

**SYLLABUS:
FIRE 155 FIRE SERVICE HYDRAULICS
SPRING, 2016**

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Session 1: Tuesday 1:30 – 4:15 room 205 Howe Hall (second floor) (1/19/2016-5/14/2016)

Session 2: Thursday 1:30 – 4:15 room 205 Howe Hall (second floor) (1/19/2016-5/14/2016)

Required Text: SECOND EDITION: *Fire Service Hydraulics and Water Supply*; IFSTA/Fire Protection Publications (Michael Wieder, 2010. ISBN 978-087939414-1). May be picked up at the SMCC Bookstore at the S. Portland campus, ordered by phone (207-741-5532), or ordered directly from IFSTA / Fire Protection Publications' Web site: <http://www.ifsta.org/>

Required Equipment: Calculator capable of calculating square roots (**cell phones are not allowed on exams**)

Course Description: This is a foundation course in the principles of hydraulics as applied to fire service hose and appliances. Topics include principles involving water at rest and in motion; solving hydraulic problems in fire hose layouts by exact mathematical calculation and fireground estimation; the ability to make rapid fireground hydraulic determinations and to evaluate the efficiency and effectiveness of various hydraulic systems including hydrant flows and community water supply resources. Additionally we will examine pump mechanics concepts including common problems with advised solutions and pump testing processes.

Co-requisite: *MATH-140 College Algebra or equivalent*. Because of the nature of this subject, students should be well versed in mathematics - particularly algebra -- before enrolling in this course.

Course Outcomes: At the end of this course, successful students will be able to:

- Explain specific theories behind water characteristics at motion and at rest;
- Apply mathematical and physics theories to the movement of water in fire suppression activities;
- Explain the design principles of fire service pumping apparatus;
- Analyze community fire flow supply and demand issues
- Use mathematical formulas to compute flows and various hydraulic losses for fire service pumping scenarios
- Explain how fire service pumps operate, what some common pump failures are and how to trouble shoot these failures
- Assist in an annual fire pump test procedure

Lesson Objectives: The learning objectives of each course unit are listed at the beginning of each chapter. The objectives form the basis of the presentations and the exams. *You are encouraged to pay close attention to learning objectives to ensure that at the end of each unit, you can demonstrate the behaviors listed in the objectives.*

COURSE ASSIGNMENTS

All course assignments are expected on the day they are due. Late work will not be accepted.

- **Weekly quizzes.** There may be a short quiz at the start of class. Quiz material will be based on new material from the reading. Some of these quizzes will be open book.
- **Assigned reading and Accompanying Note Taking Guide.** Students are responsible for keeping up with reading and will be required to show evidence that they have read the assignment. Additional professional publication review and analysis may be required as appropriate throughout the semester.
- **In Class Activities:** One of the reasons that attendance is so important is because of the in-class group work activities **a grade of zero will be awarded to students who fail to show for these learning opportunities.** All in-class activities are graded as daily quizzes.
- **Projects.** Students will be assigned 6 writing/research projects in addition to other course work.

- **Notebook:** Each student will be required to maintain an organized notebook throughout this course. The notebook will be assessed on neatness and completeness twice this semester.
 - **Section 1:** Administrative: syllabus, schedule, pcntg rubric, icntg blank.
 - **Section 2:** PCNTG
 - **Section 3:** ICNTG and additional notes
 - **Section 4:** quizzes/tests
 - **Section 5:** writing assignments/projects
 - **Section 6:** content handouts
- **Exams.** There will be three exams given at approximately 1/3rd of the way through the course, 2/3rds of the way through the course and at the end of the course (the last test is a cumulative final and thus is worth more of your semester grade). Each successive test may require the retention of information from previous examinations to be successful (all covered content is in play for each test).

Grading:

- Reading Notes =15% of total (PCNTG)
- Weekly quizzes/daily activities =10% of total
- 2 Exams, 10% each =20% of total
- Projects =25% of total
- Notebook = 10% of total
- Final Exam =20% of total

Add/Drop: SMCC’s course add/drop deadline for each semester is Tuesday of the second week. If you drop this course before the deadline, you will receive a tuition refund. If not, you will be billed the full cost of the course.

Early Warning Letters: After students have completed Week 5 and week 8 of the course, early warning letters will be sent home to students who have demonstrated unsatisfactory performance. Unsatisfactory performance will be determined by the instructor based on a combination of grades and participation.

Course Policies: Students are expected to:

- Interact respectfully and professionally with fellow students and faculty. Remember that e-mail messages and postings lack non-verbal hints – be very careful not to send the wrong impression.
- Do your own work. Students are expected to submit original work unless other sources are clearly credited. Students are expected to equitably share the load in group work. Cheating will not be tolerated. Students found to have cheated will be penalized with actions up to and including a failing grade following policies listed in the SMCC Code of Student Conduct. All work is to be done as an individual unless expressly indicated in writing.
- Complete pre-class readings, self-assessments, discussions, assignments and exams on time.
- **Reading of assigned materials prior to class is expected. Weekly quizzes may be given over the assigned readings.**
- **Notetaking is necessary during each class. Notes and handouts must be organized in a binder.**
- **Respect the classroom, fellow students, faculty**
- **Active participation and critical thinking** is necessary for knowledge sharing and to get the most from practice opportunities.
- **No pagers, or cell phones** during class time
- **No food or tobacco** of any kind used in the classroom
- **No hats** worn in the classroom
- *Really important: Ask for help when needed. We want you to succeed in this course.*

Tutoring Time: _____

Human Dignity and Integrity: All class participants are expected to treat others with respect. Some of the communication in this course will be via e-mail and on-line discussions that lack the benefit of in-person, non-verbal communications, students are cautioned to carefully select the words and phrases that they use, and maintain a professional on-line demeanor at all times. Students are expected to submit original work unless other sources are clearly credited. Students are expected to equitably share the load in group work. Cheating will not be tolerated. Student's found cheating may result in penalizing actions up to and including a failing grade following policies in the student code of conduct.

Attendance is expected at all assigned classes. Attendance will be recorded and will affect the student's grade. SMCC requires instructors to report the names of students to the registrar's office who stop attending class. For the purpose of this class, **students will be reported as no longer attending after two absences from the class.** A report of last date of attendance to the registrar's office results in a grade of Administrative Failure (AF) being recorded for the student. For more information, please refer to the SMCC Student Handbook. Students are expected to notify the instructor, in advance, concerning absences. Students are responsible for all material missed during absences. If you must miss class for some reason, please notify your instructor immediately. Considering the nature of the material presented during this course, missing class time can have significant negative consequences. All classroom activities conducted on the date of absence will be given a grade of (0) zero. Any assignments due the day of an absence will be considered as being late. All late assignments will be given no more than 50% of their earned value. All assignments are due in hard copy (typed and stapled with names on them) at the beginning of class. Any assignment that is not passed in within five (5) days of its due date will not be accepted for credit. .

MCCS NONDISCRIMINATION STATEMENT

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call 207-741-5798. If you have a disabling condition and wish to request accommodations in order to have reasonable access to the programs and services offered by SMCC, you must register with the disability services can be reached at 741-5629 (TTD 207-741-5667). Further information about services for students with disabilities and the accommodation process is available upon request at this number. Or you may speak directly with your instructor.