1. Course number and name: **MEEN 3242 – Mechanical & Energy Engineering Lab II**
2. Credits and contact hours: **1 credits**
3. Instructor's or course coordinator's name: **Dr. Xiaohua Li**
4. Text book, title, author, and year: **Lab Manual provided and edited by department**

   Experimental Methods for Engineers, 8th ed (or 7th ed) J. P. Holman (ISBN: 978-0-07-352930-1)
5. Specific course information

   a. brief description of the content of the course (catalog description): **A continuation of MEEN 3240, MEE Lab I, covers principles of experimentation. Students perform a series of experiments in key areas of fluid mechanics and heat transfer. Experiments will cover flow velocity measurement, flow across a circular cylinder, drag force measurement and velocity boundary layers, thermal conductivity measurement, fin performance, transient heat conduction, natural and forced convection and radiation.** b. prerequisites or co-requisites:

   Prerequisite(s): MEEN 3240 and MEEN 31200 with a grade of C or better.

   Co-requisites: MEEN 3210

   c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program: **Required**
6. Specific goals for the course:

MEEN 3242	**ABET EAC Student Outcomes**						
Course Learning Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Demonstrate ability to perform statistical error analysis of experimental data.	X					X	
Understand measurements of flow velocity	X					X	
Understand pressure drag and friction drag	X					X	
Understand velocity boundary layer	X					X	
Understand measurements of thermal	X					X	

conductivity							
Understand measurements of fin performance	X					X	
Understand measurements of thermal time constant	X					X	
Understand natural convection, forced convection and radiation	X					X	

7. Brief list of topics to be covered:

Topics to Be Covered	
measurements of flow velocity	pressure drag and friction drag
velocity boundary layer	measurements of thermal conductivity
measurements of fin performance	measurements of thermal time constant
natural convection, forced convection and radiation	Group deigned experiment