class. In most cases, there will be sufficient time to complete the lab calculations and case studies on the day the experiment is conducted if you use your time wisely after completing tests. See the remainder of the syllabus in the lab manual for more details on completion and evaluation of the case studies. Late submission of case studies will result in a penalty of 1 pt/day.

Proposal Presentation:
Each group will present their research proposal to the entire class. The presentation should be professional and should be presented using PowerPoint. Include a comprehensive discussion of background literature, your objectives, the significance of the study, hypotheses, and methods for completing the study. Presentation should be between 10-15 minutes in length. Final version of the PowerPoint should be emailed before the start of class the day scheduled to present.

Research Proposal:
The research proposal is a more thorough version of the proposal presentation, and it will be on the same topic. It should include all the components mentioned above and additionally a budget and references section. The proposal should have at least 5 peer-reviewed journal articles as references, and should be presented in JAND format. See lab manual for an example. Proposals turned in late will have a penalty of 5 pts/day.

Lab Exams:
The laboratory exams will consist of assessment of your knowledge of the theory taught in the course, experiment procedures, data analysis, planning experiment, lab safety and class project. All areas covered in the lab are potential sources of questions.

Manuscript:
Reports for the class project will be completed and turned in by each student. The paper must be type written and double-spaced. The proposal should have at least 5 peer-reviewed journal articles as references, and should be presented in JAND format. Additional non-peer-reviewed references may be used sparingly. The manuscript will include title page, abstract, introduction, methods, results, discussion, references, and an appendix (tables and/or figures). Late submission of papers will result in a penalty of 10 pts/day. Make sure your work is original.

Participation and Performance:
You will be evaluated on the basis of your participation and performance. It is your responsibility to be prepared, observe all safety procedures and lab guidelines, and perform all techniques skillfully. You are expected to attend for the entire lab period. Areas that will be considered in assigning points earned include preparation, participation, skill, initiative, ability to read, interpret, and follow instructions, and observance of safety procedures. Submission of reflection statement is suggested for your portfolio.
Please turn off all cell phones and alarms. No text messaging. Lab coats and closed toed shoes are to be worn on days of experiments.

**School Learning Goals and Objectives**

NUTR302L will provide multiple learning opportunities to support the following goals and objectives of the School of Exercise and Nutritional Sciences:

**Learning Goal 1. Demonstrate core critical thinking skills and dispositions to ask and answer questions relevant to exercise and nutritional science**

*Objective 1.1:* Critically evaluate published research in the discipline.

*Objective 1.2:* Evaluate alternative solutions to a discipline-based problem.

*Objective 1.4:* Critically evaluate current trends and practices using disciplinary knowledge.

*Objective 1.5:* Actively seek out discipline-based questions as opportunities to apply core critical thinking skills.

**Learning Goal 2: Demonstrate effective oral, written, and other interpersonal skills to help communicate knowledge and promote health and wellbeing in diverse communities.**

*Objective 2.1:* Use effective technical writing skills to communicate information about exercise and nutritional science.

*Objective 2.2:* Use effective oral presentation skills to present information to peers and other professionals.

**Learning Goal 3. Demonstrate understanding of scientific concepts, principles, and methods used in the study of exercise and nutritional science**

*Objective 3.2:* Identify the steps in the scientific method of research.

*Objective 3.3:* Select and apply appropriate methods to maximize internal and external validity and reduce the plausibility of alternative explanations.

*Objective 3.5:* Design a research study and collect, analyze, and evaluate findings in relation to a proposed hypothesis.

**Learning Goal 4. Use an array of technologies to support inquiry and professional practice**

*Objective 4.1:* Use the internet and e-mail to communicate with others and find valid information.

*Objective 4.2:* Use various technology instrumentations to measure phenomena of interest.

*Objective 4.3:* Use software programs appropriate to discipline to organize, analyze and interpret findings.

*Objective 4.4:* Use presentation software to report project findings.

**Learning Goal 5. Demonstrate ethical decision making, cultural competency, and civic responsibility when applying knowledge of exercise and nutritional science.**

*Objective 5.1:* Identify and explain components of ethical decision making, cultural competency and civic responsibility applied to exercise and nutritional science.

*Objective 5.2:* Use non-discriminatory/inclusive language when working with peers and clients in on-campus and off-campus settings.

*Objective 5.3:* Design an exercise/nutrition prescription or lesson plan that considers cultural differences that may influence implementation.

**Learning Goal 7. Use the principles of assessment to evaluate a variety of measurement tools in exercise and nutritional science.**

*Objective 7.1:* Explain the various kinds of validity evidence necessary to determine the quality of objective and subjective measures used in exercise and nutritional science.

*Objective 7.3:* Evaluate the responsiveness, sensitivity, and specificity of measurement devices used in exercise and nutritional science.

*Objective 7.4:* Collect data to examine the reliability or objectivity of common measurement tools in exercise and nutritional science.

*Objective 7.5:* Evaluate the feasibility of different measurement tools in various settings.

**Students with disabilities**

If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. Please request that the Counselor for Students with Disabilities send a letter verifying your disability. You will receive the appropriate accommodations from the day that you provide me with the necessary documentation. Course accommodations will not be applied retroactively (e.g., after an examination).

**Academic Integrity**

All work submitted in this course must be your own and produced exclusively for this course. The use of sources (ideas, quotations, and paraphrases) must be properly acknowledged and documented. If in doubt, you are encouraged to review guidelines for the proper use of sources (e.g., [http://www.hamilton.edu/academics/resource/wc/usingsources.html](http://www.hamilton.edu/academics/resource/wc/usingsources.html)), as well as the University guidelines (including definition and policy) regarding cheating and plagiarism [http://its.sdsu.edu/resources/plagiarism/Plagiarism_AcadSen.pdf](http://its.sdsu.edu/resources/plagiarism/Plagiarism_AcadSen.pdf)
**NUTR 302 Lab FALL 2016**
Tentative Lab Schedule: All dates and assignments are subject to change.

<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Lecture Topic and Lab Activity</th>
<th>Assignment Due</th>
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<tbody>
<tr>
<td>8/30</td>
<td>1</td>
<td>Course Introduction, Lab Group Formation</td>
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<tr>
<td>9/1</td>
<td>1</td>
<td>Nutritional Assessment</td>
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<td>9/6</td>
<td>2</td>
<td>Research /IRB Introduction</td>
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<td>9/8</td>
<td>2</td>
<td>Lab Safety, Bio Safety, Pipetting Practice</td>
<td>Lab Fee Due</td>
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<tr>
<td>9/13</td>
<td>3</td>
<td>Manuscript Proposal Development, Preparation-Select Topics</td>
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<td>9/15</td>
<td>3</td>
<td>Intro to NCP Notes, Albumin Lab</td>
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<td>9/20</td>
<td>4</td>
<td>Glucose Lab</td>
<td>Albumin NCP</td>
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<td>9/22</td>
<td>4</td>
<td>Hemoglobin/Hematocrit Lab</td>
<td>Glucose NCP</td>
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<td>9/27</td>
<td>5</td>
<td>Triglyceride Lab, Exam Review</td>
<td>Hgb/Hct NCP</td>
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<td>9/29</td>
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<td>Diet Lab</td>
<td>TG NCP</td>
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<td>LAB EXAM I</td>
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<td>10/6</td>
<td>6</td>
<td>Cholesterol Lab</td>
<td>Diet NCP</td>
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<td>10/11</td>
<td>7</td>
<td>Research Proposal Presentation</td>
<td>Research Proposal E-mail PowerPoint</td>
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<td>10/13</td>
<td>7</td>
<td>HDL-Cholesterol Lab/LDL-Cholesterol calculation</td>
<td>Cholesterol NCP</td>
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<td>10/18</td>
<td>8</td>
<td>Calcium Lab</td>
<td>HDL-LDL NCP</td>
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<td>10/20</td>
<td>8</td>
<td>Anthropometry Lab- (Part 1-5C)</td>
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<td>10/25</td>
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<td>Anthropometry Lab- (Part 5D)—only one lab report, but will count for 20 points</td>
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<td>10/27</td>
<td>9</td>
<td>Begin Class Project</td>
<td>Anthro NCP Lab Notebook</td>
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<td>11/17</td>
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<td>LAB EXAM II</td>
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<td>11/22</td>
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<td>Class Project/Manuscript Writing Day</td>
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<td>11/24</td>
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<td>THANKSGIVING</td>
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<td>11/29</td>
<td>14</td>
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<td>16</td>
<td>Lab Clean Up Day</td>
<td>Manuscript Due</td>
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<td><strong>Manuscript Due</strong></td>
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