

UNIVERSITY OF UTAH
MATERIALS SCIENCE AND ENGINEERING INTERNSHIP – MSE 5800/5801

MSE 5800: Materials Science and Engineering Internship I - This course will allow students to earn academic credit for successful completion of a Materials Science and Engineering-related internship. To have an internship fulfill a Section 3 - Technical Elective requirement, students must earn a total of 3 credit hours and complete a graded Technical Report. The internship progress will be monitored, evaluated, and graded by the Internship Program Advisor. Students must take an active role in finding and applying for an appropriate internship before enrolling for the course.

MSE 5801: Materials Science and Engineering Internship II - This course is a continuation of MSE 5800. This course will allow students to earn academic credit for successful completion of a Materials Science and Engineering-related internship. To have an internship fulfill a Section 3 - Technical Elective requirement, students must earn a total of 3 credit hours and complete a graded Technical Report. The internship progress will be monitored, evaluated, and graded by the Internship Program Advisor. Students must take an active role in finding and applying for an appropriate internship before enrolling for the course.

Frequently Asked Questions

• **What kind of internship qualify?**

The internship must either be part-time for two semesters or full-time for one semester to qualify for credit. For internships to fulfill a Section 3 – Tech Elective, students must earn a total of 3 credit hours and complete a Technical Report. The internship must integrate college level academic study with work experience that strengthens and complements the education received in the department. All internship must receive prior approval by the Internship Program Advisor.

• **What is a Technical Report?**

For more information on the Technical Report requirements, please see page 3.

• **How does registration works?**

Part-time Internship: This option is for students employed in a part-time internship, usually working a minimum of 10 hours/week, and enrolled in the university as a full-time student (12 or more credit hours). Students must complete two semesters at a part-time internship to receive Tech Elective credit. Usually students will register for MSE 5800 for 1.0 credit in the Fall Semester and for MSE 5801 for 2.0 credits in the Spring Semester. The Technical Report will be due at the end of the second semester.

Full-time Internship: Most full-time internships are completed during a Summer Semester. At a minimum, students will work full time (40-hours/week) for one semester. Students are not required to register for summer classes if they are working at a full-time internship, but must register for MSE 5800 for 3.0 credit hours during the Fall Semester following the summer full-time internship. The Technical Report will be due at the end of the Fall Semester.

• **What Technical Elective does this fulfill?**

Students are able to fulfill a Section 3 – Technical Elective requirement. The Internship will not count towards fulfilling the required two MSE courses in Section 1 or the MET E course in Section 2. Only **one** Tech Elective may be cleared through an internship.

• **What are the benefits of this type of work?**

- Gain practical experience in chosen career field
- Work with qualified professionals
- Apply skills and knowledge learned in the classroom to actual job experiences
- Begin building a network for future employment opportunities
- Identify strengths and weaknesses
- Enhance academic experience by seeing the application of theoretical information

• **How do I get started?**

Students must meet with the Internship Program Advisor before an internship is approved for credit. See page 2 for more information.

UNIVERSITY OF UTAH
MATERIALS SCIENCE AND ENGINEERING INTERNSHIP – MSE 5800/5801

How to Get Started (please follow steps 1 through 3 in order):

1. Students are responsible for find his/her internship. All University of Utah students have a U Career Path account set up for them in Campus Information System. Students may post their resumes and receive information on available jobs and internships through U Career Path. For deadlines, procedures, and help with your resume, please see <http://careers.utah.edu/>.

Discuss with your employer possible learning objectives and come to a mutual agreement on four (4) learning objectives for your period of work. Finally, students will ask the supervisor to complete the enclosed final evaluation of your work.

2. Students must meet with the Internship Program Advisor before an internship is approved for credit. **This meeting should take place at least 1 month before students start an internship.** For the meeting, students should prepare a detailed job description reflecting the type of work he/she will be doing for the semester. Discuss any questions you may have about the Technical Report Requirements.
3. Upon approval, register for MSE 5800/5801 by requesting a permission code online (<https://mse.utah.edu/form-permission-code/>).
4. The Technical Report must be submitted to the Internship Program Advisor the week prior to finals, or if your work experience began mid-semester, 14 weeks after beginning the work.
5. The Technical Report comprises 7 sections: (See below for a more detailed description of the Technical Report)
 - Title Page
 - Job Description (the original job description copy you retained for this report)
 - List of Learning Objectives (item 3 on this sheet)
 - Abstract or Summary
 - Technical Report (10-15 pages exclusive of tables, figures, graphs, etc.)
 - Conclusions
 - Resume
 - Employer Evaluation (provided in this packet)

Keep in mind you are receiving technical elective credit for learning, not credit for working.

UNIVERSITY OF UTAH
MATERIALS SCIENCE AND ENGINEERING INTERNSHIP – MSE 5800/5801

STUDENT APPLICATION INFORMATION

Date: _____

Student Name: _____

Student ID #: _____

Email Address: _____

Home Phone: _____ Work Phone: _____

Major: _____ Grad Date: _____

Employer: _____

Employer's Address: _____

Supervisor's Name: _____

Supervisor's E-mail: _____

Student's Job Title: _____

Beginning Date: _____ Ending Date: _____

Rate of Pay: _____

of Hours Work/Week: _____

Semester/Year: _____

No. of Credit Hours: _____

Permission must be obtained to register for any number of credit hours per semester. Description of exception:

Please attach

1. Job description
2. List of four learning objectives

UNIVERSITY OF UTAH
MATERIALS SCIENCE AND ENGINEERING INTERNSHIP – MSE 5800/5801

TECHNICAL REPORT REQUIREMENTS

General Format

- Typed, double-spaced
- 15 to 20 Text pages in length (i.e., exclusive of figures, graphs, etc.)
- Spell and grammar checked; this should be a professional, college level report

1. Title Page

- Your name, ID number, major, course title, semester, date paper submitted
- Company name, supervisor's name

2. Job Description

- The original job description approved by Internship Program Advisor

3. Learning objectives

- Original learning objectives and modifications, if any, to those objectives

4. Abstract

- Brief summary of paper
- Prepare this abstract as a separate page, 100 words or less

5. Technical Report

- Discuss **in detail** all technical aspects of this internship as it relates to your program of courses. Information should be sufficiently explicit and detailed for the Internship Program Advisor understand the technical aspects of your work assignments
- This paper should not merely be a log of daily tasks, but should reflect research, analytical methods, and problem solving methods applied to the tasks performed, results and the impact of your results.
- Give examples that show the application of your education and knowledge of the work performed.
- Use illustration (tables, figures, drawings) that enhance the discussion of your work, being sensitive to proprietary information

6. Conclusions

- How did the projects and responsibilities relate to theory learned in the classroom?
- How will your experience help you back in classes?
- What have you discovered about the work place environment that will help you conduct a career search after graduation?

7. Resume

- Attach a current resume reflecting this most recent job experience

8. Student Evaluation

- You fill this in.

9. Final Employer Evaluation

- Your employment supervisor fills this in.
- **No grade will be given without the employer evaluation.**

The Technical Report must be submitted the week prior to finals, or if your work experience began mid-semester, 14 weeks after beginning the work.

Final Employer Evaluation

Directions to Employer Supervisor: This form is designed to help the student understand how his/her performance is perceived. Please meet with the student and discuss your evaluation.

Student Name: _____ Semester/Year: _____

Skills Mastery

1. What technical skills does the student contribute to your organization?

2. What personal attributes does the student demonstrate, i.e. leadership, team player, organizational, work ethic, etc?

University Preparation

3. How well has this university education prepared the student to be successful?

4. If you were able to contribute suggestions regarding academic curriculum for students, what would they be?

Corporate Culture

5. Does the student understand the goal of the organization and their role in its success?

6. How does the student measure up to existing employee standards? If a job were available when the student graduates, would you offer a full-time position?

7. As an experienced professional in a field related to this student's area of study, you have valuable insight into what is required to be successful on the job. What advice would you give that would contribute to his/her preparation for a chosen career?

Name: _____ Title: _____ Company: _____

Employer Learning Outcome Evaluation

Please rate the educational quality of the MSE internship by responding to the following series of statements. Circle the number which most appropriately describes your opinion.

ABET a through k	Evaluation (circle one) Ranking – 4 being the highest				Give Specific Comments/Suggestions
Do you feel the student has the ability to apply mathematical, scientific, and engineering knowledge to solve materials-related problems?	1	2	3	4	
Do you feel the student is able to design and conduct experiments, characterize materials, and properly interpret data in order to understand materials behavior?	1	2	3	4	
Do you feel the student is able to select or design a materials based system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability?	1	2	3	4	
Do you feel the student has the ability to function on multidisciplinary teams whose members have interdependent and complimentary skills?	1	2	3	4	
Do you feel the student has the ability to identify, formulate and solve materials-related problems?	1	2	3	4	
Does the student understand the professional and ethical responsibilities of engineers?	1	2	3	4	
Do you feel the student is able to communicate technical information effectively in oral and written form?	1	2	3	4	
Do you feel the student has acquired a broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context?	1	2	3	4	
Can the student recognize the need for, and an ability to engage in life-long learning?	1	2	3	4	
Do you feel the student has an understanding of contemporary issues and materials applications that affect the materials science and engineering profession?	1	2	3	4	
Do you feel the student has the ability to apply techniques, skills and modern engineering tools necessary in materials engineering practices?	1	2	3	4	

UNIVERSITY OF UTAH
MATERIALS SCIENCE AND ENGINEERING INTERNSHIP – MSE 5800/5801

Student Evaluation

Semester (circle one): Fall Spring Summer

Date: _____

This completed form should accurately assess your internship experience. It does not need to be reviewed by your employer.

Student: _____ Graduation Date: _____

Internship Employer: _____ Division: _____

Department: _____

Address: _____

Street

City

State

ZIP

Position Title: _____

Briefly describe your work assignment: _____

Supervisor: _____ HR Employer Coordinator: _____

Work Period Starting Date: _____ Anticipated Completion Date: _____

Regular Working Hours: Daily from _____ to _____; Saturday to _____

Regular overtime by days and hours, if any: _____

Average Overtime per Week (in hours): _____. Time Absent: _____ Causes: _____

Gross Pay Rate (mark one): _____ per Hour Week Month Estimated Total Gross Period Income: _____

Latest Change in Gross Pay from _____ to _____ per Hour Week Month Change effective: _____

Please rate the OVERALL quality and value of this Work Session by marking one of the following:

(1=Low, 10=High) 1 2 3 4 5 6 7 8 9 10

Internship Faculty Advisor: _____

On a scale of one to five, rate the following characteristics of your internship experience and your employer.

COMMENTS

1. Relationship of work to your academic/career interests.
 No Relationship 1 2 3 4 5 Highly Related

2. Were you adequately prepared academically for your assignment?
 Under Prepared 1 2 3 4 5 Over Prepared

3. Was your work assignment challenging?
 Little Challenge 1 2 3 4 5 Overwhelmed

4. Employer's understanding and management of the Internship.
 Poor 1 2 3 4 5 Excellent

5. Employer supervision and guidance during your Internship assignment.
 Poor 1 2 3 4 5 Excellent

6. Your relationship with your fellow employees.
 Poor 1 2 3 4 5 Excellent

7. Overall evaluation of your employer as a internship participant.
 Poor 1 2 3 4 5 Excellent

8. Did you have an exit interview with your Employer Coordinator? Yes No

9. Did you discuss this evaluation with your employer coordinator or supervisor? Yes No

How adequately were you compensated for your efforts during the work session in terms of:

	Poor			Excellent	
	1	2	3	4	5
Salary					
Recognition by co-workers					

How actively were your suggestions solicited for improvements in:

Co-Op Program with employer	1	2	3	4	5
Business/Technical Matters	1	2	3	4	5

What new skills did you learn during this internship session?

Suggestions for improvement of the program (use back of page if necessary):