

MENG 4170 – Technical Undergraduate Internship
Course Syllabus

Semester / Year	Fall / Spring / Summer
Catalog Description	This course provides the opportunity for students to pursue enrichment and experiential learning in mechanical engineering outside the classroom, at a level appropriate for undergraduates. A minimum of 150 work hours are required during the internship experience under the supervision of a mentoring engineer at the workplace simultaneously with an advisor from the department of mechanical engineering. A written advisor evaluation and a technical report are required at the conclusion of the internship. A typical recommended setup to maximize benefit from such experience is for the student to be immersed in an engineering role within an engineering firm. Other experience can be accepted if approved by the advisor and the department.
Prerequisites	C grade or better in the following: MENG/CENG 3306 – Mechanics of Materials, ENGR 2302 – Dynamics, MATH 3305 and Consent of the department chair, or instructor of record.
Section Number	TBD
Instructor Name	TBD
Contact Information	TBD
Class Type / Instruction Mode / Location	Practicum
Class Time	One semester meeting on a date TBD
Office Hours	TBD
No. of Credits	1
Required Textbook	TBD
Optional References	TBD
Additional Rules and Requirements	Students are required to strictly follow the internship policy and guidelines as provided by the department.
Evaluation Method	Faculty advisor communicates with supervisor including a possible visit to the workplace, reports and forms to be filled, and satisfactory performance at the job Faculty evaluation (Form 3) 20 % Student evaluation (Form 4) 20 % Supervisor evaluation (Form 6) 20 % Final Report (Form 7) 30 % Faculty overall evaluation 10%
Grading Policy / Scale	=> 70 CR, < 70 NC
Important Events / Dates	Census date: January 23, 2023 Reports' due date: April 21, 2023

Attendance / Makeup policy / other rules	No makeup
Course Learning Objectives / ABET & PEOs Relation	<p>A student who has successfully completed this course should be able to:</p> <ol style="list-style-type: none"> 1. Describe the general structure and operation of typical engineering organization, as well as related business, economic, and professional constraints. 2. Describe the societal and ethical responsibility of an engineering operation or producer as well as their influence on environment and the profession. 3. Demonstrate an ability to function as an engineer in an industrial and professional environment. 4. Communicate engineering related material effectively in an engineering workplace environment and with outsiders. 5. Utilize skills, practices, and modern tools used in modern engineering organizations.
Tentative Topics / Course Plans	N/A
University Policies	https://www.uttyler.edu/academic-affairs/files/syllabus_information_2021.pdf

MENG 4170 – Technical Undergraduate Internship

Description, Requirement, and Procedure to Register in the Course for Academic Credit

As a form of student experience enrichment while studying engineering, an internship provides the opportunity for students to pursue experiential learning in mechanical engineering outside the classroom, at a level appropriate for undergraduates. A minimum of 150 work hours are required during the internship semester under the supervision of a mentoring engineer at the workplace simultaneously with an instructor from the faculty of the department of mechanical engineering. A typical recommended setup to maximize benefit from such experience is for the student to be immersed in an engineering role within an engineering firm. Other experience can be accepted if approved by the company advisor and the department. Students can engage in internship experiences without academic credit at any time. However, to obtain academic credit for an internship experience as the equivalent of a technical elective, the following conditions must be met (most of this information will be required on Form 1):

1. Engineering organization: An organization that has engineer(s) on staff where the intern would be supervised, mentored, or working with one of them regularly. The engineer(s) are preferred to be from a closely related field and should be professional in responding and communicating with the internship advisor from the ME department.
2. An offer letter must be provided showing details of the job description, expectations, tasks to be assigned, and the name of the engineer supervising the intern, as well as their contact information (both phone number and email). Preference is for paid internships.
3. Check with the department about the organization or company you intend to work with before approaching the company for an internship. Some organizations are not approved for internship that is credited for our students because of many reasons such as the type of tasks assigned to interns and responsiveness of supervisors.
4. Table 1 must be followed, and all forms mentioned in the table must be professionally completed (typed) and submitted on time.
5. Fill the application (FORM-1) from the packet, with all required information and submit it to the department, at least two weeks, or more from the beginning of the semester. All required attachments and conditions in the packet must be satisfied. Late submissions or missing required information will result in rejecting the request without notice.
6. A description of the proposed internship must be submitted to the ME department by the student working for the sponsoring company or organization, on Form 2.
7. An internship mentor/supervisor will be identified at the company or organization.
8. The proposal will include an outline of engineering-related duties and responsibilities to be undertaken by the student.
9. Specific deliverables that the student will make to the company or organization will be outlined.
10. The student will attach copies of his or her resume and unofficial transcripts to the proposal. All pre-requisites must be completed before the student is allowed to register for the internship course. As a reminder, these are: *C grade or better in the following: MENG/CENG 3306 – Mechanics of Materials, ENGR 2302 – Dynamics, MATH 3305 and Consent of the department chair, or instructor of record.*
11. The ME faculty assigned as the instructor for the Internship course will review the proposal and issue a decision regarding the approval of the internship, following the timeline in Table 1. Based on this approval, the student can register in the Internship course.
12. If needed, the ME faculty / Instructor must have the opportunity to visit the company or organization to meet with the student and internship mentor/supervisor during the course of the internship.

Notes:

1. The department reserves the right to reject any application for internship credit.
2. No internship will be counted or considered retroactively.

Table 1: Procedure and steps to register and complete the Internship Course for Credit.

No	Action	Related Form	Deadline (All calendar weeks)		
			Fall or Spring	Long Summer	Short Summer
1	Student with completed pre-requisites finds internship	Course Syllabus*	Before semester starts		
2	Student prepares the internship work proposal with host organization and prospective supervisor, and submits to the Internship faculty seeking approval	Description and Requirements of Internship Form 1: Proposal Packet	Two calendar weeks before the 1 st day of classes of the internship semester. No exceptions.		
3	Approval granted – Permission to register in the course granted		Within first two days of classes		
4	Student submit evaluation to faculty	Form 2: Student evaluation of internship experience	COB of last day in 10th week of the semester	COB of last day in 8th week of the semester	COB of last day in 3rd week of the semester
5	Faculty collects evaluation form from supervisor	Form 3: Supervisor evaluation of student performance	COB of last day in 12th week of the semester	COB of last day in 10th week of the semester	COB of last day in 4th week of the semester
6	Student submits final internship report	Form 4: Report requirements	COB of last day in 14th week of the semester	COB of last day in 12th week of the semester	COB of last day in 4th week of the semester
7	Faculty grades student work and issues a grade + Faculty collects related forms and products for each student and deposits in the department.	Syllabus for suggested grade distribution	Final grade submission deadline by university		

FORM # 1: MENG 4170 – Technical Undergraduate Internship Proposal

Part A: Instructions

Student Instructions:

Check with the department to find out if the company you are going to work for is approved for internship with academic credit.

Complete this form by typing the information. Consult with your supervisor when completing the job description. Some examples are provided at the end of the form in Part E to help you. Once completed, sign it, and have your supervisor sign it. Submit to the instructor of the internship course, at least two weeks before the first day of classes in the semester of the internship, all the following items:

1. This form (Form 1) Completed and signed.
2. Copy of Resume
3. Copy of Transcript showing completed pre-requisites
4. Offer letter
5. **International Students Only:** All paperwork approved by the international office (e.g. OPT approval)

Supervisor Instructions: Please review this form and consult with the student on the completion of the job description section. When completed, please sign and date. The student is responsible for submitting the form on time to the Department of Mechanical Engineering at UT-Tyler. If this proposal is approved, you'll receive a copy of the email approval sent to the student.

Part B: Student Information and agreement / Commitment

Table 1: Student Information.

Item	Information
Proposal Date of Submission	
Submitted by (Student name)	
Student ID #	
Semester of Internship Period of Internship	
Personal address while on internship	
Home address	
UT-Tyler Email	
Phone number	
How did you obtain this internship?	

Agreement - As an intern:

- I understand it is my responsibility to find out from my internship site the specific details of my duties, work schedule, compensation, and benefits.
- I understand that I will be subject to the rules and regulations of the internship site.

- I understand it is my responsibility to check with the Office of Student Financial Aid at UT-Tyler regarding the impact of employment on scholarships and loans.
- I agree to adhere to all rules, polices, assignments, and procedures as set forth in this course.
- I agree to fulfill my responsibilities to the internship course and the internship site.
- I agree to notify the internship instructor immediately of any changes after my assignment begins.

Part C: Employer Information

Table 2: Employer Information

Item	Information
Employer / Company / Organization name	
Address of Internship Location	
Supervisor official title and name	
Supervisor email	
Supervisor phone number	

Part D: Position Information and Job Description

Table 3: Position information and job description.

Item	Information
Official position Title:	
Number of hours per week:	<i>(A minimum of 150 hours in the internship semester are required)</i>
Job description	<i>(Include offer letter if applicable, refer to Part E for examples, use additional pages if needed)</i>

I verify that I have read and understand the contents of this proposal. I agree to accept and follow all stated policies and procedures.

SIGNATURES

Student: _____

Date: _____

Supervisor: _____

Date: _____

Part E: Examples of job description items

Notice that a job description includes goals of the work and could also include learning objectives for the intern. Examples of job description include a statement and items as follows: The incumbent will assist the (company name) in carrying out the following engineering tasks under the supervision of (supervisor):

- Planning, drilling, operating, supervising, and completing wells.
- Developing and reviewing geological prospects
- Evaluation of oil and gas production, injection, and disposal prospects
- Design and build of biomedical devices.
- Development of concepts as alternative designs for new structures
- Digital mapping and data handling
- Research and filing of various Railroad Commission forms and applications
- Production data retrieval and analysis
- Development of automation plans of current production facilities
- Computer software and hardware planning, support and troubleshooting
- Forensic engineer studies
- Research and data collection

FORM # 2: MENG 4170 – Student Evaluation of Internship Experience

Instructions: Please evaluate your work experience in each of the following areas and submit to your course instructor per the deadline described in Table 1.

Item	Information
Date of submission	
Student Name	
Employer Name & Location	
Supervisor Name	

Please use the following rating scale when filling the following tables or answering questions:

- | | | | |
|---|----------------|-----|--------------------|
| 1 | Unsatisfactory | 2 | Need improvement |
| 3 | Satisfactory | 4 | Above Satisfactory |
| 5 | Excellent | N/A | Not applicable |

Item evaluated	Rating	Comments / Examples
Training received		
Supervision and Mentoring received		
Feedback on work performed		
Interaction with co-workers		
Quality of work assigned		
Level of responsibility or autonomy provided		
Abilities and knowledge utilized		
Relevance of academic prep or relevant course taken		
Career / Professional knowledge gained		
Overall experience rating		

Describe work performed:

Would you consider permanent employment with this employer? _____ Yes _____ No

Comment on your academic preparation and if it helped you with this experience:

FORM # 3: MENG 4170 – Supervisor Evaluation of Student’s Performance Form

Student Instructions: Please forward the evaluation to your Supervisor. Your Supervisor should complete the form, provide feedback to you, and you both should sign it. Submit the completed and signed form to your faculty instructor of the internship course.

Supervisor Instructions: Please evaluate the student in each of the areas described. Factors to consider include duties and goals, corporate internship benchmarks, assignments/expectations, and achievements. Include comments, comparisons and examples. Please provide the student with feedback on their performance and sign the evaluation.

Item	Information
Date of submission	
Student Name	
Employer Name & Location	
Supervisor Name	

Please use the following rating scale when filling the following tables or answering questions:

- | | | | |
|---|----------------|-----|--------------------|
| 1 | Unsatisfactory | 2 | Need improvement |
| 3 | Satisfactory | 4 | Above Satisfactory |
| 5 | Excellent | N/A | Not applicable |

Item evaluated	Rating	Comments / Examples
Quality of work		
Communication Skills		
Problem Solving Skills		
Interaction with co-workers / Teamwork		
Academic Preparation		
Acceptance of responsibility		
Ability to utilize resources		
Acceptance of criticism and correction		
Work Ethics		
Overall rating		

Describe work assigned and student’s performance:

Would you consider hiring this student in the future? _____ Yes _____ No

Comment on areas needing improvement in student's preparation based on this experience:

SIGNATURES

Supervisor: _____ Student: _____

Title: _____ Date: _____

FORM # 4: MENG 4170 – Final Report Specifications and Requirements Form

6.1. Notice of Confidentiality: If you have performed your internship in an organization where information about the work is classified or proprietary, please consult with your course instructor and supervisor before you write your final report.

6.2. Front page of the report:

Final Report
MENG 4170 – Technical Undergraduate Internship

Department of Mechanical Engineering
College of Engineering
The University of Texas at Tyler

Project Title: [Insert project title]

Submitted by: [Insert student name]

Date submitted: [Insert date submitted]

Internship period / Semester : [Insert dates / Semester]

performed at: [Insert company/organization name]

Supervised by: [Insert Supervisor name]

Submitted to : [Insert Internship course instructor name]

Certification: I have been the primary project supervisor. I have read the report and approve of its content.

Supervisor Signature: _____

Supervisor printed name _____

Student signature _____

6.3. Report format:

Follow the technical writing standards and guidelines of the Department of Mechanical Engineering.

6.4. Report Content and Outline:

The final report on your internship is part of your semester grade. Approach it as you would any engineering report. You must cover the following points, in the order given, providing as much detail as possible and including specific examples. Sanitize any confidential or proprietary information you use in the report. Seek advice from your course instructor and supervisor on these issues:

1. Brief description of the company or organization and the products or services the company or organization provides.
2. Internship Goals: state the goals of your internship and which ones were achieved during the internship.

3. Work Performed: describe the general nature of the work that you did throughout the internship. Give a detailed description of the major project in which you were involved. Include:
 - a. Problem description: Provide a succinct description of the problem you are trying to solve. Include whether you were working alone or as part of a team. If part of a team, how many people were on the team and what part did you play on the team?
 - b. Resources: Where did you look for the solution to the problem - Books, Internet search, discussions with colleagues? Were you sent to a training course for a particular technology?
 - c. Methodology: How did you go about solving the problem? Did you create prototypes? If so, what did they reveal? What experiments did you perform?
 - d. Discussion: You gathered information in the steps above. How did this influence your results and conclusions?
 - e. Results: How did you present the results? To whom did you present the results? Was the problem solution acceptable? Why or why not?
 - f. Conclusions: What conclusion did you reach?
 - g. Recommendations: Provide suggestions on how you would better perform this task in the future.
4. Educational Value: describe what you learned about your career field and the business environment through the work you performed.
5. Relationship to Classroom Experience: describe any connections you found between the work you performed as an intern and your classroom experiences prior to and during the internship. Try to be very specific.
6. Professional development: Describe how you developed professionally (i.e., interpersonal communication skills, working with specific software, presentation skills).
7. Professional Value: describe the contacts made and future benefit of these contacts.
8. Evaluation of Internship Program 8.1. Describe what you consider to be the advantages and/or disadvantages of participating in the internship program.
9. Indicate your expectations about how the internship will change your approach to school and impact your career.
10. Appendices:
 - a. Include the proposal you submitted at the beginning of the course.
 - b. Include other information you deem pertinent to your report.