

TUSKEGEE UNIVERSITY
COLLEGE OF ENGINEERING
DEPARTMENTS OF CHEMICAL AND MECHANICAL ENGINEERING
CENG 0320 – UNIT OPERATIONS LABORATORY I
MENG 0412 – THERMAL SCIENCES LABORATORY
Fall 2023
2:00 – 5:00 pm (Tuesday) and 2:00 – 4:00 pm (Friday)
Room #151

INSTRUCTOR: Dr. Shamim Ara Begum (T)
OFFICES: 522E Luther H. Foster Hall
OFFICE HOURS: MW: 9-11; 1-3:30; Th: 11:30-12:30
TELEPHONE: (334) 727-8795 (office)
FAX: (334) 724-4188
E-MAIL: sbegum@tuskegee.edu

INSTRUCTOR: Dr. John Solomon (F)
OFFICE: 237 Luther H. Foster Hall
OFFICE HOURS: TTh: 10:00 – 12:00; 1:00-2:00
TELEPHONE: 334-727-8983
FAX: 334-727-8090
E-MAIL: jsolomon@tuskegee.edu

COURSE OBJECTIVES AND TASKS:

Objectives	Tasks
Students will: <ol style="list-style-type: none"> 1. Collect and analyze experimental data for the understanding of basic fluid mechanics and heat transfer concepts 2. Devel 0 0 1 f0 	<ol style="list-style-type: none"> 1. Conduct Fluid Mechanics experiments. 2. Conduct Heat Transfer experiments.

training.

Additional policies will be issued, if they are necessary.

**Student's
responsibilities:**

You are required to submit a copy of each PowerPoint presentation and design report on the CANVAS/email, and also submit a hard copy of design report on the due date in the class.

You are required to submit a lab report and the Excel spreadsheet containing calculations and graphs for each report on the CANVAS/Email. In addition, you need to turn in a hard copy of the lab report with spreadsheet in Appendix during lab class when the report is due.

Learn techniques and formats of writing good technical reports.

Experimental data should be presented in a nice tabular form (Excel).

All figures must be drawn properly with proper symbols, legends, titles, etc. (Excel).

Report should be typed (or use any word processing on computer) in proper format (see hand-out) and must be submitted on time by the due date. Do not submit loose papers. All papers per 7 400.63 312.38 reW15-

4	RADIAL HEAT CONDUCTION	Perform experiments in conduction and learn the principles behind these experiments
5	EXTENDED SURFACE HEAT TRANSFER	Conduct experiments on heat transfer using an extended surface and compare results with published data
6	LINEAR HEAT CONDUCTION	Perform experiments on conduction heat transfer and learn the principles behind these experiments
7	TUBULAR HEAT EXCHANGER	Conduct experiments on a tubular heat exchanger to learn about principles associated with the heat exchanger
8	UNSTEADY STATE HEAT TRANSFER - CROSSFLOW HEAT EXCHANGER	Conduct experiments on unsteady heat transfer

COVID Policy:

related to **Covid infection** as well as exposure have to be received from the Dean of Students office. Students should request the excuse for absence from the Dean of Students office as soon as they become aware of covid infection or exposure. Students may request a classes missed memo by completing this form (<https://forms.gle/4ozusHX2tTCUW4yK6>) and then contact the Office of the Dean of Students and Student Conduct (334) 727-8421, via e-mail THarper@Tuskegee.edu or by going into the office located in suite 203 Tompkins Hall."

Additional policies will be issued, if they are necessary.

STATEMENTS OF COE EXPECTATIONS REGARDING STUDENTS' ACADEMIC PROFICIENCY

Academic excellence is a tradition of the Tuskegee University College of Engineering, (COE). Students and faculty must collectively and proactively guard this tradition. The college hereby renews its commitment to the tradition by stating as follows:

1. Students are expected to develop self-confidence through acquisition of in-depth knowledge in all subjects through, as a minimum:
 - a. Studying to understand rather than studying to get by.
 - b. Challenging oneself to solve problems independent of textbooks or formulae sheets
 - c. Attempting diverse and multiple problems, multiple times, for depth and breadth of knowledge
2. Students are expected to be self-motivated through setting their own goals & schedules, spending time to study, and sharing their knowledge with peers.
 - a. Students should invest a minimum of two hours of study-time per week for every credit hour taken.
 - b. Students should seek or establish environments that encourage positive social interaction and engages in active learning.
3. COE is committed to providing support systems to students for higher achievement through the following avenues:
 - a. Direct access to instructors
 - b. Archives of faculty recorded course lectures
 - c. Dedicated peer tutors by fellow students at all academic levels
 - d. Periodic visits by alumni and industry subject matter experts
 - e. Opportunities for local and national academic related competitions
4. All COE students are expected to take advantage of all support systems. Students are particularly exp
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