

ETLS 591 – Advanced Thermal Sciences

Fall 2009

- Instructor:** Ephraim M. Sparrow
assisted by
Reza Ramazani-Rend
Zach Helgeson
- Time:** Wednesday Evening (5:30-8:30 pm)
- Location:** OSS LL 10 for Lecture and Lab
- Contact info:** E-Mail: sparrow@umn.edu
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- Phone number for Eph: 612-625-5502
- Required Text:** None
Each student will receive each week an essay delivered to her/his inbox.
- Supplementary Materials:** Supplementary materials may be handed out in class and will be posted online.
- Course Description:** This course provides an overview of fluid mechanics and heat transfer with a focus on the design of thermal systems. These systems include applications in the biomedical, aerospace, manufacturing, HVAC, and electronic cooling.
- Course Objectives:** (a) To provide modeling and simulation tools for solving real-world problems
(b) To provide visual exposure of fundamental to promote deep understanding of physical processes.
- Prerequisites:** Students should be familiar with the topics of structural mechanics (deformable body mechanics) and heat transfer. These courses are equivalent to ENGR 221 and ENGR 382 from UST.

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Course Methodology: Lectures and demonstrations of software.

Grading Policy: Examinations: none
Homework: 25%
Projects: 55%
Attendance: 20%
A – Students who receive an A have demonstrated mastery of all the course's learning objectives.
B – Students who receive a B have demonstrated mastery or near mastery of all the courses learning objectives.
C – Students who receive a C have demonstrated a basic understanding of the course learning objectives.
D – Students who receive a D have not demonstrated substantial understanding of the course objectives.
F (or N) – represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.
I – Incomplete – assigned at the discretion of the instructor when, due to extraordinary circumstances, e.g., hospitalization, a student is prevented from completing the work of the course on time. Requires a written agreement between instructor and student.

Attendance Policy: Perfect attendance is defined as being present at all classes minus one.
Students are expected to attend all class sessions. Circumstances that prevent attendance will be honored up to three instances. More than three absences may result in an incomplete grade for the course. Contact the instructor when a special situation arises. All absences require that the instructor be informed in advance.

Students with Disabilities Qualified students with documented disabilities who may need classroom accommodations for this course should make an appointment with the Enhancement Program – Disability Services office. Students are invited to contact the Enhancement Program – Disability Services about accommodations for this course. Telephone appointments are available to students as needed. Appointments can be made by

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calling 651-962-6315 or 800-328-6819, extension 6315. You may also make an appointment in person in O'Shaughnessy Educational Center, room 119. For further information, you can locate the Enhancement Program on the web at <http://www.stthomas.edu/enhancementprog>

Late Assignments: Late assignments will not be accepted.

Academic Dishonesty: Academic dishonesty in any portion of the academic work for this course shall be grounds for a grade of F or N for the entire course. All students are expected to understand and follow the University of St. Thomas policies on Academic Integrity. These are described at: www.stthomas.edu/engineering/graduate/policies

Instructor Bio: See www.stthomas.edu/engineering/faculty/emSparrow.htm
