COURSE SYLLABUS
CONTINUUM MECHANICS I: CHME 320 - SECTION II

Class Time and Location: Tuesday & Thursday @ 8:00 – 9:15 AM --- Institute Hall (73) Rm. 1140
Course Mode: On-campus/Online material posted
Prerequisite(s): Prerequisites: PHYS-211 or PHYS-211A or equivalent course. Co-Requisites: (MATH-231, CHME-310 and CHME-391) or (MATH-231 and BIME-250) or equivalent courses.

Instructor Information
Professor: Cristian A. Linte, PhD
Contact Information: Office Location: Institute Hall (73) Rm. 3111
Phone: 585 475 4926
Email: clinte@mail.rit.edu
Teaching Assistant: Ms. Caitlin Donovan
Contact Information: Email: cld4910@rit.edu

Office Hours: Professor: Thu @ 11:00 – 2:00 PM; Wed @ 11:00 – 12:00 PM
Teaching Assistant: Mon, Wed & Fri @ 1:00 – 2:00 PM
Online Course Material: MyCourses
- General course information
- Reading and Homework Assignments
- Other posted materials (i.e., lecture notes, solutions to problems solved in class etc.)
- Grades
- Updates or changes to regular schedule will also be posted online
- If you have questions, pose them. Do not refrain from seeking assistance from the instructor, TA or from the wide variety of academic support services (e.g., Academic Support Center [http://www.rit.edu/~w-asc/] or the KGCOE Tutoring and Mentoring services [http://www.rit.edu/kgcoe/student-resource/tutoring-mentoring]).

Course Overview

Tentative Topics:
- Brief review: Units and dimensions, Newton’s laws of motion, free body diagrams
- Definition of a fluid, fluid properties
- Descriptions of fluid motion, classification of flows
- Fluid Statics, gage pressure, manometers and barometers, pressure forces, buoyancy
- Control volume approach to solve flow problems
- Conservation laws of fluid flows
- Pitot tubes, static and stagnation pressures
- Velocity profiles in laminar and turbulent flows
- Energy considerations in pipe flows
- External and internal flows, pipe flows, head loss
- Principles of similarity and non-dimensional flow parameters

Course Materials

Required Text: *Title: Fundamentals of Fluid Mechanics, 7th Edition*
*Authors: B.R. Munson, T. H. Okiishi, W.W. Huebsch and A.P. Rothmayer*
*Publisher: John Wiley and Sons, 2011, ISBN: 979-1-11811613-5*

Tentative Course Schedule

Assignments will be released typically on Thursdays and will be due no late than the second Tuesday following their release. A tentative lecture and assignment release/due date is available below. Due dates will be communicated/announced upon assignment release!

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Readings/Discussions</th>
<th>Assignment Release</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/28</td>
<td>Text Sections: 1.1 – 1.7; 4.1; 2.1 – 2.3</td>
<td>Assig. # 1 (02/06)</td>
<td></td>
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<tr>
<td>2</td>
<td>02/04</td>
<td></td>
<td>Assig. # 2 (02/13)</td>
<td></td>
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<tr>
<td>3</td>
<td>02/11</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>02/18</td>
<td>Text Sections: 2.5, 2.6, 2.8; 4.2 &amp; 4.4</td>
<td>Assig. # 3 (02/20)</td>
<td>Assig. # 1 (02/18)</td>
</tr>
<tr>
<td>5</td>
<td>02/25</td>
<td></td>
<td>Assig. # 4 (02/27)</td>
<td>Assig. # 2 (02/25)</td>
</tr>
<tr>
<td>6</td>
<td>03/04</td>
<td></td>
<td>Assig. # 5 (03/06)</td>
<td>Assig. # 3 (03/04)</td>
</tr>
<tr>
<td>7</td>
<td>03/11</td>
<td>Text Sections: 5.1-5.3</td>
<td>Midterm: GOL 70-1400</td>
<td>Assig. # 4 (03/06)</td>
</tr>
<tr>
<td>8</td>
<td>03/18</td>
<td></td>
<td>Assig. # 6 (03/20)</td>
<td>Assig. # 5 (03/18)</td>
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<tr>
<td>03/25</td>
<td></td>
<td>No class - Spring Break</td>
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<tr>
<td>9</td>
<td>04/01</td>
<td>Text Sections: 3.1 – 3.4</td>
<td>Assig. # 7 (04/03)</td>
<td>Assig. # 6 (04/01)</td>
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<tr>
<td>10</td>
<td>04/08</td>
<td></td>
<td>Assig. # 8 (04/10)</td>
<td></td>
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<tr>
<td>11</td>
<td>04/15</td>
<td>Text Sections: 3.5-3.6; 3.8 8.1 – 8.2; 8.3 – 8.5</td>
<td>Assig. # 9 (04/17)</td>
<td>Assig. # 7 (04/15)</td>
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<tr>
<td>12</td>
<td>04/22</td>
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<td>Assig. # 10 (04/24)</td>
<td>Assig. # 8 (04/22)</td>
</tr>
<tr>
<td>13</td>
<td>04/29</td>
<td></td>
<td>Assig. # 11 (05/01)</td>
<td>Assig. # 9 (04/29)</td>
</tr>
<tr>
<td>14</td>
<td>05/06</td>
<td>Text Sections: 7.6; 7.8 &amp; Review</td>
<td></td>
<td>Assig. # 10 (05/06)</td>
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<tr>
<td>15</td>
<td>05/13</td>
<td></td>
<td></td>
<td>Assig. # 11 (05/13)</td>
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Grading/Evaluation

<table>
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<tr>
<th>Assignments (10 or 11 throughout the term) &amp; Quizzes*</th>
<th>25%</th>
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<tbody>
<tr>
<td>Assignments (10 – 11 total)</td>
<td>15%</td>
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<tr>
<td>Quizzes (2-3 total)</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>35%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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*For 2 or 3 assignments, a surprise quiz may be given at the beginning of the class (20 – 25 mins tops) consisting of one problem for your most recent assignment – so be on your toes re homework!

Grade Scale

Based on the 100% total listed above, letter grades will be assigned as follows:

A: 90 points and above  
B: above 80 points to under 90  
C: above 70 points to under 80  
D: above 60 points to under 70  
F: below 60 points  
I: incomplete

Homework Assignments

Homework assignments will be posted on MyCourses and/or communicated in class typically on a Thursday and are due no later than 12:00 NOON EST on the due date (typically second Tuesday after the assigned date UNLESS OTHERWISE STATED (~ 12 days to complete). All assignments are to be submitted into the drop box located outside the Biomedical Engineering Department Office no later than 12:00 NOON EST on the due date.

All homework problems will be assessed for completion. Some or all problems will be graded in detail. Therefore, you should turn in all questions. Late submissions will incur a 40% reduction in the grade up to 24 hours after the posted submission date and time. Any submissions after that point will receive a zero for that homework assignment. In the event of a planned absence, any assignment that is due must be submitted prior to the due date.

If there are extenuating circumstances that are keeping you from completing your homework assignment on time, an acceptable reason may grant you an extension with no penalty for late submission, but this consideration needs to be discussed with the instructor prior to the due date and time.

With that in mind:

- Start your homework early so you can seek help. Note that you will have at least 1 weekend (often 2 weekends) to work on your assigned homework, so try it out and attempt each question before seeking help. Effective learning necessitates you trying to solve the problems on your own first.
- Working together on homework assignments is permissible, but DO NOT COPY each other’s work! It is important that you each develop your own solution style, which is EXCEEDINGLY important for analysis. Also, be organized and write neatly - sloppy writing leads to sloppy analysis that cannot be assessed will be assigned zero (0) credit. PLEASE WRITE ALL SOLUTIONS IN PENCIL!
Course Policies

In spite of the very early lecture slot, please make an effort to arrive on time (i.e., 5 mins late is acceptable once or twice – stuff happens - however, more often than that, it becomes a pattern)! Also, out of consideration for everyone else, please have your breakfast before class. If you bring a snack or coffee, please enjoy it quietly!

It is in your best interest to attend all classes and ask questions when necessary. We will be working out many examples in class. Please bring a scientific calculator (i.e., not your smart phone or laptop calculator and not a programmable calculator) to class, and, more importantly, to all quizzes, tests and exams! Also, bring your notebook/binder to all classes - students are responsible for obtaining all notes and assignments that were given during any lecture absence.

Absences, for whatever reason, do not relieve students of their responsibility for fulfilling normal requirements in any course. In particular, it is the student's responsibility to make individual arrangements in advance of missing class due to personal obligations such as religious holidays, job interviews, athletic contests, etc., in order that he or she may meet his or her obligations without penalty for missing class.

Technology in the classroom

Out of respect for your colleagues and everyone else in the lecture, all electronic devices including cell phones, iPods, iPads, tablets etc. must be TURNED OFF during class and exam periods. Any use of laptop computers and personal digital assistants (PDAs, iPhones, iPads, Blackberries, etc.) not associated with the learning activities of the class or any special accommodations you may require is prohibited during lecture.

Academic Integrity Statement

As an institution of higher learning, RIT expects students to behave honestly and ethically at all times, especially when submitting work for evaluation in conjunction with any course or degree requirement. The Department of [NAME] encourages all students to become familiar with the RIT Honor Code and with RIT’s Academic Honesty Policy. Moreover, RIT does not condone any form of academic dishonesty, such as cheating, duplicate submission and plagiarism (refer to http://www.rit.edu/kgcoe/advising/handbook.pdf pages 19-20 for more information).

College or department-level policies

KGCOE HONOR PRINCIPLES: RIT Engineering faculty, staff and students are truthful and honorable, and do not tolerate lying, cheating, stealing, or plagiarism.

All members of our community are expected to abide by these principles and to embrace the spirit they represent. We each have a responsibility to address any unethical behavior we observe; either through direct discussion with the offending party, or by discussion with an appropriate faculty or staff member. Allowing unethical behavior to continue unchallenged is not acceptable.

Throughout VHME 320, the following specific conditions exist in regards to academic honesty:

<table>
<thead>
<tr>
<th>Course Element</th>
<th>Specific Conditions</th>
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<tbody>
<tr>
<td>Homework Assignments: Graded</td>
<td>Student collaboration and discussion of problems is encouraged. However, the final product that is turned in must be your own work. No copying of a fellow student’s analysis is allowed. Analysis must be in your own style with rational steps you have taken clearly outlined; this is essential for successful engineering calculations.</td>
</tr>
<tr>
<td>and Ungraded</td>
<td></td>
</tr>
<tr>
<td>Exams and Quizzes:</td>
<td>Individual exercise! Collaboration of any kind is not allowed!</td>
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</tbody>
</table>
Any act of Academic Dishonesty will incur the following consequences. After notifying and presenting the student with evidence of such misconduct, the instructor has the full prerogative to assign a lower grade, including an “F” for the offense itself or for the entire course. If after careful review of the evidence, the instructor decides that the student’s actions are indeed misconduct and warrant a penalty, the instructor will add a letter to the student’s file in his or her home department (copy to the student, Department Head and the Dean) documenting the offense. Depending on the seriousness of the offense, the student may also be brought before the Academic Conduct Committee of the College in which the offense occurred, and may face academic suspension or dismissal from the Institute. The student has the right to appeal any disciplinary action as described in section D17.0 “Academic Conduct and Appeals Procedures” and D18.0 “RIT Student Conduct Process” of the Institute Policies and Procedures Manual.

Statement on Reasonable Accommodations

RIT is committed to providing reasonable accommodations to students with disabilities. If you would like to request accommodations such as special seating or testing modifications due to a disability, please contact the Disability Services Office. It is located in the Student Alumni Union, Room 1150; the Web site is www.rit.edu/dso. After you receive accommodation approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary.