Instructor:
Dr. Laurence C. Bray
- E-mail: lbray2@gmu.edu
- Phone: 703-993-2218
- Office: Nguyen Engineering Building, Room 3911
- Office hours: By appointment

Lectures:
- Thursday: 12-1:15pm, Nguyen Engineering Building, Room 2608

Important Notes and Dates:
- **Final Exam**: Thursday, December 17: 12-1:15pm
- **Holidays**: November 25<sup>th</sup> – 29<sup>th</sup> (Thanksgiving)

Course Description:
**Catalog:**
- This course covers the variety of responsibilities of bioengineers to society. Topics include ethics, regulation, research, industry, entrepreneurship, and cost issues. Professional approaches to job searching and effective technical communication will also be discussed. Speakers include faculty, invited guests from industry and government, as well as students.

Prerequisites:
- Senior Standing

Requirement or Elective:
- This course is a required course for all bioengineering students.

Course Objectives:
- To provide information on the various career paths in the electrical, computer, and bioengineering fields
- To assist students in the career development process and 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 ethical issues in each field
- To bring awareness to modern engineering developments in electrical, computer, and bioengineering
- To enable students to practice 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

**Student Learning Outcomes:**
- 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 and written communication skills
- 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

**Assignments, Examinations and Grading:**

**Assignments:** Several assignments will be given along the semester:
- Resume Assignment
- Technical Research Paper
- Engineering Issues Presentation
- Job Fair Assignment
- Advising Session Assignment

All details will be announced at the beginning of the semester.

**Exams:** The final exam will be comprehensive and will include questions on basic materials covered throughout the semester.

**Grading Structure:**
- The final grade will be based on (Tentative, subject to change):

<table>
<thead>
<tr>
<th>BENG 492</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Resume Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Technical Research Paper</td>
<td>15%</td>
</tr>
<tr>
<td>Engineering Issues Presentation</td>
<td>15%</td>
</tr>
<tr>
<td>Job Fair Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Advising Session Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>15%</td>
</tr>
</tbody>
</table>

- Letter grades will be based on a 10 point scale ([90, 100] = A, [80, 90) = B, ...)}
Important Notes:

- The grading scale for this course is:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>97-100%</td>
<td>A +</td>
</tr>
<tr>
<td>93-97%</td>
<td>A</td>
</tr>
<tr>
<td>90-93%</td>
<td>A -</td>
</tr>
<tr>
<td>87-90%</td>
<td>B +</td>
</tr>
<tr>
<td>83-87%</td>
<td>B</td>
</tr>
<tr>
<td>80-83%</td>
<td>B -</td>
</tr>
<tr>
<td>77-80%</td>
<td>C +</td>
</tr>
<tr>
<td>73-77%</td>
<td>C</td>
</tr>
<tr>
<td>70-73%</td>
<td>C -</td>
</tr>
<tr>
<td>60-70%</td>
<td>D *</td>
</tr>
<tr>
<td>0-60%</td>
<td>Failing *</td>
</tr>
</tbody>
</table>

* Grades of "C-" and "D" in this course are considered unsatisfactory. According to departmental policy, no C- or D in ECE, BENG, BIOL, CS or ENGR courses can be submitted for the degree in Bioengineering. You will need to repeat the course if you obtain a grade of C- or lower.

- Every project must be completed, working, and turned in. For each project that is not, the final grade in the course may be lowered.

Attendance and Class Participation:

<table>
<thead>
<tr>
<th>100 points</th>
<th>80 points</th>
<th>60 points</th>
<th>40 points</th>
<th>20 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never misses classes</td>
<td>Rarely misses classes</td>
<td>Sometimes misses classes</td>
<td>Absent for most classes</td>
<td>Rarely attends classes</td>
</tr>
<tr>
<td>Attends 4 seminars</td>
<td>Attends 3 seminars</td>
<td>Attends 2 seminars</td>
<td>Attends 1 seminar</td>
<td>Attends 0 seminars</td>
</tr>
<tr>
<td>Actively participates</td>
<td>Semi-actively participates</td>
<td>Sometimes participates</td>
<td>Rarely participates</td>
<td>Never Participates</td>
</tr>
</tbody>
</table>

Late Submission Policy:

- All assignments will be submitted via blackboard by 5pm on the day in which they are due. [See https://mymasonportal.gmu.edu/webapps/portal/frameset.jsp]. Any assignments turned in after the submission deadline will be graded as late.
- The penalty for late assignments will be a one grade point deduction (i.e., B to C) for each day (or part thereof) following the due date (This late policy will apply to all assignments for which no application for extension has been made).
GMU Policies and Resources for Students:

- Students must adhere to the guidelines of the George Mason University Honor Code [See http://academicintegrity.gmu.edu/honorcode/].
- Students must follow the university policy for Responsible Use of Computing [See http://universitypolicy.gmu.edu/all-policies/].
- Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students’ personal experience and academic performance [See http://caps.gmu.edu/].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See http://ods.gmu.edu/].
- Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor. The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See http://writingcenter.gmu.edu/].

Professional Dispositions:

- Students are expected to exhibit professional behaviors and dispositions at all times.

Core Values Commitment:

- The College of Education & Human Development is committed to collaboration, ethical leadership, innovation, research--based practice, and social justice. Students are expected to adhere to these principles. [See http://cehd.gmu.edu/values/].

WAVES: Wellness, Alcohol and Violence Education and Services:

WAVES promotes wellness within the Mason community through health education, alcohol/drug assessment and education, and violence awareness, prevention and sexual assault response. We help students make healthy, safe choices and encourage lifelong, thoughtful healthy decision-making through individualized support, creative programming, and evidence-based education and outreach.

WAVES office 703-993-9999
SUB I, Suite 3200
24-Hour Sexual and Intimate Partner Violence Crisis Line 703-380-1434
waves.gmu.edu

- 703-360-7273 (Fairfax County Office for Women and Domestic and Sexual Violence Services 25 hotline)
- 703- 228-4848 (Arlington County Domestic Violence Services Hotline)
CAPS: Counseling and Psychological Services:
Counseling and Psychological Services (CAPS) provides a wide range of free *confidential* services to students, faculty, and staff. Services are provided by a staff of professional clinical psychologists, social workers, counselors, learning specialists, and psychiatric providers. CAPS individual and group counseling, workshops, and outreach programs are designed to enhance students’ personal experience and academic performance.
Visit us at [caps.gmu.edu](http://caps.gmu.edu) for additional resources.
- For consultation or emergency assistance during office hours call 703-993-2380.
- For assistance during non-office hours, call University Police at 703-993-4357.
- 703-527-4077 (CrisisLink)
- 1-800-273-8255 (National Suicide Prevention Lifeline)
- 1-877-838-2838 (Veterans' Crisis Hotline)

**Student Health Services (SHS)** — Provides *confidential* health care to enrolled students in emergency and non-emergency circumstances on the Fairfax, Arlington and Prince William campuses. If there is a medical emergency and Student Health Services (SHS) is closed, please contact the free after-hours nurse ((703) 993-2831), a hospital emergency room, an urgent care facility, or call 911.

**SUB 1, Suite 2300**  
703-993-2831

**University Police:**
Emergency: 911    Non-Emergency: (703) 993-2810
Reporting a Crime (Crime Solvers Anonymous Tip Hot-Line): (703) 993-4111
Mason Police Website: [http://police.gmu.edu/](http://police.gmu.edu/)
Eric Heath, Chief of Police    Phone: (703) 993-3840    E-mail: eheath2@gmu.edu