

University of Nevada, Reno  
Department of Mechanical Engineering

**MECH 452**  
**Spring 1997**

Tentative Syllabus

Instructor:  
Dr. Wang  
118 Palmer Engineering  
784-6094  
ewang@me.unr.edu

Texts:

- **Product Design and Development**, Ulrich and Eppinger, McGraw-Hill.

References:

- **Startup: An Entrepreneur's Guide to Launching and Managing a New Business**, Stolze, Career Press, 2<sup>nd</sup> Edition.
- **Managing High-Tech Start-Ups**, MacVicar and Throne, Butterworth-Heinemann.
- **Corporate Imagination Plus - Five Steps to Translating Innovative Strengths into Action**, Bandrowski, The Free Press - Div. of MacMillan Publishers.

**Summary of Project**

<b>Week</b>	<b>Task</b>	<b>Max. Points</b>
1,2,3,4,5	Prepare written proposal and present to class.	2,000
6,7,8,9	Order materials, consider design problems and packaging of final product, progress reports 1 & 2.	3,000
10,11,12	Prototypes complete, prepare final engineering drawings for finished product, progress report 3.	2,000
13,14	Complete project, prepare final report or ASME paper.	1,000
15	Present completed project to ME faculty and invited guests.	2,000
	<b>Total points possible:</b>	<b>10,000</b>

Points	Week	Date	Time	Activity	Location
↑ 2000 pts ↓	1	W 1/22	11-12	First class, introduction - Dr. Wang	PE 103
		F 1/24	1-5	Lecture on writing proposals and how to order parts, submit final list of team members - Dr. Wang	PE 103
	2	M 1/27	11-12	Special Film	SEM 326
		W 1/29	11-12	Special Film	SEM 326
		F 1/31	1-5	Lecture on financial statements and fiscal reporting requirements for a company - Mr. Larry Mace, Grant Thornton	SEM 326
	3	M 2/3	11-12	Oral presentation skills and PowerPoint - Dr. Wang	PE 103
		W 2/5	11-12	Job search and employment strategies - Fabiola Chavez, UNR Career Development Center	PE 103
		F 2/7	1-5	The Dr. Kleppe innovation process and the development of new products	SEM 326
	4	M 2/10	11-12	Written proposals due, oral presentations	PE 103
		W 2/12	11-12	Oral presentations	PE 103
		F 2/14	1-5	Special lecture by an experienced entrepreneur, some case histories - Darren McBride, Sierra Computers, Inc.	SEM 326
	5	M 2/17	11-12	NO CLASS - President's Day	
		W 2/19	11-12	NO CLASS - Work on Projects	
		F 2/21	1-5	Lecture on patents, copyrights, and trademarks - Mr. Warren Kujawa, Law Offices of Graham and James, San Francisco.	SEM 326

3000 pts	6	M 2/24	11-12	Ethics in Engineering - Mr. Rich Minetto, Sierra Pacific Power.	PE 103
		W 2/26	11-12	“Working on Teams” - Mr. Jim Kubinex, Advanced Micro Devices.	SEM 326
		F 2/28	1-5	Submit progress report #1, oral presentations	
	7	M 3/3	11-12	NO CLASS - Work on projects	
		W 3/5	11-12	Lecture on the design and development of products for local area networks and what it is like to work for a large company - Mr. David Mallery, Hewlett Packard.	SEM 326
		F 3/7	1-5	Lecture on product liability - Mr. Don Sprague.	SEM 326
	8	M 3/10	11-12	Inventing - Mr. Don Costar	SEM 326
		W 3/12	11-12	How to start and run a consulting business - Mr. Bryan Leipper.	SEM 326
		F 3/14	1-5	Lecture on the methodology of product development - Mr. Dave Biggs, Bently-Nevada Corp.	SEM 326
	9	M 3/17	11-12	NO CLASS - Last Day to Order Parts - NO EXTENSIONS ALLOWED.	
		W 3/19	11-12	Lecture on starting a business and venture capital - Mr. Jack Slovak.	SEM 326
		F 3/21	1-5	Submit written progress report #2, oral presentations	PE 103

2000 pts	10	M 3/24	11-12	Experiences with starting and managing a high technology company - Mr. Tom Potter, Reno Agriculture and Electronic Inc.	SEM 326
		W 3/26	11-12	Experiences working with a small rapid growth high technology company - Mr. Mark Looney, UNR Grad, Interpoint Corporation.	SEM 326
		F 3/28	1-5	Lecture by Dr. Paul MacCready - Chairman of AeroVironment Inc., United States Inventor of the Year and recipient of many other rewards.	SEM 326
	11			SPRING BREAK 3/31-4/4	
	12	M 4/7	11-12	NO CLASS - submit progress report #3, No oral presentations	
		W 4/9	11-12	NO CLASS - work on projects	
F 4/11		1-5	Lecture on translating innovative strategies into action - Mr. Jim Bandrowski, Author of "Corporate Imagination - Plus".	SEM 326	
1000 pts	13	M 4/14	11-12	Small Business Innovation Research (SBIR) program, past, present and future - Dr. Kleppe.	SEM 326
		W 4/16	11-12	NO CLASS - Work on projects	
		F 4/18	1-5	"Managing High Tech Start-Ups" - Darwin Throne, Author and small business entrepreneur.	SEM 326
	14	M 4/21	11-12	NO CLASS - work on projects	
		W 4/23	11-12	NO CLASS - work on projects	
		F 4/25	1-5	Submit final reports, oral presentations	PE 103
2000 pts	15	M 4/28	11-12	NO CLASS - work on projects	
		W 4/30	11-12	NO CLASS - work on projects	
		F 5/2	1-5	Oral presentations of completed projects to ME Faculty and invited guests.	PE 103

**MECH 452 BUSINESS LICENSE APPLICATION**

Company Name: \_\_\_\_\_

Product Name: \_\_\_\_\_

All participating employees need to listed below. Their name, title, phone number, and signature must be included for consideration

NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

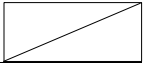
NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_  
EMAIL: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_

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**MECH 452  
Proposal Evaluation Sheet**

Company Name: \_\_\_\_\_  
Date: \_\_\_\_\_

Maximum Points	Actual Points
100	

Format: The proposal should be neat, well organized and easy to read.

Technical Background and Significance of the Problem or Opportunity: Make a clear statement of the significance of the specific technical problem or opportunity addressed. This section also should provide a thorough discussion of the technical background of the stated problem or opportunity. It is in this discussion that management determines the extent of the proposer's knowledge in this area.

100	
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Objectives: Briefly outline (a) the specific objectives of project, (b) technical approach to be used in solving the problem or developing the product and (c) the anticipated results of the project.

100	
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Research or Product/Process Development Plan: This is the principal part of the proposal. The research plan should include in narrative form a (1) technical discussion of the problem or opportunity and (2) discussion of how this research or R&D will achieve major benefits in terms of significant research results, improved products or processes, or in solving important technical problems which could substantially reduce costs or improve performance. Where possible, the methods and task to be performed should be outlined in logical sequence and explained in detail. Do not assume the reviewer will fill in the gaps in your logic.

100	
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Be candid and state where problems exist and additional work may be needed to prove your idea or innovative approach. Incremental improvements are not the objective of the MECH 452 program. High-risk innovations are. Factual rather than promotional information is requested.

Related Research or Product Development: Describe significant, recently completed or current research, product development or success that (a) you have achieved in the field and (b) others have achieved that is directly related to the proposed effort. Describe how this relates to the proposed effort and why your effort is different. You must demonstrate a knowledge of state-of-the-art R&D in your project area. The proposer should include a current bibliography of directly relevant technical literature that has been reviewed.

100	
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Key Personnel: Identify key personnel and describe directly related education and experience.

100	
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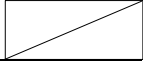
Facilities: Describe the relevant instrumentation and facilities available or required to complete the research or product development.

100	
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Budget: Include a budget that estimates the R&D costs and provides some market projections for expected revenues from the product development effort.

100	
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Oral Presentation: Should be no more than 10 minutes, well organized and use visual aids where needed.

200	
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Totals:

1000	
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Final Points Awarded: \_\_\_\_\_

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**MECH 452**  
**Personnel Evaluation Form**

Company Name: \_\_\_\_\_

Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

General Evaluation Concerning:

\_\_\_\_\_

First                      Middle                      Last

For the period of: \_\_\_\_\_ to \_\_\_\_\_

*Note: If you are not knowledgeable about a trait(s) - leave blank*

<b>Rating of General attributes:</b>	<b>Excels</b>	<b>Good</b>	<b>Average</b>	<b>Fair</b>	<b>Poor</b>
Ability to Express Self					
Judgment					
Cooperation					
Creativity					
Initiative					
Reliability					
Enthusiasm					
Technical Ability					

**I have read this evaluation and:**

**AGREE**

**DO NOT AGREE**

Signature of person being evaluated: \_\_\_\_\_ Date: \_\_\_\_\_