Instructor  
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Textbook  
No single suitable text has been identified, nor has an affordable set of texts. A selected set of readings and power-point slides have being created and uploaded for you. *Course reading materials will also be available at the library reserves.*

Suggested Reading References & Books:
- “Re-Engineering Female Friendly Science”. New York, Teachers College Press, 1997, Rosser, Sue. V.
- “The Science of the Glass Ceiling: Academic Women Scientists and the Struggle to Succeed”, Rosser, Sue. V.
- “Teaching the Majority”. Teachers College Press, New York, 1995, Rosser, Sue. V.

Lecture Slides  
The PowerPoint presentations are available in the “Courses” section of my CSUN web-page: [http://www.csun.edu/~ghe59995/](http://www.csun.edu/~ghe59995/)

Catalog Description  
Prerequisite: Completion of lower-division writing requirement.

An exploration of the activities, contribution, and struggle of women in mathematics, science, engineering, and related areas and professions such as technology and computer science. Research in individual women engaged in these fields. Investigation of different international, ethnic and culture-based practices and perspectives. Consideration of policy-related issue and intervention strategies addressing the participation and achievement of women in pertinent areas of study (Available for General Education, Comparative Culture Studies).

**COURSE OBJECTIVES**

This course is designed to facilitate ability to:

- Identify and describe the roles of women in mathematics, science, engineering, and related areas.
- Identify and describe individual women engaged in relevant fields of study and their contribution.
- Describe and analyze the implications of discrimination against women in relevant fields of study.
- Describe and analyze how selected international, ethnic, and culture-based differences shape women’s experiences in the fields of study being considered.
- Explain how policies and intervention strategies affect the participation of women in pertinent fields of study.
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 participate on MOODLE, and are responsible for the course material, reading assignments, class presentations, and discussions threads. Tardy/Late submissions of assignments are unacceptable. NO EXCEPTIONS!

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

5. Group projects will be assigned, however the midterm and the final exam are done on an individual basis. Each student will individually take the 2 exams (TBA) without interacting with anyone else. Violation of this policy will result in the student’s dismissal from the class and issuance of an “F” grade for the course. NO EXCEPTIONS!

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

7. IMPORTANT NOTICE: Please check CSUN’s course-drop policy and the last day to drop classes. Students must initiate this process; not faculty. Failure to formally drop a course will result in an “WU or F” grade which affects your GPA detrimentally.

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**COURSE PLAN**
*(Tentative guidelines – the schedule may change if deemed necessary)*

Depending on the progress of the course material, the dates/topics/assignments/exams *may change* if deemed necessary. Assigned H.W. is due the a week later -- unless otherwise instructed.

**Note:** Several individual and/or team presentations will be given throughout the semester.

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<thead>
<tr>
<th>Week</th>
<th>Month</th>
<th>Topic</th>
<th>Material</th>
<th>Task</th>
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<tbody>
<tr>
<td>2 or 3</td>
<td>July</td>
<td>Midterm Exam (30 points) - MOODLE</td>
<td>TBA</td>
<td>Open book/Open notes</td>
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<td>Format: True/False, Multiple Choice, &amp; Essays</td>
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</tbody>
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3. August

<table>
<thead>
<tr>
<th>Topic</th>
<th>Material</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam (40 points)</td>
<td>Comprehensive</td>
<td>Open book/Open notes</td>
</tr>
</tbody>
</table>

| Format: True/False, Multiple Choice, & Essays |

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**Proposed Schedule (may change if necessary!)

**WEEK**

1-2

*Introduction to Women in Mathematics, Science & Engineering.*

3-5

**Part 1:** Participation of Women in Mathematics, Science, Engineering & Technology, from antiquity to present.

- 1-1 Early women scientists and engineers
- 1-2 Women and science in the ancient world
- 1-3 Women’s education in Mathematics, Science, and Engineering.
- 1-4 Women’s work in Science, Mathematics, Engineering and related area.

6-8

**Part 2:** Study of selected individual women & their professional contributions to Mathematics, Science, Engineering & related areas.

- 2-1 Rosalind Elsie Franklin
- 2-2 Jewel Isadora Plummer Cobb
- 2-3 Sheila Evans Widnall
- 2-4 Barbara McClintock
- 2-5 Marie Curie
- 2-6 Christine Ladd-Franklin
- 2-7 Lillian Miller Gilbreth
Part 3: Consideration of social norms, professional practices and legal systems, and their implications regarding the marginalization of women in mathematics, science, engineering & related areas & professions such as computer science.

- 3-1 How does the image of Engineering affect recruitment & retention?
- 3-2 Canadian attitudes toward the employment of women.
- 3-3 Access & Merit: A debate on engineering women in science & engineering in Canada.
- 3-4 admittedly unequal.
- 3-5 Barriers to women’s participation in science Mathematics and Engineering.
- 3-6 Affirmative action; Controversy & opportunity.
- 3-7 Mathematicians & Engineering; limits on women and the field.

Part 4: Investigation of policies & policy-related issues, and experimental intervention strategies and their effects. Identification and implementation of relevant exploratory research.

- 4-1 The 3Rs(Recruitment, Retention, Returning
- 4-2 The Re-entering Woman Scientist
- 4-3 Recruitment and Advancement: Women in Science and Engineering
- 4-4 Beyond Gender Schemes, Improving the advancement of women in Academia
- 4-5 working for change

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COURSE EVALUATION / GRADE SCALE

(Refer to the last page of the syllabus for more information on grades)

(30 pts) - Homework and other special assignments/presentations* (to be announced).

Research based projects requiring a PPT presentation and a report write-up.

*Several team presentations on a selected aspect of Engineering and Technology Management (topic assignments are made by the instructor).

NOTE: Submittal of the Self & Peer Evaluation Form is MANDATORY.
You can download the form via the MSE302 webpage.

(30 pts) - Mid Term Exam (specific material) – based on class discussion, homework and reading assignments.

Format: True/False, Multiple Choice, & Essay Questions.
Open Book/Open Notes: Via MOODLE

(40 pts) - Final Exam (comprehensive) – based on class discussion, handouts, homework and reading assignments.

Format: True/False, Multiple Choice, Essay Questions
Open Book/Open Notes: Via MOODLE.

Letter-Grade Scale:

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\begin{array}{ccc}
A & 88 \leq A- < 90 & 85 \leq B+ < 88 \\
80 \leq B < 85 & 78 \leq B- < 80 & 75 \leq C+ < 78 \\
70 \leq C < 75 & 60 \leq D < 70 & F < 60 \\
\end{array}
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*** 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! ***

Academic Dishonesty:

Academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form at California State University Northridge. All students involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension and/or expulsion from the University.

Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person. The instructor reserves the right to submit your papers to turnitin.com for identifying papers containing unoriginal material.
For Your Information: Grade Evaluation Criterion

* '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 (8) 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 tasks, 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 is 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.