**FSE 201S – Building Construction for the Fire Service**

**Spring 2017**

**CRN 22499**

**Tuesday & Thursday 11:00 to 12:15**

**Ashland 137**

**Credit Hours:** 3

**Instructor:** James L. Pharr

[**James.Pharr@eku.edu**](mailto:James.Pharr@eku.edu)

**Office: 859-622-8894**

Office: Ashland 134

**On-Campus Schedule:**

Tuesday FSE 201S 11:00 to 12:15 137 Ashland

FSE 400 18:00 to 20:45 138A Ashland

Thursday FSE 201S 11:00 to 12:15 137 Ashland

**Office Hours:** Tuesday 8:30 - 10:30 / 1:30 – 4:00

Wednesday 09:00 – 11:30 / 13:00 – 16:00

Thursday 8:30 - 10:30 / 1:30 – 4:00

*Times other than shown are available by appointment. 30 minutes before listed classes is dedicated to final class preparations.* ***It is best to schedule an appointment, please email me to schedule time to assure full attention is directed to you. Please include your phone number.***

**Course Description:**

A review and analysis of building construction methods and terminology.   A systems approach to designing building fire safety; the role of design in providing fire safety.   The life safety code, the function of the intestine of fire rated building components, evaluating plans for code compliance.

**Course Texts:**

*Required*

*Building Construction Related to the Fire Service*. 3rd edition. International Fire Service Training Association. ISBN 978-087939371-7

*Fire Protection Handbook*. 20th Edition. Volumes 1 and 2. National Fire Protection Association. ISBN 978-087765758-3

*Various NFPA codes available in electronic format from EKU’s Library. See Appendix 1 of this syllabus.*

Additional required readings may be made available throughout the semester. The instructor will place copies of the extra readings on Blackboard for the student to read.

**Course Learning Outcomes:**

Upon completing this course, the participant will be able to:

1. Identify and describe building construction classifications and fire resistance features.

2. Describe and recognize structural design features of specific buildings.

3. Describe the purpose of building systems and analyze how these affect firefighter safety.

4. Evaluate existing buildings to determine construction method(s) and to identify life and fire safety concerns.

5. Describe common building materials and their behavior when exposed to fire.

6. Identify the hazards associated with buildings under construction, renovation, or demolition.

7. Identify signs of situations associated with building collapse, both fire and non-fire induced.

**Course Methodology:**

This course includes lecture with significant class discussion.

**Course Requirements:**

The content of the written evaluations will include all assigned materials, which include information, found in the text and related texts, handouts, lecture materials, and other special assignments included as a part of the class activities.

Students are expected to complete reading assignments on time, , complete assignments as scheduled, and complete the final project. Specific course requirements are as follows:

**Assignments: 20% of Grade**

*Assignments address course outcomes:*

Coursework will be assigned at the discretion of the professor. Coursework will be assigned throughout the semester and be of the following form, including but not limited to, calculation assignments, laboratory reports, review problems, study20 assignments, and essay assignments. Assignments are due at start of the class period unless otherwise specified by the professor. Assignments will account for 20% of the final grade.

**Principles of Building Construction** (Q0751), National Fire Academy Online 10% of grade

**Quizzes: 20% of grade**

*Quizzes address course outcomes*

Quizzes will be given each week there is not an examination. They are intended to test factual information from the assigned reading. These quizzes will account for 20% of the total grade.

**Service Learning Project: 20% of grade**

*Term project addresses course outcomes 1, 2, 3, 4, 5, and 6.*

*A* detailed description of the project requirements will be provided early in the class. The term project will account for 20% of the final grade.

**Exams:**

*Exams address course outcomes 1, 2, 3, 4, 5, 6, and 7.*

There will be two examinations in this course. The exams will consist of short answer, multiple choice, matching, essay, and true/false questions from topics covered in the lecture, assigned readings, and handouts. Exams will count for a total of 20% of the final grade.

***Class participation:***

Attending and actively participating in class discussion while contributing relevant material, 10% of the final grade.

**Academic Honesty Policy:**

You are advised that EKU's Academic Integrity Policy will strictly be enforced in this course. The Academic Integrity Policy is available at [www.academicintegrity.eku.edu](http://www.academicintegrity.eku.edu/). Questions regarding this policy may be directed to the Office of Academic Integrity.

Eastern Kentucky University faculty and students are bonded by principles of truth and honesty which are recognized as fundamental for a community of teachers and scholars.

University expects that students will honor and that faculty will honor and enforce these principles which contribute to a foundation upon which a quality education can be built. With these premises the University affirms that it will not tolerate academic dishonesty. This includes, but is not limited to, plagiarism and cheating.

**Plagiarism** is the act of presenting ideas, words, or organization of a source (published or not) as if they were one's own, without acknowledgement of the source. All quoted material must be in quotation marks, and all paraphrases, quotations, significant ideas, and organization must be acknowledged by footnotes or by some other form of documentation acceptable to the instructor for the course. Plagiarism also includes presenting material which was composed or revised by any person other than the student who submits it as well as the deliberate falsification of footnotes. The use of the term " material" refers to work in any form including written, oral, or electronic (as in the case of computer files).

**Cheating** includes buying, stealing, or otherwise fraudulently obtaining copies of examinations or assignments for the purpose of improving one's academic standing. During examinations or in-class work, it includes receiving information from others and referring to unauthorized notes or other written information. In addition, copying from others during examinations or in the preparation of homework assignments, is a form of cheating.

Computers should not be used to acquire information in conflict with academic honesty policy. Furthermore, the Code of Ethics for Computing and Communications make it the responsibility of computer users to keep information, data, and programs in their computer accounts secure from others. (Taken from the Eastern Kentucky University Student Handbook [UHS] Page 31.)

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**Students with Disabilities:**

If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID and present them to the course instructor to discuss any academic accommodations you need. If you believe you need accommodation and are not registered with the OSID, please contact the Office in the Student Services Building Room 361 by email at [disserv@eku.edu](http://learn.eku.edu/webapps/blackboard/content/contentWrapper.jsp?content_id=_2971746_1&displayName=%26nbsp%3B&course_id=_74468_1&navItem=content&href=mailto%3Adisserv%40eku.edu) or by telephone at (859) 622-2933 V/TDD. Upon individual request, this syllabus can be made available in an alternative format.

**Attendance:**

An attendance policy of 80% will be maintained. Students missing more than twenty percent of the classes without authorization from the instructor will receive an “F” for the final grade. Attendance and participation will count for 10% of the final grade.

**Extra Assistance:**

In the event a student requires extra help or assistance with a problem, please feel free to:

A. Schedule an appointment, at the end of class.

B. Call the office or send an email to schedule an appointment.

C. Stop by the office to see if I can assist you at that time. If you stop by without a scheduled appointment you may not always be assisted due to other responsibilities.

**Student Materials:**

Each participant in the class should have and bring with them for each class meeting: note taking materials, and the appropriate textbooks.

**Missed and Late Assignments:**

20% of the total points possible will be deducted for each day that the assignment is late. Assignments that are more than 6 days late will not be graded; a zero (0) will be assigned for that assignment. Late assignments will be accepted only at the discretion of the professor.

**Grading:**

a. Grades will be determined by the weights in given in Section D of this syllabus.

b. Grading Scale:

A= 90% and above

B=80 – 89%

C=70 – 79%

D=60 – 69%

F=59% and below

General: Your recorded grades will be available for your review at any convenient time on blackboard. Do remember to *keep all assignments, quizzes, and tests returned to you* so that any discrepancies can be easily and fairly straightened out. Except in cases of actual error, final grades are permanent.

**Note:**

1. All assignments are to be turned in on time. A letter grade will be deducted for each calendar day the assignment is late. Assignments will be placed on the desk, prior to the start of class. All assignments turned in after the start of class are considered late and the student is referred to Item H, Missed and Late Assignments, for more direction.

2. Drawings are not to be rolled; they should be left flat to facilitate grading.

3. Review assignments will be assigned a total number of points based on the number of problems contained in the assignment.

4. Tests will be taken on the day and time announced. No make-up tests will be given. Missed Tests: **If a student misses a test without a valid excuse (the validity of the excuse will be determined within the sole discretion of the professor), the student may be permitted to make up the test – but will be assessed a penalty of 10% or more. Missed test will be made up before the week of final examinations.**

**Course Correspondence Policy:**

1. Any email correspondence regarding the course must include the specific course ID (FSE 201S) as the first letters of the subject line.

2. The course ID (FSE 201S) should be followed by a space and a distinctive subject (e.g., FSE 201S – Discussion Board Question 1).

3. You are required to use your EKU assigned email address. This will ensure that you receive all course information in a timely manner. If you choose to use another email address, it is your responsibility to make sure that you receive all course information. Use of an email address other than the EKU assigned email address is strongly not recommended and done so at your own risk.

4. If the assignment is to be submitted within Blackboard, assignments submitted as email attachments will NOT be accepted, unless preapproved by the instructor. In addition, all files should contain your last name and assignment number in the file name.

5. Electronic files will only be accepted in .doc, .docx, .xls, .xlsx, .ppt, .pptx, or .pdf formats. All other formats may not be able to be opened by the instructor and will be issued a zero.

6. All emails should be directed to your course Instructor/ Facilitator. He or she will respond to any questions or concerns in a timely manner. If you still have not received a response after 48 hours, contact the Instructor of Record for assistance.

**Software Requirements:**

Students are highly encouraged to purchase Microsoft Office for their use in this course. All material will be posted in this format, and it is the preferred format for electronic submission of homework. It is available to purchase in a student edition and is very reasonably priced. Use of any other software package does not guarantee compatibility with the instructor’s resources and may not be able to be opened.

The instructor/facilitators of the course use PC computers. If you use an Apple (Mac) computer, it is your responsibility to ensure that the files can be opened on a PC.

**Blackboard:**

You may view your grades under the **Tools** button on Blackboard in the **My Grades** Link. If you go into this section, you will be able to view any grades posted by the Facilitator. Students are expected to check Blackboard content at least once in every 24 hour period. Students are responsible for all information and assignments posted on Blackboard.

**Construction Review**

Find and photograph (or video) a building that represents each type and subcategory of building construction plus in the lesson or for roofs, each type of roof described. Quality of photograph is less important that description of why you believe the building is of a particular type. List the location and describe why you attribute this type of construction to the particular building, using APA citations to relate your observations to the text or other credible sources- CITATIONS ARE REQUIRED. Be detailed in your description.

Submit the files on Blackboard on by 5 PM on the day BEFORE class.

**Final Examination:**

There will be a final examination for this class. Details on the exam will be offered as the exam approaches but is scheduled for

**Service Learning:**

***Introduction to Service Learning***

Service learning is the incorporation of relevant and meaningful community service, enhanced academic learning, and purposeful civic learning. The combination of these three items forms your FSE 201 service learning experience.

* Relevant and meaningful community service shall be provided in the form of volunteer service for Habitat for Humanity. Habitat for Humanity provides housing to low income families by using volunteers to perform the majority of the construction work.
* Enhanced academic learning will be obtained from the process itself. It is often difficult to visualize topics discussed in class without experiencing them firsthand. The inclusion in the construction process will allow for an enhanced understanding of the methods and materials commonly used for construction.
* Civic learning will be enhanced by allowing you to perform volunteer work with a community service agency. Habitat for Humanity is nationwide and a strong working relationship with this organization will follow you wherever your career may take you.

***Requirements****:* As a part of FSE 201S, each student will be required to volunteer a minimum of 12 hours at a Habitat for Humanity worksite. There are several components to this project that will be intermittently addressed throughout class, culminating in final submittal of your work. Following is a rough description of each of the components. More detail will be provided as the class progresses.

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| --- | --- | --- |
| **Component** | **Description** | **Percent of Project Grade** |
| Service Hours | Each student will volunteer a minimum of twelve (12) hours of service in a minimum of two separate site visits. There will be deadlines for these that will be outlined in more detail in the class. | 30% |
| Post Test | Each student will complete QEP Post Test for evaluation of their critical thinking ability. This is a completion/effort Grade. | 10% |
| Journal Papers | Each student shall write a reflection paper following each of their visits. There will be a minimum of two reflection papers per student due at the end of the semester. | 20% |
| Final Paper | Each student shall complete a summary paper of their experiences. Special attention shall be given to the application of the student learning outcomes outlined in this syllabus. | 30% |
| Project Folder | Each student will compile their work log, journal papers, final paper, and presentation slides into a folder for submittal of the project. The project grade will be derived from the contents of this binder. | 10% |
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**Accessing NFPA Codes**

This course uses a variety of NFPA codes. Luckily, the University has access to NFPA’s National Fire Codes Online which allows you to download all codes currently published by NFPA. To access this tool, follow these steps.

1. Go to [www.library.eku.edu](http://www.library.eku.edu)
2. Click on the tab for Databases.
3. In the search box, type NFPA.
4. Click on the National Fire Codes Online.
5. Login using your EKU Username and password (same as your email and blackboard)

From here you can review current and previous editions. You can also save the codes as .pdf. The search function within this database is pretty self-explanatory. I recommend downloading and saving these codes as this will allow you access to them without going through all of these steps.

**PLEASE LOG OUT WHEN DONE. EKU ONLY HAS SO MANY LICENSES AND IT WILL TIE IT UP FOR USE OF YOUR FELLOW STUDENTS IF YOU LEAVE THE SITE WITHOUT LOGGING OUT.**

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| Date | **Topic** | READ BEFORE CLASS | | | Assignments |
|  | **IFSTA Chapters** | **Fire Protection Handbook Chapters** | **Other** |
| 17-Jan | Building Construction and the Fire Service |  |  | NFPA 550, NFPA 220, NFPA 251 and the International Building Code are applicable throughout the class. Please review these and cite them when applicable. |  |
| 19-Jan | Overview of construction and fire concerns in the built environment | 1 | 1.2 | Register For NFA Class Q751 |
| 24-Jan | Building Classifications, Fire Resistance Classifications and Occupancy Classifications | 2 | 12.8 and 19.1 |  |
| 26-Jan | Structural Fire Resistance and fire testing |  | 1.9 and 6.3 |  |
| 31-Jan | Structural Design Features - Loads | 3 |  | Demonstration of Loads |
| 2-Feb | Structural Design Features - Forces |  |  | Demonstration of Forces |
| 7-Feb | Structural Components - columns |  |  |  |
| 9-Feb |  |  | Column exercise |
| 14-Feb | Compare column reports |  |  |  |
| 16-Feb | Structural Components - Beams |  |  |  |
| 21-Feb |  | 19.2 | Beam exercise |
| 23-Feb | Compare Beam Reports |  |  |  |
| 28-Feb | Structural Components - arches, Trusses, Cables and Space Frames |  |  | Submit Grade and Certificate for NFA Q751 |
| 2-Mar | Truss failure concerns |  |  |  |
| 7-Mar | Building Systems | 4 | 8.13 |  |
| 9-Mar | Mid-term exam |  |  | Mid Term Exam |
| 3/14 and 3/16 Spring Break | | | |  |
| 21-Mar | Fire Behavior and Building Construction - Materials at elevated temperatures | 5 | 2.5, 18.1, 18.2, 18.3 & 18.5 |
| 23-Mar |  |  |  |  |
| 28-Mar | Foundations | 6 |  |  |
| 30-Mar | Wood construction | 7 |  |  |
| 4-Apr |  |  | Wood Construction Review |
| 6-Apr | Masonry and Ordinary Construction | 8 |  | Ordinary Construction Review |
| 11-Apr | Steel Construction | 9 |  | Steel Construction Review |
| 13-Apr | Concrete Construction | 10 |  | Concrete Constriction Review |
| 18-Apr | Roofs | 11 |  |  |
| 20-Apr | Buildings under construction | 12 | 11.3, 12.7 & 12.8 |  |
| 25-Apr | FDIC | Complete and document service learning | |  |
| 27-Apr | FDIC |  |
| 2-May | Non-fire building collapse | 14 |  | Service Learning Report due |
| 4-May | Course review |  |  |  |