# Syllabus

**Course: Fire Suppression and Detection Systems – FPST 1373**

**Semester: Spring 2021**

**Lecture: Thursdays 8:00-10:25 am**

**Lab:**

**Instructor: Professor Bryan Hoskins**

**Contact: bryan.hoskins@okstate.edu**

**Credits：3**

**Course code:**

**Course Description:**

The design, installation, maintenance and utilization of portable fire-extinguishing appliances and pre-engineered systems. Operational capabilities and utilization requirements of fire detection and signaling systems. Fire detection and suppression applied in practical laboratory problems.

**Prerequisites:**

None

**Course Objectives:**

This course covers the design, installation, maintenance and utilization of fire extinguishers, fire sprinkler systems, fire alarm systems, and pre-engineered fire suppression systems. The intent of the course is to impart an understanding of the science behind the method of action employed by each of these systems, the reasoning behind the building and fire code requirements for their implementation and use, and of the applicable National Fire Protection Association’s (NFPA) standards covering the installation and inspection, and testing and maintenance of each system. Each component described above requires the introduction of the overall system theory and details in a lecture based, classroom setting, and the application of the ideas in laboratory setting.

**Learning Objectives:**

a) Select the proper agent and application appliance to effectively control and extinguish various types of fires.

b) Determine the appropriate number and type of portable fire extinguishers needed to protect a given occupancy or hazard, with recommendations for proper distribution and installation in accordance with nationally recognized standards.

c) Inspect, test and maintain common types of fire extinguishers and suppression systems found and used in business and industry.

d) Discuss the operating principles of various types of fire detection and control devices and to describe their function in fire suppression and alarm systems.

e) Provide recommendations for the selection and placement of fire detection equipment for the protection of life and property from products of combustion and effects of fire.

**Course Learning Outcomes:**

i. Understand the appropriate selection and application of different suppression and detection systems.

ii. Demonstrate the ability to conduct inspection, testing, and maintenance activities on suppression and detection systems.

iii. Explain the impact of the failure of suppression and detection systems.

**Office Hours:**

Office hours will be by appointment on Monday nights from 9:00-10:00.

**Required Texts:**

International Fire Service Training Association. (2016). Fire Detection and Suppression Systems (5th ed.). Stillwater, Oklahoma, USA: IFSTA.

National Fire Protection Association. (2008). Fire Protection Handbook (20th ed.). (A. E. Cote, Ed.) Quincy, Massachusetts, USA: NFPA.

**Recommended Texts:**

ICC International Fire Code, 2021 Edition.

ICC International Building Code, 2021 Edition.

NFPA 10: Standard for Portable Fire Extinguishers, 2018 Edition.

NFPA 11: Standard for Low-, Medium-, and High-Expansion Foam, 2016 Edition.

NFPA 12: Standard on Carbon Dioxide Extinguishing Systems, 2018 Edition.

NFPA 13: Standard for the Installation of Sprinkler Systems, 2019 Edition.

NFPA 14: Standard for the Installation of Standpipe and Hose Systems, 2019 Edition.

NFPA 15: Standard for Water Spray Fixed Systems for Fire Protection, 2017 Edition.

NFPA 17: Standard for Dry Chemical Extinguishing Systems, 2021 Edition.

NFPA 17A: Standard for Wet Chemical Extinguishing Systems, 2021 Edition.

NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water Based Fire Protection Systems, 2020 Edition.

NFPA 70: National Electrical Code, 2020 Edition.

NFPA 72: National Fire Alarm and Signaling Code, 2019 Edition.

NFPA 101: Life Safety Code, 2021 Edition.

NFPA 110: Standard for Emergency and Standby Power Systems, 2019 Edition.

NFPA 111: Standard on Stored Electrical Energy Emergency and Standby Power Systems, 2019 Edition.

NFPA 750: Standard on Water Mist Fire Protection Systems, 2019 Edition.

NFPA 770: Standard on Hybrid (Water and Inert Gas) Fire Extinguishing Systems, 2021 Edition.

NFPA 2001: Standard on Clean Agent Fire Extinguishing Systems, 2018 Edition.

NFPA 2010: Standard for Fixed Aerosol Fire-Extinguishing Systems, 2020 Edition.

NFPA 5000: Building Construction and Safety Code, 2021 Edition.

**Reading Assignments:**

Reading assignments are preparation for the lecture or laboratory period and completion prior to class or lab is expected. This class involves significant out-of-class assignments. The student is responsible for all material assigned regardless of inclusion in class lecture. Preparation for class discussions is expected.

• The Course Outline spreadsheet at the end of the syllabus lists the reading assignments.

**Assignment Submission and Classroom Conduct Policy:**

Incomplete or not turned in assignments will receive a score of zero. Make-up assignments (when allowed) must be turned in within 2 weeks of the due date unless other arrangements are made.

This class will have an on-line component.

Turned in materials failing to follow the formatting instructions of the assignment will receive a grade of zero. Failure to place your name on the submitted file will result in a grade of zero.

Submit calculation assignments on engineering paper, unless a separate worksheet is provided (i.e. hydraulic calculation paper or graphs). Additionally, complete all calculations utilizing pencil and have the answer clearly boxed.

Unless excused for valid (and unavoidable) university reasons, late work will receive a zero score. Turn in all work per the incomplete work criteria above. Travel for university functions is not an excuse for late work. Turn in assignments early or make alternative arrangements. Illness, death in the immediate family and other such emergencies are excusable under university policy. However, the student should contact the professor as soon as possible.

**Dress Code Requirements:**

In lab, students must wear closed toed shoes and long pants that cover the tops of the shoes.

**PPE (Personal Protective Equipment for Lab Only):**

None required this semester.

**Attendance and late arrival policy:**

Students are here studying for a profession therefore promptness is expected. Arriving to class late and leaving before class is dismissed will count as an absence. Attendance, as at a job, is required and is subject to pop-quiz (typically over the assigned readings). Two labs missing will lead to a downgrade in the final grade of one letter. Each additional lab missed will result in an additional downgrade of one letter. Arriving at lab more than 15 minutes late, or leaving lab early, will result in a zero for the lab assignment (unless previous arrangements have been made). Excused absences will require making up the missed work and an additional assignment.

**Classroom Behavior:**

With respect to cell/smart phones, this is practice for a profession and are adult conduct is expected. The student’s conduct is expected to reflect being an adult and using technology in an appropriate manner e.g. participating in interactive surveys during class that use texting technology are appropriate; playing games, chatting with friends, etc. are not appropriate.

The use of recording equipment, IPODS, MP3 players, cell phones, the taking of video or photography are NOT PERMITTED without the expressed written consent of the instructor. Any recordings will result in a F! for the course.

During exams, exam review sessions, exam rework sessions, or any other time when a student views an exam, any cell phone, or other electronic equipment use will automatically constitute cheating resulting in the requisite penalty, up to an F.

**Grading Policy:**

Daily Coursework (75 %)

Sprinkler System Practical 5 %

Placement Practical 5 %

Exams 45 %

Homework/Lab Reports 10 %

Papers/Projects 10 %

Final Examination 25 %

The material in this course is essentially professional material and a high level of competency is expected. Weighted in the grading of material are both quality of presentation and technical content.

Final Grade Scale

A – 85% - 100%

B – 75% - 84%

C – 60% - 74%

F – 0% - 59%

An “F” grade will not count for transfer credit for any FPST curriculum course.

Students scoring below a 60% for the entire course may retake the final exam one time. The “retake” score will only substitute for the original final exam score if the retake score is higher. The higher score of the two final exams will be used to calculate the student’s final course grade. The OSU instructor will recalculate the final grade and might require the assistance of SWJTU staff.

**Academic Misconduct:**

Copying the work of another for personal credit is plagiarism whether the work is a published work or the unpublished work of another student. Thoroughly reference all use of materials developed by others using APA 6th edition formatting. Use of electronic files that are the work of others is plagiarism. Complete all assignments individually unless specifically assigned as group work. While students may discuss assignments with each other, individual completion of the work is required. Plagiarism and work-sharing violations, as well as dishonesty on examinations, may result in reduction in grade, no credit, failure in the course, or an F! per university policy.

The minimum penalty for acts of academic dishonesty in this course is a grade of zero on the writing assignment or examination in question. Penalties may be much more severe, however, and could include an “F!” for the entire course and a recommendation of additional disciplinary actions. University regulations regarding academic misconduct are applicable per http://academicintegrity.okstate.edu/ .

Academic dishonesty includes both giving and taking of improper assistance on writing assignments or examinations as well as any other form of attempting to gain credit for work that is not that of the student.

**Permissible Calculators:**

Permitted calculators for FPST exams are as follows:

Hewlett Packard -- HP 30s; Hewlett Packard - HP 33s; Hewlett Packard - HP 9s

Casio - FX 115 ES, FX115MS, andFX.115MSPlus (Note: FX115ESand FX115MS models ending with an "-SR" designation are also allowed.)

Texas Instruments - TI3OXA (or TI 3OXa);

Texas Instruments - TI 30X HS and TI 30X 11B; Texas Instruments - TI36X Solar

Note: almost all TI calculators with a TI 3x number are compliant with the department policy

These calculators are those typically permitted for certification and professional licensing examinations (CSP, FE, and CIH). Prohibited calculators include PDAs, cell phone calculators, or programmable calculators such as the TI 82, 83, 84 and 89.

Also allowed, after inspection by the instructor, are basic 4 or 5 function or nonprogrammable inexpensive scientific calculators. However, these basic calculators may put the student at a disadvantage on math problems that are complex or involve some special trig functions.

**Course Outline:**

