University of Nevada, Las Vegas
Howard R. Hughes College of Engineering

CEE 700 – Research Methods

Tuesday and Thursday
7:00 – 8:15 AM
TBE B174

CLASS SYLLABUS – Fall 2009

Dr. Alexander Paz
TBE-B 370

Department of Civil and Environmental Engineering
UNLV, Box 454015
Las Vegas, Nevada, 89154 - 4015

Phone: 702 – 895 - 0571
Email: apaz@unlv.edu

OFFICE HOURS:
Tuesdays and Thursdays, 8:30 – 10:00 AM
CEE 700 – Research Methods (Fall 2009)

GOALS

Provide students the opportunities to develop important research skills that they need to efficiently obtain their graduate degrees.

EXPECTED OUTCOMES

At the end of this course students are expected to be able to:

- Describe the scientific method and how this applies to graduate research studies
- Develop research questions and hypotheses
- Describe what is necessary for them to complete their graduate degree
- Prepare a literature review on a topic relevant to their area of concentration and identify relevant scientific publications
- Conduct a critical paper review
- Describe the ethical issues associated with graduate research
- Develop an experimental design
- Analyze experimental data and identify the appropriate methods for displaying the data
- Describe the appropriate ways to manage data sets
- Outline the procedures for writing a theses or dissertation
- Present research results in a poster format
- Present research results in a oral presentation
- Describe the procedure for developing a paper that will be submitted to a peer-reviewed journal
- Describe the procedures for preparing proposals that would be submitted to a funding agency

TEXTBOOK (REQUIRED)


OTHER USEFUL TEXTBOOKS (NOT REQUIRED)


ADDITIONAL MATERIAL

Additional material will be provided in class and/or posted in the WebCampus site corresponding to this class. Hence, it is very important that students continuously check their WebCampus accounts. That is, WebCampus will be extensively used in this class.
STUDENT EVALUATION

Students will be assessed in the course based on four (4) activities:

Attendance: Students are expected to attend classes and credit will be given for class participation. This includes students asking and answering questions. In addition, students are expected to bring to class research related issues and experiences. This will provide opportunities to enhance class goals (more information will be provided in class).

Reading and Homework: The course tends to follow the textbook and some additional materials. The reading and homework are fundamental to obtain the expected outcomes. Students are expected to check class schedule and read the appropriate material **BEFORE** class. This will help understanding class lectures. The homework assignments will help mastering the material and prepare for evaluations. Students will receive credit for their homework only when the corresponding material is submitted on time.

Class Presentations: There will be various class presentations that you will be giving throughout the semester. The objective of these presentations is to help students enhance their oral skills. Specific details will be provided in class.

Final Project: Students will be required to prepare a final project. This will be the **FINAL ASSESSMENT** and is **VERY** important. This should demonstrate how well students are prepared to perform graduate research. Students will be required to make a 15-20 presentation of the project. More information is provided below.

PREREQUISITE

Graduate standing in a MS or PhD degree program in sciences or engineering

GRADING

- Attendance and class participation 20%
- Homework 20%
- Presentations 20%
- Final project 40%

HOMEWORK POLICY

Homework will be due at the beginning of class (7:00 AM) of the date specified on the assignment. Late homework (after 7:00 AM) is not acceptable and will receive a maximum of 50% credit. If students are asked to send an electronic file to the instructor, then it must be received by the designated time. Homework **should be neat** and **organized**. All writing assignments should be **typed** and have proper grammar and spelling. Students are encouraged to work in study groups; however, the final version of the homework must be **unique**.

REGRADING POLICY

If students feel that their assignments have been inaccurately graded, they may prepare a clear **one-paragraph description** of the perceived inaccuracy. This can be given to the instructor along with the homework. The instructor will then regrade the homework and return it to the student within a week.
ACADEMIC ETHICS

Ethics in this course are very serious:

1. If a student is found cheating on an assignment, he/she will receive an F in this course.

2. As stated earlier, students can work in groups to do the homework, but each student is responsible for his/her own work. Students that hand in nearly identical homework will not receive credit for that assignment.

3. Academic Misconduct – “Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution.” An example of academic misconduct is plagiarism: “Using the words or ideas of another, from the internet or any source, without proper citation of the sources.” See the “Student Academic Misconduct Policy” (approved December 9, 2005, located at <http://studentlife.unlv.edu/judicial/misconductPolicy.html>).

4. Copyright - The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. YOU ARE INDIVIDUALLY AND SOLELY RESPONSIBLE FOR VIOLATIONS OF COPYRIGHT AND FAIR USE LAWS. THE UNIVERSITY WILL NEITHER PROTECT NOR DEFEND YOU NOR ASSUME ANY RESPONSIBILITY FOR EMPLOYEE OR STUDENT VIOLATIONS OF FAIR USE LAWS. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. To familiarize yourself with copyright and fair use policies, you are encouraged to visit the following website: <http://www.unlv.edu/committees/copyright/>.

CLASS ATTENDANCE

Students’ attendance to class is highly recommended. Some of the lectures and assignments will deal with material that is not in the text. We will also be doing many classroom activities. Please inform the instructor if you intend to miss a lecture for personal reasons.

COURSE WEBSITE AND EMAIL

WebCampus will be utilized to post course material. Please see https://webcampus.nevada.edu for instructions on logging into your account. In accordance with UNLV policy, all students are to be contacted using their UNLV email. (user_name@unlv.nevada.edu). This will be the email address that I use. If you don’t know your email address, then go to http://rebelmail.unlv.edu/. Do NOT use the e-mail tool provided in WebCampus, instead use your UNLV e-mail address.

DISABILITY RESOURCE CENTER

The Office of the Executive Vice President and Provost and Faculty Senate have endorsed the following statement to be included in all course syllabi. [NOTE: Over two-thirds of the students in the DRC reported that the syllabus statement, often read aloud by the faculty during class, directed them to the DRC office.]

The Disability Resource Center (DRC) coordinates all academic accommodations for students with documented disabilities. The DRC is the official office to review and house disability documentation
for students, and to provide them with an official Academic Accommodation Plan to present to the faculty if an accommodation is warranted. Faculty should not provide students accommodations without being in receipt of this plan.

UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, offering reasonable accommodations to qualified students with documented disabilities. If you have a documented disability that may require accommodations, you will need to contact the DRC for the coordination of services. The DRC is located in the Student Services Complex (SSC), Room 137, and the contact numbers are: VOICE (702) 895-0866, TTY (702) 895-0652, FAX (702) 895-0651. For additional information, please visit: <http://studentlife.unlv.edu/disability/>.

**SUGGEST STRATEGY**

Students must complete and understand the homework. Students **should not** wait to clarify issues they did not comprehend regarding class or homework. There are no bad questions. Finally, students should take advantage of office hours. If a student has conflict with the suggested hours, the student must contact the instructor (phone or email) to set up an appointment. Please do not wait till the last moment to schedule an appointment. Only students requesting appointment in advance (at least one day) will be considered.

**FINAL PROJECT**

The final project will be tailored to each individual student. Potential projects include:

1) Writing a manuscript for a peer-reviewed journal
2) Writing the literature review for your thesis/dissertation plus table of contents (e.g., real-time traffic routing; alternative and innovative teaching approaches)
3) Developing a problem statement and the corresponding hypothesis for your potential thesis/dissertation
4) Graphing and interpreting data from your research
5) Writing a short-technical report on your research
6) Writing experimental procedures for your research
7) Writing a research proposal (e.g., alternative and innovative teaching approaches)
8) Developing interactive tools to present information (e.g., simulation games)
9) Your suggestion with instructor’s approval

**ORAL PRESENTATION**

You are required to prepare a PowerPoint presentation. The presentation should not exceed 15 minutes and 5 extra minutes will be allowed for questions. You will be graded on:

(a) quality of visual aids, (b) articulation, (c) audibility, (d) language, (e) poise, (f) time, (g) speed, (h) eye contact, and (i) content.

The audience will also be graded based on their participation on questions and answers. In addition, the instructor may ask questions to the audience.
# COURSE OUTLINE (subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Class</th>
<th>Date</th>
<th>Subject [ chapter and reading assignment; details; Speaker ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>8/25</td>
<td>Introduction, how to read a technical paper, [ 1 - 4 ]; Paz</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>9/01</td>
<td>Scientific method [ 5 ]; Paz</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>9/08</td>
<td>Making effective oral presentations [ 10, pages 113 -119 ]; Paz</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>9/15</td>
<td>Student presentation 1</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>9/22</td>
<td>Student presentation 1</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>9/29</td>
<td>Effective writing [ 8 ]; Paz</td>
</tr>
<tr>
<td>12</td>
<td>15</td>
<td>10/01</td>
<td>Making poster presentations [ 10, pages 119 – 121 ]; Paz</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>10/06</td>
<td>Obtaining funding and proposal writing [ 12 ]; Paz</td>
</tr>
<tr>
<td>14</td>
<td>10/08</td>
<td>Ethics [ 6 &amp; 11 ]; Cindy Lee-Tataseo, Human Research Compliance Administrator</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>10/15</td>
<td>NO CLASS (Instructor is attending a conference)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10/20</td>
<td>Student presentation 2 [ poster presentation ]</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10/22</td>
<td>Student presentation 2 [ poster presentation ]</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>10/27</td>
<td>Hypothesis testing; Paz</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>10/29</td>
<td>Student presentation 2 [ poster presentation ]</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11/10</td>
<td>Preparing journal publications, thesis or dissertation [ 9, 10 ]; Paz</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>11/12</td>
<td>Final Presentations (Oral – 15 to 20 minutes)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>22</td>
<td>Final Presentations (Oral – 15 to 20 minutes)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>11/19</td>
<td>Final Presentations (Oral – 15 to 20 minutes)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>11/24</td>
<td>NO CLASS (Thanksgiving recess)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>11/26</td>
<td>NO CLASS (Thanksgiving recess)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12/01</td>
<td>NO CLASS (Study week)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>12/03</td>
<td>NO CLASS (Study week)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>12/08</td>
<td>Final Presentations (Oral – 15 to 20 minutes)</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>12/10</td>
<td>Final Presentations (Oral – 15 to 20 minutes)</td>
<td></td>
</tr>
</tbody>
</table>