
MEC 502 CONDUCTION AND RADIATION HEAT TRANSFER

Fall 2016

Prof. Lin-Shu Wang

214 Heavy Engineering

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Lectures: Monday 4:00- 6:50PM at Humanities 3018 (08/29/2016 - 12/05/2019)

Office Hours: Monday & Wednesday 11:00AM-1:00PM

Course Description: Fundamental aspects of heat conduction and radiation will be covered. Lectures will present basic laws and macroscopic equations for heat transfer as well as analytical solution techniques...

Credits: 3 Grading: A-F

Textbooks: Y. Yener and S. Kakac *Heat Conduction, 4th edition* (Taylor & Francis)
M.F. Modest *Radiative Heat Transfer, 3rd edition* (Academic Press)

Tentative Lecture Schedule

Week-Date	Topic
1- 08/29	Introduction/Basic Concepts (Ch. 1)
2- 09/12	Heat Conduction Equations (Ch. 2)
3- 09/19	1-D, Steady-state Heat Conduction (Ch. 3)
4 -09/26	Scaling Analysis and Lumped Analysis (Ch. 6)
5- 10/03	Solution techniques #1: Characteristic values and functions (Ch. 4)
6- 10/10	Solution techniques #1: Separation of variables (Ch. 5)
7- 10/17	Solution techniques #2: Laplace Transforms (Ch. 8)
8- 10/24	Heat Radiation: Definitions/Basic Concepts (Modest: Ch. 1)
9- 10/31: 4PM- 6:30PM	MIDTERM
11- 11/07	Radiation Equations (Ch. 3)
11- 11/14	Ideal (Black/White) Body Radiant Heat Exchange (Ch. 4)
12- 11/21	Real (Gray) Body Radiant Heat Exchange (Ch. 5)
13- 11/28	Special topic: Radiant heating/cooling & thermal homeostasis in buildings
14- 12/05	FINAL EXAM
12/13 (Tu): Per. 5	FINAL EXAM

Grade:

Midterm (Closed book): 40%

Final (Open book): 55%

HW: 5% (I will collect the homework but will not return them back to you

(keep a copy for yourself for each submission). The solutions from Solution Manual will be made available in due time; the submitted homework will be graded but, again, not returned.)

Americans with Disabilities Act: If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC(Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.<http://studentaffairs.stonybrook.edu/dss/index.shtml>.

Academic Integrity: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

