ECE 491-001: Engineering Seminar
Spring 2016

Instructor: Dr. Bumsuk “Brian” Choi
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Electrical and Computer Engineering Department

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Office Hours: By appointment
Nguyen Engineering Building Room 3707

Course Objectives:

ECE-491 which is a required course for EE and CpE majors aims to fulfill the following main objectives:

- To provide information on the various career paths in the electrical and computer engineering fields
- To assist students in the career development process
- To bring awareness to the importance of continuing professional education
- To emphasize the critical importance of ethics and professionalism in the engineering field and to communicate some of the related ethical issues
- To bring awareness to modern engineering developments in electrical and computer engineering
- To fulfill the writing intensive requirement for the major and to enable students to further develop research and technical writing skills
- To facilitate students to practice public speaking
- To bring awareness to the impact of various technologies on the economy, environment, and society
- To provide an avenue for practice in professional networking and job search processes

Outcomes of Instruction:

- The student will possess a basic understanding of the various career paths in the electrical, computer, and bioengineering fields
- The student will acquire practice in oral communication skills
- The student will acquire skills to write an extensive paper related to their major with proper use of citations
- The student will be better prepared to start the job search process and transition into a career as an engineer
- The student will comprehend the importance of ethics and professionalism in the engineering field and be aware of some of the ethical issues surrounding their chosen field of study
- The student will understand the impact of various engineering developments on the economy, environment, and society

Rationale:
The course provides a perspective on various critical items related to the career development process and the engineering profession as well as an opportunity to practice the skills needed for students to be successful as future engineers.
Credit Hours: 1

Prerequisites:

*For ECE 491 Students:* 90 credits applicable to the electrical engineering or computer engineering program, and COMM 100

Required Textbook: *None*


Note: Students cannot receive credit for both ECE 491 and BENG 491

Method of instruction

The course will meet once per week for 1 hour and 15 minutes. The instructor will use slides, videos, and access the Internet to demonstrate issues pertinent to the course. The instructor will also invite a number of speakers from academia and the industry. Students will have the opportunity to interact with each other and the guest speakers and also to present topics of interest to the rest of the class.

Administrative support:

**Ms. Patricia Sahs**

Academic Programs Coordinator

psahs@gmu.edu

**Ms. Jammie Chang**

Academic Programs Manager

jchangan@gmu.edu

Location: 3100 Engineering Building

Phone: 703-993-1569

Student Resources

GMU provides many useful resources that students can take advantage on campus. Some of these include career services, the university writing center, university life and counseling and psychological services. A full list of these services is available on the following link. Students are highly encouraged to use these resources.

http://ctfe.gmu.edu/teaching/student-support-resources-on-campus/

Mason Diversity Statement

George Mason University is fully committed to diversity. Further information on the University’s statement regarding this matter may be found from the following link:

http://ctfe.gmu.edu/professional-development/mason-diversity-statement/
Privacy

Instructors respect and protect the privacy of information related to individual students. Issues relating to an individual student will be discussed via email, telephone or in person. Instructors will not discuss issues relating to an individual student with other students (or anyone without a need to know) without prior permission of the student.

Assessable work other than final exams will be returned to individual students directly by the Instructor (or by a faculty or staff member or a Teaching Assistant designated by the Instructor, or via another secure method). Under no circumstances will a student's graded work be returned to another student.

Students should also strive to respect the privacy of the faculty and staff and should not expect the instructor to respond to emails during times that are outside of regular business hours.

Disability Accommodations

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Office of Disability Services (SUB I, Rm. 4205; 993-2474; http://ods.gmu.edu) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

The Office of Disability Services (ODS) works with disabled students to arrange for appropriate accommodations to ensure equal access to university services. Any student with a disability of any kind is strongly encouraged to register with ODS as soon as possible and take advantage of the services offered.

Accommodations for disabled students must be made in advance – ODS cannot assist students retroactively, and at least one week's notice is required for special accommodations related to exams. Any student who needs accommodation should contact the Instructor during the first week of the semester so the sufficient time is allowed to make arrangements.

Honor Code

The integrity of the University community is affected by the individual choices made by each of us. GMU has an Honor Code with clear guidelines regarding academic integrity. Three fundamental and rather simple principles to follow at all times are that: (1) all work submitted be your own; (2) when using the work or ideas of others, including fellow students, give full credit through accurate citations; and (3) if you are uncertain about the ground rules on a particular assignment, ask for clarification. No grade is important enough to justify academic misconduct.

Plagiarism means using the exact words, opinions, or factual information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. Paraphrased material must also be cited, using MLA or APA format. A simple listing of books or articles is not sufficient. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in the academic setting. If you have any doubts about what constitutes plagiarism, please see me. The link below contains further information about the GMU honor code:

http://academicintegrity.gmu.edu/honorcode/
**Classroom Conduct:**

You are expected to be punctual, alert, and prepared for each class. Be considerate of other students, i.e., be quiet for the duration of the class period, except when you have something to contribute. Do not surf on the Internet during class time. Please feel free to ask questions and/or offer pertinent comments in class. If you are confused, more than likely, someone else is too. If you need extra help, please schedule an appointment in advance or drop by during regular office hours. Cell phones have no place in class. Either leave them behind or turn them off prior to entering the classroom.

Open laptops are allowed in the classroom only when specifically suggested by the instructor to be used as part of the instruction process, otherwise they must be closed and packed away. The same policy applies to tablets, smartphones, and other wireless connected devices.

Students are expected to interact with, and address faculty and staff in a professional and respectful manner. If you need to send an email to faculty or staff, please compose them such that it reflects a high level of professionalism. Make sure to include any pertinent information he or she might need to handle your request.

**Communications:**

Registered students will be given access to a section of the Blackboard Learning System for this course which may be accessed by visiting the following link:

http://mymason.gmu.edu

Blackboard will be used as the primary mechanism (outside of in-class lectures) to disseminate course information, including announcements, lecture slides, assignments, and scores for assignments and exams. All submissions are to be made via Blackboard on the due dates.

Communication with the Instructor on issues relating to the individual student should be conducted using Blackboard Mail, GMU email, via telephone, or in person - not in the public forums on Blackboard, or other network media. Students should not broadcast their messages to and from the instructor to the whole class or other groups of students.

For urgent messages, you should also attempt to contact the Instructor via telephone. GMU policy requires that any communication with a student related in any way to a student’s status be conducted using secure GMU systems – if you use email to communicate with the Instructor you MUST send messages from your GMU email account.

**Grading**

Grades will be awarded in accordance with the GMU Grading System for undergraduate students. See Academic Policies on the http://catalog.gmu.edu page under for more information.

The grading scale for this course is:

- 97 – 100% A+ Passing
- 93 – 96% A Passing
- 90 – 93% A- Passing
* Grades of "C-" and "D" in this course are considered unsatisfactory. According to departmental policy, no C- or D grades in ECE, BENG, CS or ENGR courses can be submitted for the BSEE or BSCE degree. You will need to repeat the course if you obtain a grade of C- or lower.

Raw scores may be adjusted by the Instructor to calculate final grades.

Final grades will be posted to http://patriotweb.gmu.edu, which is the only vehicle for students to obtain those grades. A student with a "hold" on his/her PatriotWeb account will be unable to access final grades until the hold has been removed by the Registrar.

The overall grade assigned to each student will be based on the following graded items:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resume Assignment (Draft and Final)</td>
<td>15%</td>
</tr>
<tr>
<td>Technical Research Paper (Draft and Final)</td>
<td>20%</td>
</tr>
<tr>
<td>Contemporary Engineering Issues Presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Job Fair Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Advising Session Assignment</td>
<td>10%</td>
</tr>
<tr>
<td>Test/Quizzes</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Description of Graded Items**

All submissions described below are to be made via Blackboard on the due dates stated in the course calendar at the end of this syllabus.

**Resume Assignment:**

Each student will need to prepare an initial draft of a professional resume and submit it on the due date listed on the calendar. The resume should be prepared in accordance with the suggestions made in class and should conform to the guidelines outlined in “Moving On”. The student will need to visit the career services center during walk-in hours or make an appointment with one of the counselors to have their resume reviewed. Alternatively, they can get it reviewed by potential employers that are oftentimes present at GMU to provide such services to our students. The student should then use all the feedback provided to incorporate any suggested changes and then submit a final version on the date listed on the calendar. Failure to submit an initial draft on the due date will result in a grade penalty for this assignment. The grade you will obtain in this assignment will be based partially on whether you have incorporated the suggested modifications into your resume. Failure to submit the final resume on the due date will result in 0 points for this assignment.
Technical Research Paper

This course has been approved by the Faculty Senate Writing Across the Curriculum Committee to fulfill all or in part the Writing Intensive requirement in the Electrical and Computer Engineering majors. It does so through the paper described in the following paragraph. The research paper will be completed through a draft/feedback/revision process. The first draft will be due on the date specified on Blackboard; An evaluator will provide commentary on the draft, and the revised draft will be due at the end of the semester.

Students are expected to prepare a 3500 word (minimum) technical research paper on a topic related to their major. The topic chosen should describe an engineering solution and should include a discussion of the technology’s impact on the economy, on society, and on the environment.

The student should first submit a draft and then a final write-up of the eventual paper. The skeletons of both the proposal and the paper will be available on Blackboard and/or sent via email. Both the draft and final submissions should be written up using these skeletons. Failure to submit the technical research paper on the due date will result in 0 points for this assignment.

Contemporary Engineering Issues Presentation

Many technical developments have occurred in the last 5 years and there are numerous and exciting up-and-coming fields in electrical and computer engineering today. Each student is expected to choose an interesting technological development that has occurred recently in one of these areas and prepare a 3-minute presentation on the subject. The presentation should be on a technology that has gained attention in recent years. The title of the chosen topic should be submitted to the instructor on the due date listed on the calendar.

The class will be divided into two groups and each group will present their topics on one of two dates listed on the calendar. The grade received in this component will be based both on the quality and scope of the oral presentation and the timely submission of the topic to the instructor. Failure to submit a topic on the due date will result in 0 points for this assignment. Failure to present the topic during class time will also result in 0 points for this assignment.

Job Fair Assignment

The job fair will be held on Wednesday, February 17th and Thursday, February 18th between 11 a.m. - 4 p.m. at the Johnson Center, Dewberry Hall in the Fairfax campus. Participation in the job fair is mandatory. Students are expected to interact with at least 3 potential employers during the fair and to write up a 1-page report/summary (1.5 spacing, 12 pt. font) outlining the scope of the meeting with each employer. Information on the job/internship fair may be obtained from the following link:

http://careers.gmu.edu/students/events/fairs/

Failure to submit the summary on the due date will result in 0 points for this assignment.

Class Participation

Each student will receive a maximum of 5 points for participating in class discussions during the semester. Participation may include contributing ideas and initiating discussions with the instructor and guest speakers. The instructor will keep track of the extent of each student’s participation in class discussions. Merely attending the class and not participating in any discussions during class time will result in an impact
on your participation grade. The grading rubric used to determine an eventual participation grade will be the following:

<table>
<thead>
<tr>
<th>5 points</th>
<th>4 points</th>
<th>3 points</th>
<th>2 points</th>
<th>1 point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never misses class</td>
<td>Rarely misses class</td>
<td>Sometimes misses class</td>
<td>Absent for most of the class</td>
<td>Rarely attends class</td>
</tr>
<tr>
<td>Actively participates in discussions through questions and comments</td>
<td>Semi-actively participates in discussions through questions and comments</td>
<td>Sometimes participates in discussions through questions and comments</td>
<td>Rarely participates in discussions through questions and comments</td>
<td>Very rarely participates in discussions through questions and comments</td>
</tr>
<tr>
<td>Demonstrates a significant interest in the material</td>
<td>Demonstrates a high level interest in the material</td>
<td>Demonstrates some interest in the material</td>
<td>Demonstrates a low level interest in the material</td>
<td>Lacks any interest in the material</td>
</tr>
</tbody>
</table>

### Advising Session Assignment

It is mandatory for all students in the class to **physically** meet with an academic advisor of their department to generate a degree evaluation and a plan of study.

Each student would need to also download the proof of advising session participation document from Blackboard and have the advisor fill it out. **The student should then scan and upload:**

1. The advising verification form
2. Plan of study onto Blackboard through the assignments tool.

Failure to submit **both** of the advising session documents on the due date will result in 0 points for this assignment.

**Note:** Friday, April 8, 2016 is advising day (tentative) for the ECE department so you can meet with your advisor on a walk-in basis between 1:00-4:00 p.m. that day

### Other Course Policies

- Make-up work will only be given to students with highly legitimate excuses. **You must present solid proof of your reasons to do so in advance or else you will receive a 0 on the final exam.**
- All course materials may be accessed by visiting [http://mymason.gmu.edu](http://mymason.gmu.edu)
- Important announcements may be posted on Blackboard so please make sure to follow the announcements and discussion board periodically. The discussion board on Blackboard may also be used for online discussions between students.
- **Late submissions or assignments sent via email will not be accepted except under highly legitimate circumstances.** Failure to submit your own work will result in penalty per the honor code.
- Any student acting in disrupting behavior may be asked to leave the classroom by the instructor
- All students are under the Honor code. Please make sure you read the code to resolve any uncertainties: [http://honorcode.gmu.edu](http://honorcode.gmu.edu). **Any violation of the code will not be tolerated at any time.**
- You may direct your questions to the course instructor during regular office hours. You may also request an appointment to meet with her if you are unavailable during these office hours
- Students with special requests/circumstances need to contact the instructor within a week after these special circumstances arise.
- The last day to drop the course with no tuition liability is January 26th. The last day to drop is February 19th. The selective withdrawal period is February 22 - March 25. Please check the GMU academic calendar for further information: [http://registrar.gmu.edu/calendars/spring-2016/](http://registrar.gmu.edu/calendars/spring-2016/)

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1 Rubric adapted from Adam Chapnick’s “A Participation Rubric” [http://www46.homepage.villanova.edu/john.immerwahr/TP101/lects/participation%20matrix0001.pdf](http://www46.homepage.villanova.edu/john.immerwahr/TP101/lects/participation%20matrix0001.pdf)
### Tentative Course Calendar and List of Topics by Week:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21 January</td>
<td>- Introduction and syllabus overview</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>28 January</td>
<td>- Resume writing</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4 February</td>
<td>- Career services overview</td>
<td>- Resume Draft Due</td>
</tr>
<tr>
<td>4</td>
<td>11 February</td>
<td>- Preparing for the job/internship fair/writing technical paper</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>18 February</td>
<td>- Interviewing skills, networking and job search strategies</td>
<td>- Final Resume Due</td>
</tr>
<tr>
<td>6</td>
<td>25 February</td>
<td>- Graduate studies and continuing professional education</td>
<td>- 1st DRAFT technical research paper due</td>
</tr>
<tr>
<td>7</td>
<td>3 March</td>
<td>- State of the industry, career paths, and future outlook for EE and CpE students</td>
<td>- Contemporary engineering issues topic due</td>
</tr>
<tr>
<td>9</td>
<td>17 March</td>
<td>Engineering Ethics</td>
<td>Case studies</td>
</tr>
<tr>
<td>10</td>
<td>24 March</td>
<td>Other engineering and career issues</td>
<td>- 2nd DRAFT technical research paper due</td>
</tr>
<tr>
<td>11</td>
<td>31 March</td>
<td>Other engineering and career issues</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>7 April</td>
<td>Alumni Panel</td>
<td>- Advising documents due</td>
</tr>
<tr>
<td>13</td>
<td>14 April</td>
<td>Oral presentations on contemporary engineering issues (Group 1)</td>
<td>- Contemporary engineering issues presentations</td>
</tr>
<tr>
<td>14</td>
<td>21 April</td>
<td>Oral presentations on contemporary engineering issues (Group 2)</td>
<td>- Technical research paper due</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Contemporary engineering issues presentations</td>
</tr>
<tr>
<td>15</td>
<td>28 April</td>
<td>Oral presentations on contemporary engineering issues (Group 3)</td>
<td>- Contemporary engineering issues presentations</td>
</tr>
</tbody>
</table>