

BMEN 4222 Senior Design II Spring 2026

Welcome to UNT!

As members of the UNT community, we have all committed to being part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

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Lecture: T and Th, 10:30-11:20 AM @ DP-K150

Office Hours: M and W, 1-2 PM @ DP-K240J

Textbook: None

Course Description

Team biomedical engineering design project involving the development of problem statements, alternative approaches for a solution, product portfolio, specific system analysis, and design. Prerequisites: BMEN 4212 Senior Design I.

Course Objectives

Upon completing this course, students will understand how to develop a product or process portfolio with a marketing plan. Develop an understanding of the product development cycle from inception to a test model used in an industrial setting. Develop an appreciation of a team effort in product development. Prepare a formal technical document covering the actual design. Learn how to utilize catalogs, specification sheets, and vendor documents in the design process. Learn to apply the breadth of the significant engineering technology courses to the completion of the final design. Develop an appreciation for the requirements and techniques of an oral presentation covering a group effort. Develop an appreciation for the free market system.

ABET Outcomes: 1, 2, 3, 4, 5

1. Ability to identify, formulate, and solve complex engineering problems by applying engineering, science, and mathematics principles.
2. 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. Ability to communicate effectively with a range of audiences.
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. 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.

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A Brief List of Topics to Cover

- Engineering design project involving the development of alternative approaches for solutions.
- Implementation of design techniques and error analysis.
- Teamwork, leadership, collaboration, etc.
- Academic style writing and presentation.

Major Assignments

Attendance	5%	A	89.5 – 100%
Weekly Updates	10%	B	79.5 – 89.4%
Slide Presentation	32.5%	C	69.5 – 79.4%
Final Report	32.5%	D	59.5 – 69.4%
Poster Presentation	10%	F	< 59.5%
Sponsor/Advisor Feedback	5%		
Peer Evaluation	5%		

Important Dates

3/9-13	Spring Break, no class
3/22	Project abstract booklet due (subject to change)
4/19	Project poster due
4/24	Poster (AM) and slides (PM) presentations
5/3	Final proposal due

Course Policy

- Attendance is mandatory. Being late for more than 10 minutes to class is considered absent. <https://policy.unt.edu/policy/06-039>
- All assignments must be submitted to Canvas in the specified format. No handwriting, drawing, or email/message attachment will be accepted.
- No curving of grades will be made.
- Late policy: 2% deduction from the received raw score per hour of lateness.
- The schedule above is subject to change.

Academic Integrity Policy

- According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to, ***cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage***. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.
- Turnitin will be applied for similarity checks and AI-assisted writing checks. You are encouraged to check the Turnitin scores after each submission. ***A similarity score above 10% or an AI score (excluding your first-semester technical proposal) will be considered plagiarism and reported to the college.***