ME 304 – Fluid Mechanics – Syllabus

Text: Munson, Young and Okiish's, *Fundamentals of Fluid Mechanics*, 8th edition, John Wiley
Prerequisites: Mech 236 – Dynamics; ME 311 – Thermodynamics I
Grading: Assignments: 10%, Quiz & two Tests: 55% (5+25+25), Final: 35%
Instructor: Prof. Joga Rao,
Room 309 MEC,
Email: raoi@njit.edu, Office Hours: By appointment

WEEK	CHAPTER	TOPIC	READING
1	1	Introduction	1.1 - 1.10
Quiz			
2	2	Fluid Statics	2.1-2.11.1,
3	3	Bernoulli's Equation	3.1-3.8
4	4	Fluid Kinematics	4.1-4.4
5	5	Control Volume, Mass	5.1
Test 1			
6-7	5	Control Volume Analysis, Momentum, Energy	5.2.1, 5.2.2, 5.3
8	7	Dimensional Analysis	7.1-7.9
9	6	Differential Analysis	6.1, 6.2, 6.3, 6.8, 6.9
Test 2			
10-11	8	Pipe Flows	8.1-8.5.1
12-13	9	External Flows	9.1-9.2
14	9	Drag	9.3
Final			

NJIT Honor Code and Professional Conduct will be Strictly Enforced.

ME 304 : Fluid Mechanics
POLICIES AND PROCEDURES

- **Homework** will be assigned weekly and is due a week later. *Unless the assignment specifies otherwise, you must work in teams of four or five, handing in one team solution per assignment. Homework's mustl be submitted on Canvas*. The instructor will designate the teams.
- **Team Roles**. On each group assignment, your team should designate a *coordinator* to organize work sessions, make sure everyone knows where and when to meet and understands who is supposed to be doing what. A *recorder* to prepare and turn in the final solution set, and two or more *checkers* to check the solution for correctness and verify that everyone in the group understands both the solutions and strategies used to obtain them. The team roles must rotate on every assignment—once a team member has carried out a role, he/she may not do it again until everyone else on the team has done it.
- **Homework format**. Each completed homework should be in one person's handwriting (the recorder's). Put the names and roles (coordinator, recorder, checker) of *participating* group members and the problem set number and date on the outside. *If a student's name appears on a solution set, it certifies that he/she has participated in solving the problems*.
- **Late homework**. Completed assignments should be turned in at the beginning of class on the due date. Solution sets will be accepted up to one week after the due date. Late assignments will receive a maximum grade of 50%. *However, once a group hands in several late assignments, they will no longer be accepted.*
- **Posted solutions.** *Problem set solutions will not be posted*. The burden is on you to make sure you find out how to solve the problems by getting help before they are due and/or asking about them in class after they have been handed in.
- **Individual effort assessments for team homework**. All students will be periodically asked to submit evaluations of how well they and their teammates performed as team members (see hand out). These evaluations will be incorporated into the assignment of homework grades. *If repeated efforts to improve team functioning (including faculty intervention) fail, a non-participant may be fired by unanimous consent of the rest of the team, similarly a team member essentially doing all the work of the team may quit.* Individuals who quit or are fired must find a team of three unanimously willing to accept them; otherwise they will receive zeros for the remainder of the homework.
- **Tests**. There will be one quiz, two tests during the semester and a final exam.
- **Missed tests**. If you miss a test (or quiz) without either a certified medical excuse or prior instructor approval, you will receive a zero for that particular test (or quiz).
- **Calculation of course grade.** A weighted average grade will be calculated as follows: Class quiz & two tests-55% (5+25+25); final examination-35%; homework-10%. **A weighted grade of 90 or above is guaranteed a course grade of A, 83 or above = B+, 75 or above = B, 67 or above = C+, 60 or above = C and 53 or above =D.**
  Note: The grades will not be curved in this course. It is theoretically possible for everyone in the class to get an A (or an F). Your performance depends only on how you do, not on how everyone else in the class does. It is therefore in your best interests to help your classmates in every legal way possible.
- **Gray areas between guaranteed letter grades.** There will be a *gray area* of several points below the specified numerical cutoff grades, within which a $\pm$ system will be used.

Two people getting the same weighted average grade (say, 89) might therefore get different course grades (A and B+). If you are in one of these gray areas, whether you get the higher or lower grade depends on whether your test performance has been improving (your grade goes up) or declining (it goes down), whether your participation in group work has been good (up) or inadequate (down) and on your attendance and class participation.

- **Consulting with faculty**. You are encouraged to discuss academic or any related matter with the course instructor during office hours, by email or by appointment.

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"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu"

AI use
*Student use of artificial intelligence (AI) is permitted in this course **only** for home-work assignments. During in class exams and quizzes, AI use **will not be** permitted. Hence if used in home work, it should be done so in a manner to foster a greater understanding of the material taught in this class. Additionally, if and when students use AI in this course, the AI must be cited as is shown within the NJIT Library AI citation page for AI. If you have any questions or concerns about AI technology use in this class, please reach out to your instructor prior to submitting any assignments.*