MARYLAND APPLIED GRADUATE ENGINEERING

TENTATIVE SYLLABUS - SUBJECT TO CHANGE

INDUSTRY PRACTICES IN MEDICAL ROBOTICS (ENPM809A)

Term: *Spring 2026*
Professor: ANINDO ROY
Course Dates: From Jan, 2026 - May, 2026
Course Times: TBD
Classroom: TBD

Course Description

Medical robotics has advanced rapidly in recent years, significantly improving patient care and outcomes. These devices are crucial in helping health care providers deliver accurate diagnoses, effective treatments, and personalized care to patients. Innovations in this space can engage and empower patients to manage their health through wearable devices including but not limited to robotics. These advances are poised to revolutionize health care as attested by projections for steady growth, with global annual sales forecast to rise by over 5% annually and reach nearly US$800 billion by 2030. This reflects increasing demand for innovative new devices (e.g. robotics) and services (like health data), as lifestyle diseases become more prevalent with increased longevity. According to the CMS, annual US healthcare spending on medical devices including medical robotics is projected to reach around $300-400 billion by 2030 (5-6% of $6.8 trillion in total healthcare spending). Rapid industry growth requires a highly skilled workforce. The medical device industry employs nearly 2 million people, many engineers, both directly and indirectly, nationwide. According to a recent industry outlook report employers will continue to face a competitive labor market, which necessitates recruiting engineers with transferable and diverse skillsets.

This course provides a design-oriented introduction to standard practices deployed by the medical robotics industry, an emerging and one of the fastest growing fields of robotics and more broadly, the medical device industry. These robotic devices are dedicated to improving the lives of people living with or recovering from injuries, illnesses, and disabilities. The course is designed for graduate students wishing to learn and acquire theoretical as well as practical knowledge skills in industry practices for medical robotics. In contrast with other sub-specialties and/or courses in robotics, this course covers not only engineering design and development (D&D) but also usability engineering and risk management. Through multiple case studies, the course will teach the entire design controls process, from concept (user needs) to design inputs/outputs to bench verification and validation (V&V). At the appropriate times, the instructor will bring into the classroom, one or more medical robots to reinforce learning and for demonstration/s. Device validation will be explained through clinical trial design including seminal studies deploying multiple devices. Safety and usability considerations are also a must for devices in this field, given the inherent presence of the “human-in-loop”. Hence, this course will also teach the fundamentals of usability engineering and risk controls. These topics will be covered within the framework of regulatory requirements including special controls (for Class II and III devices). The course includes expert guest lectures on selected topics such as defining user needs (clinician) and design I/O’s (product engineer) to complement the subject matter covered.

Prerequisites

Familiarity with linear control systems.

Learning Outcomes

After successfully completing this course, you will be able to:

- Classify medical and therapeutic robotic devices according to regulatory frameworks, and evaluate applicable standards, controls, and market pathways.
- Apply engineering design principles—including hardware, controller, and software development—to create and refine rehabilitation robotic systems.
- Analyze usability, safety, and risk factors in medical robotics, and integrate mitigation strategies into the design and product realization process.
- Design and evaluate protocols for verification, validation, and clinical studies of medical robotic devices.

Course Materials

Required Resources

- None.

Supplemental Resources (no purchase required)

- Readings: None.
- Hardware/Software: None.

Course Structure

This course includes both on-campus and online sections. To attend synchronously online, log into ELMS-Canvas at the time of the Section 0101 class and select "Video Conference" from the left side menu. This will open a Zoom link to the live classroom.

For asynchronous online students, all lectures will be recorded and made available on ELMS-Canvas under "Panopto Recordings/Video Lectures" within 24 hours of the class time. Be sure to review the recorded lecture in a timely manner.

On-campus students come to class prepared to engage with the lecture and materials. Online students, be sure to log into Canvas regularly and participate in discussions and activities. Regardless of the section you are enrolled in, participation is expected.

Please note that F1 students enrolled in the on-campus section are required to attend in person. If you have a conflict on a particular day, please reach out to me in advance to discuss.

Communication Guidelines

Communicating with the Instructor

My goal is to be readily available to you throughout the semester. I can be reached by email at aroy1975@umd.edu. Please DO NOT email me with questions that are easily found in the syllabus or on ELMS-Canvas (e.g., When is this assignment due? How much is it worth? etc.), but please DO reach out about personal, academic, and intellectual concerns/questions.

While I will do my best to respond to emails within 24 hours, you will more likely receive email responses from me on Thursdays and Fridays from 9am to 11am EST.

When constructing an email to me please put “ENPM809A (Section XXXX): Your Topic” in the subject line. This will draw my attention to your email and enable me to respond to you more quickly.

Additionally, please review These tips for 'How to email a Professor'. By following these guidelines, you will be ensured to receive a timely and courteous response.

Finally, if you need to discuss issues not appropriate for the classroom and/or an email, we can arrange to talk by phone, over Zoom, or in person. Send me an email asking for a meeting and we can set something up.

Announcements

I will send IMPORTANT messages, announcements, and updates through ELMS-Canvas. To ensure you receive this information in a timely fashion, make sure your email and announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS-Canvas (How to change notification settings in CANVAS).

Log into our ELMs-Canvas course site at least once every 24-hour period to check your inbox and the Announcements page.

Names/Pronouns and Self-Identifications

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to in this class, both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). Keep in mind that the pronouns someone uses are not necessarily indicative of their gender identity. Visit trans.umd.edu to learn more.

Additionally, it is your choice whether to disclose how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all your fellow Terps.

Communicating with your Peers

With a diversity of perspectives and experience, we may find ourselves in disagreement and/or debate with one another. As such, it is important that we agree to conduct ourselves in a professional manner and that we work together to foster and preserve a virtual classroom environment in which we can respectfully discuss and deliberate controversial questions. I encourage you to confidently exercise your right to free speech—bearing in mind, of course, that you will be expected to craft and defend arguments that support your position. Keep in mind, that free speech has its limit and this course is NOT the space for hate speech, harassment, and derogatory language. I will make every reasonable attempt to create an atmosphere in which each student feels comfortable voicing their argument without fear of being personally attacked, mocked, demeaned, or devalued.

Any behavior (including harassment, sexual harassment, and racially and/or culturally derogatory language) that threatens this atmosphere will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester together and/or if your engagement in discussion has been in some way hindered by the learning environment.

Netiquette Policy

Netiquette is the social code of online classes. Students share a responsibility for the course's learning environment. Creating a cohesive online learning community requires learners to support and assist each other. To craft an open and interactive online learning environment, communication has to be conducted in a professional and courteous manner at all times, guided by common sense, collegiality and basic rules of etiquette.

Grading

Grade Breakdown

Assignment	Percentage %
Homework	**40%**
Participation/Engagement	**5%**
Midterm Exam	**25%**
Final Exam	**30%**
Total	**100%**

Course Assignments

Homework Assignments

- Materials from course lectures and assigned readings.
- Apply knowledge learned in product realization including hardware, controller, and software design.

Participation & Engagement

- During live sessions (in class group discussions).

Midterm Exam

- Materials from course lectures and assigned readings.
- Take home.

Final Exam

- Materials from course lectures and assigned readings.
- Take home.

Grading of Assignments

All assignments will be graded according to a predetermined set of criteria (i.e., rubric) which will be communicated to students before the assignment is submitted.

To progress satisfactorily in this class, students need to receive timely feedback. To that end, it is my intention to grade all assignments in a timely manner after their due date. If an assignment is taking longer than expected to grade, students will be informed of when they can expect to see their grade.

Grade Computation

All assessment scores will be posted on ELMS/Canvas page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please email me to schedule a time for us to meet and discuss.

It is expected that you will submit work by the deadline listed in the syllabus and/or on ELMS-Canvas. Late work will be penalized according to the late work policy described in the **Course Policies and Procedures** section below.

Grade Disputes: I am happy to discuss any of your grades with you, and if I have made a mistake, I will immediately correct it. Any formal grade disputes must be submitted in writing and within one week of receiving the grade.

Final letter grades are assigned based on the percentage of total assessment points earned. To be fair to everyone I have to establish clear standards and apply them consistently, so please understand that being close to a cutoff is not the same as making the cut (89.99 ≠ 90.00). It would be unethical to make exceptions for some and not others.

Final Grade Cutoffs									
+	97.00%	+	87.00%	+	77.00%	+	67.00%	+	
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%	-	

Course Schedule

Week #	Topic	Deliverable
1	***Introduction to Medical Robotics*** **Definition and regulatory scope** of medical devices (FDA, FD&C Act), **FDA risk-based classification** (Class I, II, III) and implications, **Regulatory pathways** to market: 510(k), PMA, De Novo, HDE, **Special controls** for assistive/ therapeutic robots (e.g., powered exoskeletons), **Key international standards**: IEC 60601, ISO 13485, ISO 14971, **Physiologic Closed Loop Controllers** (PCLCs) and regulatory considerations, **Overview of the medical robotics industry**: major products, market leaders, and challenges	
2	***Quality and Product Realization in Medical Devices***	**Homework 1**

	Quality Management Systems (QMS) in medical device manufacturing, FDA 21 CFR Part 820 vs. ISO 13485: comparison and harmonization, **Structure and key sections of ISO 13485** (Sections 4–8), **Product realization** process in medical robotics, **Risk management principles** (ISO 14971) and analysis tools (FMEA, fishbone, fault tree), **Design controls**: user needs, inputs/outputs, verification, validation, transfer, **Usability engineering** (IEC 62366-1) and software standards (IEC 62304), Post-market monitoring, complaint handling, and CAPA processes	
3-4	***Hardware Design – Part I*** **Neurologic injuries**: incidence, prevalence, and functional impact, **Gaps in traditional physiotherapy** and the role of rehabilitation robotics, **Challenges to adoption**: skepticism and limited clinical endorsement, **Neuroplasticity principles** for robotic rehabilitation (task-specific practice, motor priming, augmentation), **Recap of design and development (D&D)** stages for medical robotics, **Key design decisions**: degrees of freedom (DOFs), exoskeletons vs. end-effectors, metabolic cost considerations; **Defining user needs** based on injury type, activity goals, and joint assistance requirements, **Clinical case study**: AMBLE ankle exoskeleton, **Actuator types** for lower limb rehabilitation robotics: pros and cons **Actuator selection criteria**: torque, thrust, lead length, back-drivability, mechanical performance **Gearless actuator architecture** (Roh'lix) and calculation of performance parameters	
5	***Hardware Design – Part II*** **Motor selection** criteria: torque, RPM, inertia, and gait biomechanics, Calculating peak torque, min/max RPM, and matching biomechanical requirements, **Linear encoder** selection: resolution, read speed, count frequency, and system compatibility, **Kinematic modeling** for nominal actuator length based on ROM and anthropometry, **Battery selection** for rehabilitation robotics: capacity, discharge rate, DOD, cycle life, chemistry, **Tethered vs. untethered** designs: trade-offs in portability, safety, and clinical use, **Peripherals design**: comfort, kinematic compatibility, load distribution Managing slippage, misalignment, and gravitational effects in wearable hardware, **Patient-specific considerations**: stroke hemiplegia, SCI-related osteoporosis, **Materials and fastening methods** for applied parts in rehabilitation robots	**Homework 2**

6	***Controller Design in Medical Robotics – Part I*** **Position-regulated control systems**: **Issues with position control** (prelude), need/benefits of motion feedback, feedback vs. programmable controller, control law, **concept of contact constraints**, transient response with vs. without programmable feedback controller, **under vs. over vs. critical damping**, frequency domain modeling, performance metrics, steady-state error (SSE), **error regulation**, effect of constant gain on SSE, stability types & poles, SSE vs. stability tradeoff, improving transient response/SSE through position-regulated control.	
7	***Controller Design in Medical Robotics – Part II*** **Fundamentals of Interaction Control**: Mechanical **impedance/admittance**, qualitative underlying principles of impedance control (IC), interactive relationships to deficit severity, key questions in IC, biological inspirations. **Isolated vs. contact stability** with position & force feedback, practical problems associated with contact instability, **drawbacks of disturbance rejection & uncertainty modeling approaches**, interaction port, formal definitions of impedance/admittance for linear & non-linear systems, **IC as a solution to contact instability**, port impedance/admittance vs. transfer functions.	
8	***Controller Design in Medical Robotics – Part III*** **Analysis of Coupled Systems**: **Bond graphs, causality**, impedance/admittance reduction, choice for impedance/admittance (preference vs. requirement), Nyquist stability, **Passive systems**, **stability vs. passivity**, **coupled system stability analysis**, **practical tests** for passivity, static impedance control.	
9	***Controller Design in Medical Robotics – Part IV*** **Impedance/Admittance Controllers**: **Hierarchy of stability** types (nominal/coupled/command following), generalized interactive dynamics transfer function, **Simple impedance control** (SIC), pros vs. cons of SIC, **Force feedback**, pros vs. cons of pure force feedback, **Physical equivalent systems**, **Natural admittance control (NAC)**, Series dynamics.	**Homework 3**
10	***Software Development in Medical Robotics*** **Scope of IEC 62304 for embedded and control software in medical devices**, **Software safety classification** and its impact on development rigor, **Requirements gathering**: user stories, intended use, and functional specifications,	

	Software architecture and design considerations for medical robotics, **Development lifecycle stages**: planning, implementation, integration, **Verification and validation** of software functions (unit, integration, system testing), **Managing software risk** and linking to overall device risk management (ISO 14971), **Cybersecurity considerations** in embedded medical software: threat modeling, penetration testing, secure coding practices.	
11	***Risk Analysis in Medical Robotics*** **Role of risk management** in medical device development (ISO 14971), **Key definitions**: hazard, hazardous situation, harm, risk, severity, probability of occurrence, **Risk assessment process**: identifying hazards, estimating probability and severity, **Risk evaluation** criteria for medical robotics applications, **Quantitative and qualitative methods** for risk analysis, **Residual risk analysis**: definition, assessment, and documentation Benefit–risk analysis: when benefits outweigh residual risks, **Common hazards in rehabilitation and assistive robotics** (mechanical, electrical, control-system related) Use of risk matrices and other visual tools for decision-making, **Integration of risk analysis results into design controls and regulatory submissions**	
12	***Usability Engineering for Medical Robotics*** **Definition and scope of usability engineering** in medical device development, **Overview of IEC 62366** and its regulatory significance, **Importance of usability** in medical robotics: patient safety, device adoption, and clinical effectiveness, **Usability engineering process**: user research, task analysis, **formative evaluation**, and **summative evaluation**, **Human factors and ergonomics** in rehabilitation robot design, **Case study**: usability evaluation in a rehabilitation robotics product (AMBLE) **Relationship between usability engineering and risk management** (ISO 14971), **Identifying and mitigating use-related hazards**, **Integrating usability findings into design controls** and product iteration	
13	***Clinical Study Design for Medical Robotics – Part I*** **Clinical Study Design & Guidelines: Types of studies** in rehabilitation robotics (interventional/observational, parallel group/dose-ranging/cross-over), LEAPS and other clinical studies, **Study design process** (randomization, stratification, blinding), **ethical guidelines**.	
14	***Clinical Study Design for Medical Robotics – Part II***	**Homework 4**

	Upper Extremity Clinical Trials: UE pathology post-neurologic injuries, VA-COOP and other key studies, integration of UE robots with non-robotic systems (REACH+FES study).	
15	***Practice Problems in Medical Robot Design & Synthesis*** Multiple problems in controller, hardware sub-systems, and software design; future directions in medical robotics	

Note: This is a tentative schedule, and subject to change as necessary – monitor ELMS-Canvas for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

Course Policies and Procedures

The University of Maryland's conduct policy indicates that course syllabi should refer to a webpage of course-related policies and procedures. For a complete list of graduate course related policies, visit the Graduate School website. Below are course-specific policies and procedures which explain how these Graduate School policies will be implemented in this class.

Satisfactory Performance

The Graduate School expects students to take full responsibility for their academic work and academic progress. The student, to progress satisfactorily, must meet all the academic requirements of this course. Additionally, each student is expected to complete all readings and any preparatory work before each class session, come to class prepared to make substantive contributions to the learning experience, and to proactively communicate with the instructor when challenges or issues arise.

Questions about Assignments

Please ask all questions you may have about an assignment by 5PM the day before the assignment is due. Any questions asked after that time may not be answered in time for you to make changes to your work.

Late Work Policy

Assignments should be completed by the due date and time listed with the assignment, on the syllabus, and/or in the course calendar. If you are unable to complete an assignment by the stated due date, it is your responsibility to contact your instructor to discuss an extension, at least 24 hours BEFORE the assignment is due. Extensions are not guaranteed but may be granted at the instructor's discretion.

Assignments submitted late will receive a 10% deduction in total grade per each calendar day late up to a maximum of three days late (i.e., there is a maximum of a 30% grade reduction for assignments submitted late). Work submitted more than three days late will not receive feedback and will automatically earn a grade of zero.

Religious Observance
It is the student's responsibility to inform the instructor of any intended absences for religious observances in advance. Notice should be provided as soon as possible but no later than the end of the schedule adjustment period.

Academic Integrity
For this course, some of your assignments will be collected via Turnitin on ELMS/Canvas. I have chosen to use this tool because it can help you improve your scholarly writing and help me verify the integrity of student work. For information about Turnitin, how it works, and the feedback reports you may have access to, visit Turnitin Originality Checker for Students

The University's Code of Academic Integrity is designed to ensure that the principles of academic honesty and integrity are upheld. In accordance with this code, the University of Maryland does not tolerate academic dishonesty. Please ensure that you fully understand this code and its implications because all acts of academic dishonesty will be dealt with in accordance with the provisions of this code. All students are expected to adhere to this Code. It is your responsibility to read it and know what it says, so you can start your professional life on the right path. **As future professionals, your commitment to high ethical standards and honesty begins with your time at the University of Maryland.**

It is important to note that course assistance websites, such as CourseHero, or AI generated content are not permitted sources, unless the instructor explicitly gives permission. Material taken or copied from these sites can be deemed unauthorized material and a violation of academic integrity. These sites offer information that might be inaccurate or biased and most importantly, relying on restricted sources will hamper your learning process, particularly the critical thinking steps necessary for college-level assignments.

Additionally, students may naturally choose to use online forums for course-wide discussions (e.g., Group lists or chats) to discuss concepts in the course. However**, collaboration on graded assignments is strictly prohibited unless otherwise stated**. Examples of prohibited collaboration include asking classmates for answers on quizzes or exams, asking for access codes to clicker polls, etc. Please visit the **Office of Graduate Studies' full list of campus-wide policies** and reach out if you have questions.

Finally, on each exam or assignment you must write out and sign the following pledge: ***"I pledge on my honor that I have not given or received any unauthorized assistance on this exam/assignment."***

If you ever feel pressured to comply with someone else's academic integrity violation, please reach out to me straight away. Also, ***if you are ever unclear*** about acceptable levels of collaboration, ***please ask***!

To help you avoid unintentional violations, ***the following table*** lists levels of collaboration that are acceptable for each graded exercise. Each assignment will contain more specific information regarding acceptable levels of collaboration.

						
Homework Assignments	✔		✔	---	---	---
Midterm Exam	✔		---	---	---	---
Final Exam	✔		---	---	---	---

Course Evaluation
Please submit a course evaluation through Student Feedback on Course Experiences in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to Course Experiences is confidential. Campus will notify you when Student Feedback on Course Experiences is open for you to complete your evaluations at the end of the semester. Please go directly to the **Student Feedback on Course Experiences** to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing through Testudo the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

Copyright Notice

Tips for Succeeding in this Course

1. **Participate.** I invite you to engage deeply, ask questions, and talk about the course content with your classmates. You can learn a great deal from discussing ideas and perspectives with your peers and professor. Participation can also help you articulate your thoughts and develop critical thinking skills.
2. **Manage your time.** Students are often very busy, and I understand that you have obligations outside of this class. However, students do best when they plan adequate time that is devoted to course work. Block your schedule and set aside plenty of time to complete assignments including extra time to handle any technology related problems.
3. **Login regularly.** I recommend that you log in to ELMS-Canvas several times a week to view announcements, discussion posts and replies to your posts. You may need to log in multiple times a day when group submissions are due.
4. **Do not fall behind.** This class moves at a quick pace and each week builds on the previous content. If you feel you are starting to fall behind, check in with the instructor as soon as possible so we can troubleshoot together. It will be hard to keep up with the course content if you fall behind in the pre-work or post-work.
5. **Use ELMS-Canvas notification settings.** Pro tip! Canvas ELMS-Canvas can ensure you receive timely notifications in your email or via text. Be sure to enable announcements to be sent instantly or daily.
6. **Ask for help if needed.** If you need help with ELMS-Canvas or other technology, IT Support. If you are struggling with a course concept, reach out to me and your classmates for support.

Student Resources and Services

Taking personal responsibility for your learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit the Counseling Center's Academic Resources to learn more about the wide range of resources available to you. Below are some additional resources and services commonly used by graduate students. For a more comprehensive list, please visit the Graduate School's Campus Resources Page.

Accessibility and Disability Services

The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The University of Maryland is also committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The Accessibility & Disability Service (ADS) provides reasonable accommodations to qualified individuals to provide equal access to services, programs and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact me as soon as possible so that I have sufficient time to make arrangements.

For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at adsfrontdesk@umd.edu. Information about sharing your accommodations with instructors, note taking assistance and more is available from the Counseling Center.

Writing Center

Everyone can use some help sharpening their communication skills (and improving their grade) by visiting The Graduate School's Writing Center and schedule an appointment with them. Additionally, international graduate students may want to take advantage of the Graduate School's free English Editing for International Graduate Students (EEIGS) program.

Health Services

The University offers a variety of physical and mental health services to students. If you are feeling ill or need non-emergency medical attention, please visit the University Health Center.

If you feel it would be helpful to have someone to talk to, visit UMD's Counseling Center or one of the many other mental health resources on campus.

Notice of Mandatory Reporting

Notice of mandatory reporting of sexual assault, sexual harassment, interpersonal violence, and stalking: As a faculty member, I am designated as a "Responsible University Employee," and I must report all disclosures of sexual assault, sexual harassment, interpersonal violence, and stalking to UMD's Title IX Coordinator per University Policy on Sexual Harassment and Other Sexual Misconduct.

If you wish to speak with someone confidentially, please contact one of UMD's confidential resources, such as CARE to Stop Violence (located on the Ground Floor of the Health Center) at 301-741-3442 or the Counseling Center (located at the Shoemaker Building) at 301-314-7651.

You may also seek assistance or supportive measures from UMD's Title IX Coordinator, Angela Nastase, by calling 301-405-1142, or emailing titleIXcoordinator@umd.edu.
To view further information on the above, please visit the Office of Civil Rights and Sexual Misconduct's website at ocrsm.umd.edu.

Basic Needs Security
If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, please visit UMD's Division of Student Affairs website for information about resources the campus offers you and let me know if I can help in any way.

Veteran Resources
UMD provides some additional supports to our student veterans. You can access those resources at the office of Veteran Student life and the Counseling Center. Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, disabilities) are welcome and encouraged to communicate these, in advance if possible, to the instructor.