Educational Learning Methods for BME Learning Assistants

BME4931 Class 28269
Class Periods: F | P8 3:00 – 3:50pm
Location: HPNP G-105
Academic Term: Fall 2025

Instructor:
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Office hours: Book a Meeting with Me

Course Description
1 credit – Pedagogy course for undergraduate Learning Assistants (LAs) in the Department of Biomedical Engineering. All undergraduate students serving as LAs in BME LA-supported courses are required to enroll. The course equips LAs with evidence-based instructional strategies to enhance student learning in core BME courses. Key focus areas include Kolb's Experiential Learning Cycle, metacognitive strategies, advanced questioning techniques, and fostering cognitive engagement. LAs develop the skills necessary to support an active and reflective learning environment.

Course Pre-Requisites
None, but Undergraduate students must have been matched to a BME LA-supported course. More details about the BME-LA Program and the application process can be found on the BME-LA handbook website.

Course Objectives:
Upon completion of the course, LAs are expected to:

- Identify and describe research-based pedagogical strategies, including learning theories, cognitive engagement, metacognition, and asset-based vs. deficit-based models of learning.
- Differentiate between effective and ineffective learning techniques, and analyze their applicability within BME course contexts.
- Apply active listening and advanced questioning techniques to foster constructive and supportive communication with students.
- Demonstrate the ability to guide students toward solutions by facilitating critical thinking rather than providing direct answers.
- Develop and evaluate approaches to team formation and classroom dynamics that enhance peer-to-peer learning.
- Plan and implement bridging strategies to support student learning progression using the apprenticeship model.
- Reflect on and assess their own leadership development through real-time instructional scenarios and peer feedback.

Materials and Supply Fees: None

Relation to Program Outcomes (ABET):

ABET Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
3. An ability to communicate effectively with a range of audiences	High - Introduced
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High - Introduced

Required Textbooks and Software

The course material is inspired by various sources and compiled into Modules on Canvas by the instructor.

Recommended Material

Resources and supplemental reading will be provided by the instructor on Canvas (Files/Resources).

<u>Tentative</u> Course Schedule

Week#	Week of	Topic
1	08/18	Introduction and course expectations
2	08/25	Implicit bias, Inclusivity, and "safe spaces"
3	09/01	Inclusive Questioning techniques &
4	09/08	Learning Activity #1 development
5	09/15	Learning Theory (Kolb's cycle)
6	09/22	Learning Techniques & their utility
7	09/29	Learning Activity #2 development
8	10/06	Metacognition & Self-Regulated Learning
9	10/13	**No Class** - Homecoming
10	10/20	Learning Activity #3 development
11	10/27	Cognitive Engagement
12	11/03	Learning Activity #4
13	11/10	Cooperative Learning (Team formation, dynamics & engagement) 1
14	11/17	Cooperative Learning (Team formation, dynamics & engagement) 2

15	11/24	**No Class** - Thanksgiving

Attendance and Participation:
Students are expected to attend the weekly course meeting and engage in discussions about the assigned reading material. Attendance is monitored through the attendance assignment on Canvas and is **worth 5 points per week**. Excused absences must be consistent with university policies in the undergraduate catalog and require appropriate documentation. Students are responsible for making up the material or activities covered in their absence. More information can be found in the undergraduate catalog.

Absence due to religious observances: Students are excused from class or other scheduled academic activity to observe a religious holy day of their faith, upon prior notification to their instructors. Students will be permitted a reasonable amount of time to make up the material or activities covered in their absence and will not be penalized because of the religious observances. I will do my best to keep religious holidays in mind while scheduling major academic events. Please notify me if you think I have overlooked a religious holiday. No documentation is required to prove the religious observance.

Punctuality: Students are expected to arrive on time for class. Late arrivals (beyond 10 minutes) will affect the attendance grade. Class will start and be dismissed on time.

Class expectations:
The class will follow a reading group format, where students must complete a reading assignment (one or more research articles) before attending class. Preparing for the class is **mandatory**, as it is discussion-based and relies primarily on your active participation. Unprepared attendance will result in a 50% deduction from the attendance grade (see the attendance section). In each class, we will discuss and share our thoughts about the articles we read and brainstorm ideas to implement new learning techniques in the BME LA-supported classroom. So, bring your best self to class to ensure a great learning experience. Keep up with the pace and always ask questions. If you feel like you are falling behind, notify the instructor immediately. Having a bad day in general, drop me a Canvas note (see Health and Rest section).

Communication Policy:
Communication is a cornerstone of the success of the student's learning experience. Hence, to ensure a message doesn't get lost and to receive a timely response, all correspondence to/from the instructor and TA should be made via Canvas messages or UF email. All important dates, tips, and announcements will be made through Canvas. Students are fully responsible for every piece of information on Canvas and must check it regularly for updates (turn on notifications).

Class Material:
Research Articles:
All reading material will be made available to the students on Canvas. Articles will be assigned on a weekly basis.

Assignments: Will be available and submitted via Canvas. Late submissions, within 48 hours of the deadline, will be allowed 80% of the full points. Homework received 48 hours past the deadline will be allowed 50% of the full points. Submission integrity (correct file, extension, and format) is the responsibility of the student. Always view your submission after you submit!

Evaluation of Grades:

"You are not defined by your grade, but by your effort and morals" ~Dr. Mansy
Assignments are educational tools to evaluate and assess the learning objectives listed above. This *happens* to result in a grade. As such, asking questions and seeking help early on can significantly improve the outcome.

Assignment	% of Final Grade	Objective
Participation	10%	Ensure attendance and engagement in class discussion
Reflections [x6]	40%	Assess your abilities as a learner Appraise/Critique the techniques suggested in the research article Describe implementation ideas Report implementation results
Learning Activity Development & Implementation [x4]	50%	Develop in-class activities to explore/test a new learning concept
Total	100%	Overall class performance

Reflection: LAs will complete six structured reflections throughout the course. These written assignments will serve as a space to critically assess your growth as a learner and emerging educator. Each reflection will prompt you to evaluate your own learning process, appraise specific neuroscience-informed strategies and research-based teaching techniques, and connect theoretical insights to classroom implementation experiences. Additionally, you will be asked to articulate your own pedagogical stance by describing implementation ideas and reporting on their perceived or actual outcomes in practice.

Learning Activity Development: LAs will design and facilitate learning activities informed by active learning, collaborative pedagogy, and neuroscience principles. These activities must address specific learning goals and be developed using evidence-based strategies. LAs are expected to pilot their activities, collect peer feedback, and iterate on their designs. The assignment emphasizes creative exploration, testing of learning concepts, and integration of reflective teaching practices into your learning facilitation approach.

Grading Policy:

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
%	≥95	94-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	< 60

Most assignments will be graded for completion. More information on UF grading policy may be found at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Class Ethics:

- Collaboration or teamwork in class discussions is absolutely encouraged, but each student must make individual submissions of their own work/reflection.
- Plagiarism, the act of verbatim copying of text, figures, and/or images (essentially anything) from the web without proper citation or paraphrasing, is strictly prohibited. Plagiarism is a common infraction to the UF Honor Code. If you are confused as to what constitutes plagiarism, see here: https://guides.uflib.ufl.edu/copyright/plagiarism . Also, note that copying solutions for any assignment, regardless of the source (e.g., other students' notes, instructor-provided solutions on Canvas, pirated website solutions, blogs, forums…etc.), will be treated as plagiarism. Turnitin will be enabled randomly, and students will be notified of any detected plagiarism.

Any violations of the above, or attempts thereof, will be immediately reported to the Dean of Students as a UF Student Honor Code violation

Students Requiring Accommodations

No one is perfect, and we all have something we struggle with. If you are aware of a particular difficulty, please do the following:

1. Register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation.
2. Email mmansy@bme.ufl.edu your accommodation letter, along with any additional information and set up an appointment to discuss your needs with the instructor.
3. Register for the tests through the DRC to ensure testing accommodations are met.

***** This should be done as early as possible in the semester *****

Should you, however, feel the need for accommodation at any other point in the semester, please do not hesitate to contact the instructor immediately. This can manifest in various forms, so inform the instructor of any sudden changes you experience regarding the class (see Communication Policy).

Course Evaluation

I'm personally committed to improving your learning experience. I, therefore, value and appreciate all forms of constructive feedback (positive and negative) at ANY time during the semester. Help me help you! Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

University Honesty Policy

UF students are bound by The Honor Pledge, which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or

implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Brave Learning Environment

I, personally, strive for a safe and supportive classroom that welcomes every student. The Herbert Wertheim College of Engineering values our community and is committed to individual and group empowerment. It is, therefore, expected that every person in this class will treat one another with dignity and respect.

If you feel like your performance in class is being impacted by bias or harassment of any kind (implicit or explicit), please contact your instructor (mmansy@bme.ufl.edu), your academic advisor, or the Graduate Program Coordinator

Furthermore, you are allowed to change your "Display Name" on Canvas to match your personal preference. To update your display name, you must go to one.uf.edu. Click the dropdown arrow next to your profile icon in the top right corner then click Directory profile. There you can edit your Display name. It may take a business day for the update to reflect in Canvas.

Student Privacy

There are federal laws protecting your privacy with regard to grades earned in courses and on individual assignments: https://registrar.ufl.edu/ferpa.html

Health and Rest:

Your academic success relies on your combined physical, mental, and emotional health. Take care of your health by dedicating at least (bare minimum) 1 hour per week to exercise and 6-8 hours per day to sleep. Please speak to the instructor if you feel drained or exhausted or reach out to the many resources available on campus (see Resources section).

UF Student Success*:*

For improving study skills to connecting with a peer tutor, peer mentor, success coach, academic advisor, and wellness resources, go to http://studentsuccess.ufl.edu

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, please follow this link https://go.ufl.edu/syllabuspolicies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu