MSE302- WOMEN IN MATHEMATICS, SCIENCE & ENGINEERING (3 units)  
CSUN - Spring 2019, Ticket 16827, Fully Online Offering via CANVAS.

Instructor  Ghassan “Gus” H. Elias: BS/MS; Industrial/Manufacturing Systems Engineering  
-Expertise: Engineering Consulting, Decision-Making/Risk Analysis and  
Facility Planning. Quality Assurance & Control, Industrial Safety & Material Control - global  
certification programs for installing & commissioning electronic & pneumatic devices in General  
(Non-Hazardous) Locations, Hazardous ‘Classified’ Areas & Potentially Explosive Atmospheres.  
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Faculty Office: JD-3308  
Office hours: contact by Email & Via CANVAS

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/

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.

2. Students must submit **ORIGINAL WORK** only.

3. Students are expected to participate in **ALL discussion threads on CANVAS**.

4. Class members are **responsible** for the course material, reading assignments, presentations and discussions.

5. **Tardy/Late submissions are unacceptable....NO EXCEPTIONS!**

6. Class members **MUST** always be **considerate & respectful** to their colleagues and to the instructor.

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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! ***

**NOTE #1:** 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.

**NOTE #2:** The last day to drop classes is **15-Feb-2019**. 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.

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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.

<table>
<thead>
<tr>
<th>Week</th>
<th>Month</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td><strong>Throughout the Semester</strong> ---</td>
<td></td>
<td>Mandatory Contribution to the Weekly Discussion Forums on CANVAS (10%).</td>
</tr>
</tbody>
</table>
| 8 | Mar | Midterm Exam (35%) - CANVAS (Mar 11th-15th)  
ALL material covered in Weeks 1-7.  
Format: True/False, Multiple Choice & Essays.  
Open book/Open notes |
| | | **SPECIFIC Date/Time slot is to be announced** (ALL students will take the exam at the same time). |
| 15 | | Group Power Point Presentation (20%)  
**Self & Peer Evaluation Form Due**  
***Term Project PPT File Due***: Friday, April 26th, 2019 by 9:00 pm (PST) |
| **Important Notes**: | 1- | By not submitting the SPEF will cause the student to forfeit the +/- sign for the course grade. |
| | 2- | By not contributing to the group term project, the student will then receive 0/20 points. **No EXCEPTIONS!!!** |
| 17 | May | Final Exam (35%) - CANVAS (Comprehensive)  
Format: True/False, Multiple Choice & Essays.  
Open book/Open notes  
**SPECIFIC Date/Time slot is to be announced** (ALL students will take the exam at the same time). |

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**Note #1**: In order to deter PLAGIARISM, the midterm and final exams time & date will be set and announced whereby ALL class members will take them synchronously. Once set, students will have to work out their schedules accordingly to take the exams. The two exams "may" be administered on campus which requires your physical attendance.

**NO EXCEPTIONS will be made whatsoever!!!**

These are the ONLY two (2) date/time slots that are pre-set and mandated (required) in the entire semester --- ALL students must adhere to the announcements that will be made timely. Ample time will be given to the class so that you prepare well for the 2 fully-online exams.

**Note #2**: The weekly PowerPoint lecture presentations will be made available to all students via specific hyperlinks and postings on CANVAS.

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Page 3 of 7
Proposed Schedule *(may change if necessary!)*

**WEEK**


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.

6-9  **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

10-12 **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

COURSE EVALUATION / GRADE SCALE

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

(10 pts) Throughout the Semester --- Mandatory Contribution to the Weekly Discussion Forums on CANVAS.
  Important Note: The weekly discussions are locked for a 1-week period -- If you miss it, you lose it !!

(20 pts) - Group Term Project: Research & PPT Presentation.* (to be announced).
  Research based projects requiring a PPT presentation -- assigned by the instructor).

  Submittal of the Self & Peer Evaluation Form (SPEF) is MANDATORY.
  You can download the form via the MSE302 webpage.

Important Notes:
1- By not submitting the SPEF will cause the student to forfeit the +/- sign for the course grade.

2- By not contributing to the group term project, the student will then receive 0/20 points. No EXCEPTIONS !!

(35 pts) - Mid Term Exam (specific material) -- based on class discussion, homework and reading assignments.
  Format: True/False, Multiple Choice, & Essay Questions.
  Via CANVAS

(35 pts) - Final Exam (comprehensive) – based on class discussion, handouts, homework and reading assignments.
  Format: True/False, Multiple Choice, Essay Questions.
  Via CANVAS

Letter-Grade Scale (Curving of grades will NOT utilized!):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90+</td>
</tr>
<tr>
<td>A-</td>
<td>88-89</td>
</tr>
<tr>
<td>B+</td>
<td>85-87</td>
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<tr>
<td>B</td>
<td>80-84</td>
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<td>B-</td>
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<td>C</td>
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<tr>
<td>D</td>
<td>60-69</td>
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<tr>
<td>F</td>
<td>59-00</td>
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Page 5 of 7
GROUP TERM PROJECT GUIDELINES:
- Groups will be randomly assembled to consist of 4-6 members each.
- Topics for the group term project will be assigned by the instructor.
- The term project is worth 20% of the course overall grade.
- All class members will participate in the research task & presentation.
- The mandatory “Self & Peer Evaluation Form” (downloaded from the course website) is due on 26-Apr-2019. Submitting the form is mandatory by all class members. The form should be “typed” and not hand-written or scanned. Students will individually and confidentially submit the form to the instructor via email to: Gus.Elias@csun.edu as a PDF.

The complete Project PPT file is due by email to the instructor (one email per group!) on 26-Apr-2019.

It is a fundamental principle of academic integrity that the authorship of the intellectual content of works submitted as part of a class assignment must be fairly represented. Contributions of language and thought must be appropriately credited.

The PPT must contain 30-35 slides and should be done professionally. The presentation must be informative, creative, rich, insightful and user-friendly.

Submissions that do not conform to the above format will not be accepted.

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.

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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.