**Course: Life Safety Analysis – FPST 3143**

**Semester: Fall 2022**

**Lecture: ATRC 103, MW, 12:30-1:20**

**Lab: FSL, F, 12:30-1:20**

**Instructor: Professor Bryan Hoskins**

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

# Final Exam:

The final exam schedule for this course is at 10:00 am on Wednesday December 14, 2022. This is a mandatory comprehensive examination. Allstudents will take the exam.

# Catalog Description:

Life safety concepts related to building codes including means of egress design criteria and components, exits, component details, occupancy types, occupancy load, emergency lighting, marking of means of egress, evacuation movement, human performance capabilities, human response to fire cues, occupant pre-evacuation, and toxicology.

# Prerequisites:

All prerequisites require a grade of C or better

FPST 1373

# Course Objectives:

This course covers the theory, design, and inspection of fire protection systems for people. 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) and International Code Council (ICC) 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 activities outside of the classroom setting.

# Learning Objectives

1. Design systems that account for human behavior.
2. Interpret model building codes and the Life Safety Code (NFPA 101) and apply those codes to problems in managing risks associated with building construction.
3. Analyze architectural and engineering plans and specifications for compliance with established criteria for life safety and conservation of property loss due to fire.
4. Recognize inherent hazards, evaluate alternatives and recommend corrective measures consistent with structural and architectural design concepts, occupancy requirements and cost-effective management principles.

# Course Learning Outcomes:

1. Analyze architectural and engineering plans and specifications for compliance with established criteria for life safety and conservation of property loss due to fire
2. Apply recognized codes and standards to problems in managing risks associated with building construction
3. Recognize inherent hazards, evaluate alternatives and recommend corrective measures consistent with structural and architectural design concepts

# Required Texts:

National Fire Protection Association. (2021). NFPA 101, The Life Safety Code®, 2021 edition, Quincy, Massachusetts, USA: NFPA.

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

# Recommended Texts:

SFPE. (2016). SFPE Handbook of Fire Protection Engineering (5th ed.). (M. J. Hurley, Ed.) Springer.

SFPE (2019). SFPE Guide to Human Behavior in Fire 2nd Edition, Springer.

Tubbs, J.S. and Meacham, B.J. (2007). Egress Design Solutions: A Guide to Evacuation and Crowd Management Planning, Hoboken, NJ, USA: John Wiley & Sons.

# 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.

# Assignments and Conduct of the class:

Incomplete or not turned in assignments will receive a score of zero. Failure to complete any assignment or project and receive at least a 50%+ grade will result in an additional 50 % penalty. 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 using Online Classroom.

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 or the Fire Protection and Safety Engineering Technology Office as soon as.

# Office Hours: (subject to change)

Office Hours will be Wednesday from 8:30-9:20 for class assistance only. The instructor will also be generally available during regular working hours. Make appointments by email. On campus students can attend in person (preferably wearing a mask) or using an online platform. The instructor will also respond to student questions by e-mail.

# Attendance:

Students are here studying for a profession therefore promptness is expected. Attendance, as at a job, is required and is subject to pop-quiz. 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). Attending the lab section other than the one that you are enrolled in without explicit permission in advance will result in a 50 % deduction in the grade for that lab. Excused absences will require making up the missed work and an additional assignment.

# Laboratory Dress Code

When attending class in the classrooms on the north side of the Fire Safety Lab (FSL) building (Pump Lab, Riser Lab, Large Fire Bay, and Fire Behavior Lab) and at the hazardous materials training laboratory, students must wear closed toed shoes and long pants that cover the tops of the shoes. Failure to wear proper attire will result in dismissal from the lab and a score of zero for the exercise. In addition to the standard lab attire, when visiting the Fire Service Training (FST) facility, students must bring a hard hat and safety glasses. Additional PPE may be required for specific lab activities.

# Other Dress Code Requirements

Business casual dress is expected when attending lectures from guest speakers. Dress code for field trips will be announced. Failure to follow the dress code will result in a zero for the lab.

# PPE

FPST students are expected to have protective footwear meeting ANSI Z41/ASTM F-2412 and protective eyewear meeting ANSI Z87.1. Failure to wear appropriate PPE when required will result in a zero for the lab activity.

# 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. Phones, if on, should be placed on vibrate to allow for Code Red alerts.

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!. Additionally, all backpacks are to be placed at the front of the classroom during exams.

Students who are disrupting class in any way (as defined by the instructor) will be asked to leave and will receive a zero for the assignment and/or have 2% deducted from their final grade (this includes use of profane language in written work). Unprofessional communication e.g. by email, will receive no response from the instructor and is subject to the “Reverse Quiz” rules below.

# COVID-19 Information

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Face coverings (masks) are recommended in class and in lab per OSU policy.

Hybrid/Online – students need to be prepared to utilize the hybrid model (synchronous or asynchronous) should the university transition to online or should there be an exposure of a student, faculty, or employee and a quarantine be necessary.  Students should have access to a web camera and microphone to join classes or lab activities.  Synchronous learning will be done via Canvas Conferences or Zoom.

When logging into synchronous classes/labs, the following conditions must be followed:

Individual cameras are required to be turned on, with the student’s face clearly visible in the camera view

* Students should be fully clothed in the view of the camera.
* The background of the viewing area should be assessed and any inappropriate contents should be removed or covered.
* Do not attempt to operate a vehicle or other heavy machinery while logged in from a tablet or smart phone
* Do not log in from bed, restroom, or other inappropriate areas (as determined by the instructor).

# Reverse Quiz:

The student receives deductions if the student uses unprofessional correspondence. Deductions may result for; using “hey” to begin an e-mail, using colloquial expressions such as “is it cool if,” or failure to use a greeting, body (with complete sentences), and salutation. The use of the niceties of polite society is strongly encouraged e.g. please and thank you. Finally, if the student asks a question that can be answered in the syllabus, or found in Canvas, the student will receive a response of “-X pts., see syllabus, or Canvas.” Deductions will typically range from -2 to -5 points.

# Grading:

Course grades will be determined with the following weighting:

(3) Hourly Exams 35%

Highest and lowest Exams (10% each)

Median Exams (15%)

Project 15%

Assignments/Lab reports/Quizzes 10%

Final Exam 40%

The material in this course is essentially professional material and a high level of competency is expected. Weighted equally in the grading of material are both quality of presentation and technical content. Refer to the FPSET Program “Guide for Written Work” in Canvas.

Final Grade Scale

A = Above 90%

B = Above 80% and below 90%

C = Above 70% and below 80%

D = Above 60% and below 70%

F = Below 60%

F! = Cheating

# Team Projects

Complete team projects as a team. Individual submissions are not graded and treated as incomplete work. Individual grades will be adjusted based on feedback from the team members. The team paper must follow the FPST Guideline for Written Work.

# 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.

**Laptop Computers**

Per the University Catalog page 111:

“For students in Engineering, Architecture, and Technology, the **college requires** that all students have several basic tools. Students in the College must have a scientific calculator and **a laptop computer**. The scientific calculator should be capable of computing trigonomic functions, logarithmic and natural logarithmic functions, basic statistical analysis, and all algebraic functions. The laptop requirements are published on the college IT website <http://ceat-its.okstate.edu> .”

# 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.

**Special Accommodations for Students:**

If any member of this class feels that he/she has a disability and needs special accommodations of any nature whatsoever, the instructor will work with the student and the office of Disabled Student Services, 326 Student Union, to provide reasonable accommodations to ensure the student has a fair opportunity to perform this class. Please advise the instructor of such disability and the desired accommodations at some point immediately after the first scheduled class period.

# Religious Holidays

Should the student have any religious holidays that he or she wishes the instructor to consider, inform the instructor during the first week of class. Failure to notify the instructor during the first week of class results in no accommodation for religious holidays.

# Reminders

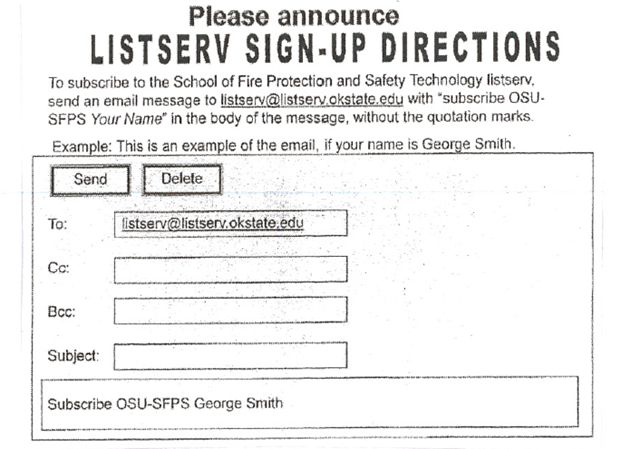
See the University Syllabus Attachment:

# Syllabus Fee/ Course Receipt

Each student must pay a syllabus fee for lab expendables acquired and utilized throughout the semester. The student shall purchase a course coupon from the Student Union cashier. Upload a copy of the receipt with the students name printed on the coupon as evidence of payment by **Friday, September 9th at 5:00 p.m.** **FPSET Program Policy provides for a penalty of up to a zero score on all exams for students who fail to deliver the appropriate receipt.** Make payments for the service charge associated with this supplemental text material at the Student Union Bookstore.

**FPST Student ListServ**

All current FPST students should be signed up on the FPST Student ListServ. Directions are attached below, please read them carefully, and send your request as directed. Being on the ListServ is important, as it is the main means of contact that the program has with the entire FPST student population for notifications from the faculty and student organizations. You must send your request from your OSU email account, request from other accounts are declined to avoid spam.



**Job Information**

Job positions that are open to FPST students and alumni are now posted on the HireOSUGrads website only and are no longer sent out on the ListServ first. All students seeking internships, part-time, or full-time employment for the FPST degree should go to [www.hireosugrads.com](http://www.hireosugrads.com) and create an account. All students take the time now to create their accounts so you are well prepared. (Note: Be sure to review your account and update as needed before applying for a listing.) Andrea Haken, Career Specialist, can assist you if you should need help with this available employment tool.



# Course Outline



