MSE602 – ENGINEERING INNOVATION MANAGEMENT (3 units)
CSUN – Summer 2012, Ticket 10753, Wednesday 7:00 p.m. – 9:45 p.m., Room: JD-3510

Instructor
Ghassan “Gus” H. Elias: BS/MS; Industrial/Manufacturing Systems Engineering.
- Faculty Email Address: Gus.Elias@csun.edu
- Faculty Office: JD-3308; Office Hours: Tuesday 6:00-7:00 p.m. (& by Appt.)
- MSEM Department Office: JD-4510; (818) 677-2167; email: msem@csun.edu

Textbooks

Lecture Slides
There are 8 lecture modules covering a broad spectrum of general managerial principles. These modules do not necessarily correspond with the sequence of Chapters & Topics covered in both textbooks.
The lecture slides are available at:
http://www.csun.edu/~ghe59995/MSE602/
So that you take “helpful” notes during the class lectures, please print each module and have the slides handy during each lecture session throughout the semester.

Good Reading
The Money Connection; Flanagan
Start Your Business: A Beginner's Guide; Reierson

References
The Management of Technology and Innovation; White & Bruton
Starting and Operating a Business in California; Jenkins
The Successful Business Organizer, Abrams
Managing Engineering and Technology (MSE504 textbook); Babcock & Morse

Course Purpose & Learning Objectives
This course is designed to contribute primarily to the students’ knowledge and understanding of:
1- emerging technologies and starting new technology-based enterprises.
2- facilitating the development of short/long-term plans to start, organize, manage and control new enterprises.
3- utilizing strategic, cognitive and effective capabilities/resources for the efficient management of small/medium/large scale engineering & technology endeavors.
4- contemporary managerial concepts, business approaches & economic concerns.
5- the necessity of independent learning while collaborating in team ventures.
6- composing successful business plans and communicating effectively.

Prerequisite
MSE504 (3 units) & MSE608C (3 units), and/or the instructor’s consent.
STANDARD OPERATING PROCEDURES

1. Class members are expected to maintain personal and professional standards consistent with the Code of Ethics of the National Society of Professional Engineers, the Preamble and Fundamental Canons of which are as follows:

   Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct. Engineers, in the fulfillment of their professional duties, shall:

   - Hold paramount the safety, health and welfare of the public.
   - Perform services only in areas of their competence.
   - Issue public statements only in an objective and truthful manner.
   - Act for each employer or client as faithful agents or trustees.
   - Avoid deceptive acts.
   - Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

   · using their knowledge and skill for the enhancement of human welfare;
   · being honest and impartial, and serving with fidelity the public, their employers and clients;
   · striving to increase the competence and prestige of the engineering profession; and
   · supporting the professional technical societies of their disciplines.

2. Students must take ORIGINAL NOTES and submit ONLY ORIGINAL WORK. Notes taken by other students in previous semesters are NOT allowed in the class.

3. Class members are expected to attend ALL class sessions, promptly & entirely and are responsible for the course material, reading assignments, class presentations, discussions, and practice problems. Tardy/Late submissions of assignments are unacceptable. NO EXCEPTIONS!

4. Class members must always be considerate and respectful to their colleagues.

5. Pagers, Cellular Phones, Alarms, etc., MUST BE TURNED OFF during class sessions throughout the semester. IMPORTANT NOTICE: The use of PC Laptops, cameras, video recorders, internet-ready devices, mobile phones, AND the exchange of textbooks or notes during the exams/quizzes is strictly prohibited. Violation of this policy will result in the student’s dismissal from the class and issuance of an “F” grade. NO EXCEPTIONS!

6. Activate and use your CSUN email address for ALL academic correspondences. Do NOT use your personal email address to communicate with the instructor. Messages from non-CSUN email addresses will NOT be acknowledged. Instructor will only utilize SOLAR’s email database to communicate with class members.
## COURSE PROPOSED PLAN

*(Tentative schedule: dates/assignments/topics covered may change if deemed necessary.)*

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic Area</th>
<th>Format &amp; Assignments</th>
</tr>
</thead>
</table>
| 01   | 05/30| Introduction; About Groups | Welcome session – getting acquainted with the course/instructor  
· Introducing the course packet and textbooks  
· Read Wharton: Introduction & Chapters 1 - 2;  
· Abrams: Cover Page through XXXVI, Chapter 1 & 2  
· Lecture Module 1: About Groups |
| 02   | 06/06| Technology and Innovation | Formation of venture proposal teams (done by instructor)  
· Read Wharton Chapters 3 & 5, and Abrams Chapters 3 & 5  
· Lecture Module 2: Technological Innovation |
| 03   | 06/13| Video: Venture Capitalists - Technological Forecasting | Read Wharton, Chapters 6 - 8, and Abrams Chapters 6 - 8  
· Assign team projects/topics  
· Lecture Module 3: Technological Forecasting |
| 04   | 06/20| Technological Strategy | Read Wharton Chapters 9 & 10, and Abrams Chapter 9 & 10  
· Lecture Module 4: Technological Strategy |
| 05   | 06/27| Evolving Organizations | Read Wharton Chapters 11 & 12, and Abrams Chapter 11 & 12  
· Lecture Module 5: Evolving Organizations  
· Midterm Exam Review & Format Outline |
| 06   | 07/04| No Class Instruction | July 4th Holiday  
· ENJOY |
| 07   | 07/11| Midterm (35%) | Chapters 1 - 12 (Wharton & Abrams), Lecture modules 1-4  
· Open Book & Notes |
| 08   | 07/18| Midterm Graded & Returned | OPEN LECTURE & MATERIAL REVIEW  
· Status Report #2: a revised milestone chart / progress report  
· Entrepreneurship/Intrapreneurship  
· Read Wharton Chapters 13 & 14, and Abrams Chapter 14 through 17  
· Lecture Module 6: Entrepreneurship & Intrapreneurship |
| 09   | 07/25| Form & Financing | Read Wharton Chapter 15 & 16, and Abrams Chapters 18 through 22  
· Lecture Module 7: Form & Financing |
| 10   | 08/01| Intellectual Property | Read Wharton, Chapters 17 & 18, and Abrams Chapters 23 – 27  
· Lecture Module 8: Intellectual Property |
| 11   | 08/08| Team Presentations (PPT) | Soft & Hard copies of both the Write-Up Report & PPT  
· Team/Peer assessment due (submitted by ALL class members) |
| 12   | 08/15| Final Exam (45%) | COMPREHENSIVE MATERIAL (Open Book & Notes)  
· Open Book & Notes - Wednesday 7:00 p.m. – 9:50 p.m. |
Course Structure

There are three learning activity tracks that run in parallel throughout this course. The first track entails presentations and discussions of topics particularly pertinent to advanced engineering, innovation and technology management. A second track involves reading assignments, exams (multiple-choice, true & false and write-up essays), and discussions addressing the management of technological innovation. The third track is the team research, compilation & presentation project pertaining to technological innovation, venture capital, business plans & exit strategies. By the second/third week of the semester, teams consisting of 4-6 members each will be established. Note: only the term project (venture proposal) will be a team effort. All other course tasks and requirements (exams, assignments, etc.) are done on an individual basis.

COURSE EVALUATION COMPONENTS
(Plus/minus grading is used – see page 5 for important information)

35% Midterm Exam - multiple choice, true/false and write-up essay questions. Covers certain reading assignments, discussion & lecture material. Open book & open notes: ONLY ORIGINAL WORK/NOTES ARE ALLOWED!

20% Group Term Project (Team Score & Individual Contribution Form Required):
- Team Presentation (Power-Point) – ALL team members must present!
- Formal/Comprehensive Written Proposal (15-20 pages)

Notes: - All groups will provide the instructor with the hard and soft copies of the assigned presentations.
- All students must fill out the Self/Peer Evaluation Form and submit to the instructor by the announced date.

45% Final Exam – COMPREHENSIVE MATERIAL
multiple choice, true/false and write-up essay questions. Open book & open notes: ONLY ORIGINAL WORK/NOTES ARE ALLOWED!

Letter-Grade Scale:

A ≥ 92    89 ≤ A- ≤ 92    85 ≤ B+ ≤ 89
80 ≤ B < 85  78 ≤ B- ≤ 80    75 ≤ C+ ≤ 78
70 ≤ C < 75    60 ≤ D ≤ 70    F ≤ 60

*** This course syllabus is your contract with the CECS, MSEM and the instructor. Students must read the syllabus thoroughly and adhere fully to ALL of the stated terms and listed guidelines. No Exceptions! ***

IMPORTANT NOTE: The last day to drop classes is 08-Jun-2012. Students must initiate this process; not faculty. Failure to formally drop a course will result in a “WU” grade which is equivalent to an “F” grade; affecting your cumulative GPA detrimentally.
For Your Information

* 'A' grade range (A to A-) is reserved for work that is exceptional. This means that it (1) is professional and reflects the writer's/s' careful consideration of audience and purpose; (2) shows perfect to near-perfect understanding of the necessary concepts and analytical tasks; (3) where appropriate, it shows the capacity to think creatively or to see implications beyond the immediate scope of the question; (4) contains all necessary information (invention); (5) is arranged in a logical manner (6), is memorable; (7) delivery is visually appealing; and (7) is free of mechanical errors and is formatted as specified. Work must be flawless to attain an A/A-. Work with minor flaws that is nonetheless excellent in other ways will earn an A-.

* A grade in the B range means that the work is acceptable at the graduate level (B- range) to very good (B/B+). This work satisfies all (B+) or most (B/B-) of the requirements of the question/research task, shows the capability to think beyond the task by relating it to other areas of knowledge in or outside of the course; is neatly presented and shows above-average use of academic English. If the work is decently written, is formatted basically correctly, and covers most of the required content, but has several minor flaws or one major flaw, the grade will be B-.

* A grade in the C range means that the work, while covering much of the required ground, does not show graduate-level analytic and expressive ability. That is, major and minor items may be missing or incorrect; and while the language may communicate most points adequately, it does not qualify as above-average academic work.

* A grade in the D range shows that the work does not, overall, achieve an acceptable level of coverage of the requirements AND/OR the language is insufficient to make the writer's points understandable to the reader. The content may be either incorrect to an unacceptable degree, or very incomplete.

* A grade of F indicates that so little of the required content is covered that grading the paper is an exercise in futility. It may mean that very major points have clearly not been grasped or have been misunderstood by the student. An F may also indicate that the ideas are expressed in such a way that they are not at all understandable to the reader. A grade of F is also awarded when assigned work is not handed in, or not handed in by the set deadline.

========================
### Oral Presentations Scoring Rubric

<table>
<thead>
<tr>
<th>RESPONSE TO ASSIGNMENT</th>
<th>ORAL PRESENTATION</th>
<th>ORGANIZATION: FORMATTING</th>
<th>ORGANIZATIONAL SKILLS</th>
<th>PROFESSIONAL CONCLUSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent (4)</td>
<td>The presentation addresses the topic and all requirements completely, and the conclusion is clear and appropriate for the intended audience.</td>
<td>The visual aids are informative, well designed, easy to read, and complement the speaker's content.</td>
<td>The speaker is well prepared and familiar with the content, establishes a clear and coherent argument, and communicates the information effectively.</td>
<td>Key points are clearly highlighted, and the conclusion is a coherent summary of the main points.</td>
</tr>
<tr>
<td>Good (3)</td>
<td>The presentation addresses the topic and all requirements appropriately, but has more weaknesses with respect to some of the requirements.</td>
<td>The visual aids are informative and generally supportive of the presentation, but some lapses in decorum detract from the presentation's impact.</td>
<td>The speaker is well prepared and familiar with the content, establishes a clear and coherent argument, and communicates the information effectively, but has some weakness in the visual aids or cue cards.</td>
<td>Some weaknesses in the visual aids, but the conclusion is clearly stated and appropriate for the intended audience.</td>
</tr>
<tr>
<td>Adequate (2)</td>
<td>The presentation has a conclusion but some of the key points are not sufficient, and discussion contains unnecessary or trivial material.</td>
<td>The visual aids are generally supportive of the presentation, but has significant weaknesses with respect to some of the requirements.</td>
<td>The speaker is prepared and has to rely on visual aids or cue cards, but uses them effectively to convey the information.</td>
<td>The conclusion is not substantial in relation to the main content.</td>
</tr>
<tr>
<td>Weak (1)</td>
<td>The presentation has a brief conclusion but is not substantial in content.</td>
<td>The visual aids are not designed to effectively convey the information intended by the speaker.</td>
<td>The presentation does not respond to many of the requirements of the assignment, and is not significant to support the main points.</td>
<td>The presentation just seems to end abruptly without any summation for the audience.</td>
</tr>
</tbody>
</table>