

MTSE 4910.800 Supervised Undergraduate Research with Dr. Traum

Thermal-Fluid Sciences Group Meetings:
Fridays 11am – 12noon in UNTRP B140

Dr. Matthew J. Traum

Assistant Professor, UNT MEE Department

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Today's Agenda

1. New Progress Report Format
2. Update on MTSE 4910.800 Deadlines
3. Sign Up Teams for Seminar Talks
4. Instructional Seminar by Dr. Traum:
“Project Management Methods for Scientific Research - How to Write a Project Plan”

New Progress Report Format

Submit Forms Once Per Month

Keeps teams organized and on task

Self-monitor teams research progress

Track skills being learned and team accomplishments according to established ABET guidelines

Provides compact means to record activities for resume, CV building

Update on MTSE 4910.800 Deadlines

2/15/2008

Deadline to Submit Literature Review

2/29/2008

Deadline to Submit Research Project Plans

3/3/2008

Deadline for Submission to UNT Undergraduate Scholars Day

4/3/2008

UNT Undergraduate Scholars Day (attendance is expected)

5/1/2009

Deadline to publicly present research or receive 'F' in MTSE 4910.800

Teams Sign Up for Seminar Talks

3/14/2008

4/4/2008

4/11/2008

4/18/2008

4/25/2008

Project Management Methods for Scientific Research

How to Write a Project Plan

Dr. Matthew J. Traum

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Key Tool: Gantt Chart

	Timeframe 1	Timeframe 2	Timeframe 3	Timeframe 4	Deadline
Task 1					
Task 2					
Task 3					
Task 4					
Deliverable					

“Henry Laurence Gantt (1861-1919) was a mechanical engineer, management consultant and industry advisor. Henry Laurence Gantt developed Gantt charts in the second decade of the 20th century. Gantt charts were used as a visual tool to show scheduled and actual progress of projects. Accepted as a commonplace project management tool today, it was an innovation of world-wide importance in the 1920s. Gantt charts were used on large construction projects like the Hoover Dam started in 1931 and the interstate highway network started in 1956.”

<http://www.ganttcharts.com/History1.html> (last accessed 2/7/2008)

Parts of a Gantt Chart

Timeframe (days, weeks)

	Timeframe 1	Timeframe 2	Timeframe 3	Timeframe 4	Deadline
Task 1	█				
Task 2		█			
Task 3			█		
Task 4				█	
Deliverable					█

Tasks to Complete
In Route to
Deliverable

Tasks/Time
Assignment

Steps in Project Planning

1. Define project deliverable(s) in a quantitative manner
2. Determine deadline(s) of project deliverable(s)
3. Determine available resources to achieve deliverables
4. Develop set of realistic tasks that must be completed
5. Estimate quantity of time required to complete each task

Steps in Project Planning

6. Determine dependence of tasks upon each other
7. Place tasks in most logical order of execution
8. Assign resources to task with required completion times
9. Map out entire process in a Gantt chart
10. Iterate on 1 – 9 until deliverable(s) can be completed by deadline

Writing a Project Plan:

Purpose of the Exercise

The project plan's purpose is to force authors to clearly think out how to achieve a deliverable. The devil is in the details.

Four project questions are answered in a project plan:

Why project being sponsored? **What** is its value?

What work will be performed, and **what** are the major deliverables?

Who is involved and **what** are their responsibilities?

When will the ultimate deliverables be achieved? **When** will milestones be obtained?

Writing a Project Plan: Suggested Outline

1. Executive Summary: 1-page document summary
2. Table of contents (or outline)
3. Written description of project deliverable(s) and milestone(s) [A milestone is a marker of progress]
4. Summary of available resources (people and equipment) to achieve deliverables. Similar to management team.
5. Written description of tasks to complete with estimates of time required for completion.
6. Gantt Chart

Writing a Project Plan: Problems with this Method

“Research cannot be project-managed.”

-Matthew J. Traum

1. A project plan does not define **how** to achieve deliverables (that’s what degreed engineers are for).
2. Assumes the project has already been completed elsewhere (in other words task time estimates and expertise required are known).
3. Usually obsolete before printed.

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