ME 658 Course Syllabus

**Prerequisites:** ME 452 or equivalent

**Instructor:** Fletcher J. Miller, Ph.D. in Mechanical Engineering, UCB 1988.

**Class Hours:** Monday/Wednesday 19:00 – 20:15, E-427

**Course Attendance:** Students are expected to attend each class and to participate in discussions and answer occasional questions. Attendance is not the same as participation; active engagement is encouraged. If you will miss a class, please send an e-mail ahead of time. More than four unexcused absences or no participation will result in the grade being lowered 1/3 (Example A becomes A-; A- becomes B+, etc.).
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Credit: 3 units credit

Contact Info: E 323J Engineering Building
Tel. 619-594-5791, fax 619-594-3599
fletcher.miller@sdsu.edu

Office Hours: TuTh. 14:30 – 15:30, or other times by advance appointment (please send e-mail or call).

Textbook: *Radiative Heat Transfer, 3rd Ed.*, Michael Modest. Other books may be put on reserve in the library, and will be announced in class if/when needed.
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Software: Students are also expected to have access to Excel or Matlab, since some assignments may be given that require calculations or graphs best done with a spreadsheet.

Homework: Homework will be assigned approximately weekly and count toward your grade as below. Homework should be undertaken on your own, but I encourage you to ask questions of me or your classmates as needed. Copying an assignment from someone else is, of course, not permitted, and will result in a zero on that assignment and further actions if it is persistent.

Examinations: There will be one midterm examination during the semester and a comprehensive final examination.

Final Exam: Wed., May 11th, 2016, 19:00 -21:00 (7 PM to 9 PM)
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Grading: Homework
One examination during the semester
Final examination
(See also statement about participation above)

Classroom behavior: Use of electronics (laptops, cell-phones, music players, etc.) is prohibited during class time, except as approved as part of the lesson. Please turn cell-phones off during the class; advance permission to keep them on with a justifiable reason can be requested. Eating during class is also prohibited.
Americans with Disabilities Act (ADA) Accommodation:

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.
Computer/internet access requirement:

At San Diego State University, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. In the curriculum and class assignments, students are presumed to have access to a computer workstation and the necessary communication links to the Internet and the University’s information resources.

Syllabus is Subject to Change:

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent.
Student Learning Outcomes

1. Appreciation of the breadth and importance of radiation heat transfer.

2. Qualitative analysis of radiation phenomena and recognition of radiation heat transfer in every day life and real situations.

3. Understanding of blackbody radiation and radiation terminology.

4. Recognition and classification of the surface radiative properties of real materials.

5. Calculation of net radiation exchange between surfaces and in an enclosure.
Student Learning Outcomes

6. Evaluation of heat transfer when conduction and/or convection are also present.

7. Determination of radiative properties of participating media.

8. Engineering modeling of radiation heat transfer in the presence of participating media.

9. Calculation of radiation heat transfer through windows and other partly transmitting surfaces.

Time Permitting:


11. Inclusion of convection heat transfer in participating media.