



# BSET in Fire & Safety Engineering Technology Academic Plan of Study

William States Lee College of Engineering  
Department of Engineering Technology and Construction Management  
[et.uncc.edu](http://et.uncc.edu)

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## PROGRAM SUMMARY

- **Credit Hours:** 122 - 124 hours
  - **Concentrations:** Fire Safety, Fire Protection and Occupational Safety
  - **Declaring the Major:** Students may declare a major in Fire & Safety Engineering Technology at the time of admission. Students in good academic standing may submit a Change of Major form at any time to declare a major in Fire & Safety Engineering Technology. Orientation and/or advising sessions are required for new students.
  - **Advising (For the Major):** Required upon admission to the major and before each semester. Assigned advisors hold group advising followed by individual advising by appointment.
  - **Advising (For General Education):** by Academic Advisors in the department
  - **Minimum Grades/GPA:** GPA of a 2.0 in the major required for graduation. A grade of C or better is required in all freshman level courses as shown on the Suggested Plan of Study.
  - **Teacher Licensure:** No
  - **Evening Classes Available:** Some upper division (junior/senior) classes are available late afternoon or evening on a rotating basis. It is highly unlikely that students would be able to complete the degree requirements through evening courses alone.
  - **Weekend Classes Available:** No.
  - **Other Information:** Students who complete an Associate in Applied Science degree (AAS) in a related field before enrolling at UNC Charlotte are eligible for the Fire & Safety Engineering Technology 2+2 Program which allows students to complete their BSET degree with approximately two additional years of coursework. The ETCM Department also offers a Distance Education option for students interested in earning the BSET in Fire & Safety Engineering Technology in the Fire Safety Concentration. This program, which is set up on a part-time basis, is designed to meet the academic needs of individuals who currently hold an AAS in an appropriate field of study but cannot attend classes on campus during regular semesters.
  - **Contact(s):** Mr. Jeff Kimble, Program Director ([jkimble@uncc.edu](mailto:jkimble@uncc.edu))  
Ms. Alexis Jennings, Academic Advisor ([ajenni25@uncc.edu](mailto:ajenni25@uncc.edu))
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## PROGRAM REQUIREMENTS

The Fire & Safety Engineering Technology (FSET) program at UNC Charlotte prepares graduates of the BSET program for careers across a broad spectrum of technologies. The program has emphasis on both technical and non-technical aspects in the fields of fire and safety.

Concentrations within the program encompass Fire Safety, Fire Protection and Occupational Safety. Many of the lower division courses are common between the concentrations, while the upper division allows specialization within the chosen concentration area.

The Fire Safety concentration is intended for students who seek a career within the fire service. The curriculum is designed to prepare students for increasingly responsible roles in leadership and management. In addition, the program provides comprehensive classes dealing with fire behavior, active and passive protection systems as well as the foundational principles of research investigation. Students completing the requirements identified for this concentration will receive a special designation on their transcripts showing they have completed the Fire Safety concentration.

The Fire Protection concentration is intended for students who are interested in investigating and assessing loss due to fire, along with identifying and enhancing fire prevention techniques and/or mitigation strategies. This multi-disciplinary program introduces areas encompassing construction/ built environment, electrical, mechanical, physical sciences and mathematics, in addition to providing a solid foundation in fire science and safety, through coursework and experiential learning. Quantitative and computer skills are heavily emphasized throughout the program and a capstone experience is required. Students completing the requirements identified for this concentration will receive a special designation on their transcripts showing they have completed the Fire Protection concentration.

The Occupational Safety concentration is intended for students who are interested in the identification and solution of complex safety and environmental challenges. This multi-disciplinary program introduces areas encompassing construction/ built

environment, electrical, mathematics, physical and natural sciences, and human anatomy, in addition to providing a solid foundation in fire science and safety, through coursework and experiential learning. Quantitative and computer skills are heavily emphasized throughout the program and a capstone experience (internship, co-op, or a supervised directed project) is required. Students completing the requirements identified for this concentration will receive a special designation on their transcripts showing they have completed the Occupational Safety concentration.

<b>Areas</b>	<b>Credit Hours</b>	<b>Description</b>
<b>Pre-Major/ Prerequisites</b>	-	Any student declaring a major in the Fire & Safety Engineering Technology program must submit a Change of Major application for review. AAS transfer students must fulfill a series of specified prerequisite courses before proceeding with upper-division coursework. All new FSET majors are required to meet with their Academic Advisor for pre-registration advising.
<b>Major</b>	76-83	Major courses are specified by the department according to a highly structured curriculum that students are advised to follow by semester throughout the concentration chosen.
<b>General Education (not satisfied by other major requirements)</b>	34	Writing & Inquiry (UWRT 1103); Mathematics & Logical Reasoning (MATH 1103 & STAT 1220); Social Science (ANTH 1101/GEOG 1105/ECON 1101, 2101 or 2102/POLS 1110/SOCY 1101); 2 Natural Science Courses (PHYS 1101/1102 with Labs); Themes of Liberal Education (LBST 110X, and LBST 2101, 2102, 211X or 2301, with one designated as CTC).
<b>Related Work</b>	-	
<b>Foreign Language</b>	-	
<b>Electives</b>	6-12	Major electives are selected from the list of approved electives, or approved by the advisor.
<b>Total Credit Hours</b>	122- 123	

# PLAN OF STUDY – BSET FSET WITH CONCENTRATION IN FIRE SAFETY

## Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 1220	Intro to Fire Protection and Prevention	3			Must complete with a grade of C or better
ETFS 1252	Fire Protection & Safety Law	3			Must complete with a grade of C or better
ETGR 1100L	Engineering Technology Computer Applications	1			Must complete with a grade of C or better
ETGR 1201	Intro to Engineering Technology	2			Must complete with a grade of C or better
MATH 1100	College Algebra and Probability	3			Must complete with a grade of C or better
UWRT 1103	Writing and Inquiry in Academic Contexts I & II	3	X		Must complete with a grade of C or better
<i>Spring Semester</i>					
ETFS 1244	Water Based Fire Suppression	3			Must complete with a grade of C or better
ETGR 1103	Technical Drawing I	2			Must complete with a grade of C or better
ETGR 2230	Occupational Safety	3			Must complete with a grade of C or better
LBST 110X	Arts and Society	3	X		
MATH 1103	Precalc Math for Sci & Eng	3	X		Must complete with a grade of C or better

29 Credit Hours for Year

## Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 2132	Building Construction for Fire Protection	3			
LBST 2XXX	LBST 2101, 2102 or 221X	3	X		
PHYS 1101	Introductory Physics I	3	X		Must complete with a grade of C or better
PHYS 1101L	Introductory Physics I Laboratory	1	X		
STAT 1220	Elements of Statistics I	3	X		Must complete with a grade of C or better
XXXX XXXX	Social Science Elective	3	X		
<i>Spring Semester</i>					
ETFS 2126	Fire Investigation	3			
ETFS 2264	Fire Behavior	3			
ETGR 2106	Electrical Circuits	3			
LBST 2XXX	LBST 2101, 2102 or 221X	3	X		
XXXX XXX	Science Elective (BIOL1110, PHYS1102, CHEM12XX or other approved by ETCM Department)	3	X		Must complete with a grade of C or better

31 Credit Hours for Year

## Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 3113	Fire Safety in the Built Environment	3		W	
ETFS 3124	Risk Management	3			
ETFS 3611	Professional Leadership Seminar	1		W,O	
ETGR 3222	Engineering Economics	3			
POLS 3119	State and Local Government	3			
PSYC 2171	Organizational Psychology	3			
<i>Spring Semester</i>					
ETFS 3103	Fire Dynamics	3			
ETFS 3103L	Fire Dynamics Lab	1		W	
ETFS 4123	Community Threat Assessment & Mitigation	3			
ETGR 4303	Applied Ergonomics & Human Factors	3			
LBST2301	Critical Thinking and Communication	3	X		
POLS 3126	Introduction to Public Administration	3			

32 Credit Hours for Year

## Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 3144	Active Fire Protection	3			
ETFS 4243	Research Methodology	3		W,O	
ETFS 4323	Advance Fire Service Administration	3			
ETGR 3295	Multidisciplinary Professional Development	1			
ETGR 4301	Environmental Pollution Control	3			
PSYC 3174	Organizational Psychology	3			
<i>Spring Semester</i>					
ETFS 3123	Industrial Hazards and Electricity	3			
ETFS 4272	Capstone	3		W, O	
ETGR 4302	Industrial Hygiene	3			
XXXX XXXX	Major Elective	3			Chosen from approved major elective list
XXXX XXXX	Major Elective	3			Chosen from approved major elective list

31 Credit Hours for Year

## ADVISING RESOURCES

- General Education Requirements for ALL Students: [ucol.uncc.edu/general-education](http://ucol.uncc.edu/general-education)
- Undergraduate Catalog: [catalog.uncc.edu](http://catalog.uncc.edu)
- Central Advising website: [advising.uncc.edu](http://advising.uncc.edu)
- University Advising Center website: [advisingcenter.uncc.edu](http://advisingcenter.uncc.edu)

# PLAN OF STUDY – BSET/FSET WITH CONCENTRATION IN FIRE PROTECTION

## Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 1220	Intro to Fire Protection and Prevention	3			Must complete with a grade of C or better
ETGR 1100L	Engineering Technology Computer Applications	1			Must complete with a grade of C or better
ETGR 1201	Intro to Engineering Technology	2			Must complete with a grade of C or better
LBST 110X	Arts & Society	3	X		
MATH 1103	Precalc Math for Sci & Eng	3	X		Must complete with a grade of C or better
UWRT 1103	Writing and Inquiry in Academic Contexts I & II	3	X		Must complete with a grade of C or better
<i>Spring Semester</i>					
ETFS 1244	Water Based Fire Suppression	3			Must complete with a grade of C or better
ETGR 1103	Technical Drawing I	2			Must complete with a grade of C or better
ETGR 2230	Occupational Safety	3			Must complete with a grade of C or better
MATH 1121	ET Calculus	3	X		Must complete with a grade of C or better
XXXX XXXX	Social Science Elective	3	X		

29 Credit Hours for Year

## Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 2132	Building Construction for Fire Protection	3			
ETGR 2101	Applied Mechanics I	3			Must complete with a grade of C or better
ETGR 2272	Engineering Analysis II	3			Must complete with a grade of C or better
PHYS 1101	Introductory Physics I	3	X		Must complete with a grade of C or better
PHYS 1101L	Introductory Physics I Laboratory	1	X		
STAT 1220	Elements of Statistics I	3			Must complete with a grade of C or better
<i>Spring Semester</i>					
CHEM 1251	General Chemistry I	3	X		
ETFS 2126	Fire Investigation	3			
ETFS 2264	Fire Behavior	3			
ETGR 2102	Applied Mechanics II or ETME 3123	3			
ETGR2106	Electrical Circuits	3			

31 Credit Hours for Year

## Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 3113	Fire Safety in the Built Environment	3		W	
ETGR 3171	Engineering Analysis III	3			
ETGR 3222	Engineering Economics	3			
ETGR 3295	Multidisciplinary Professional Development	1			
ETME 3133	Fluid Mechanics	3			
LBST 2XXX	LBST 2101, 2102 or 221X	3	X		
<i>Spring Semester</i>					
ETFS 3103	Fire Dynamics	3			
ETFS 3103L	Fire Dynamics Lab	1		W	
ETFS 3123	Industrial Hazards and Electricity	3			
ETGR 4303	Applied Ergonomics & Human Factors	3			
ETME 3143	Thermodynamics	3			
LBST 2301	Critical Thinking and Communication	3	X		

32 Credit Hours for Year

## Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 3144	Active Fire Protection	3			
ETFS 3242L	Fire Testing and Measurement Lab	1		W	
ETFS 4344	Structural Fire Safety	3			
ETGR 4301	Environmental Pollution Control	3			
ETME 4244	Applied Heat Transfer	3			
XXXX XXXX	Major Elective	3			Chosen from approved major elective list
<i>Spring Semester</i>					
ETFS 4283	Fire Modeling	3			
ETFS 4272	Capstone	3		W, O	
ETGR 4302	Industrial Hygiene	3			
LBST 2XXX	LBST 2101, 2102 or 221X	3	X		
XXXX XXXX	Major Elective	3			Chosen from approved major elective list

31 Credit Hours for Year

## ADVISING RESOURCES

- General Education Requirements for ALL Students: [ucol.uncc.edu/general-education](http://ucol.uncc.edu/general-education)
- Undergraduate Catalog: [catalog.uncc.edu](http://catalog.uncc.edu)
- Central Advising website: [advising.uncc.edu](http://advising.uncc.edu)
- University Advising Center website: [advisingcenter.uncc.edu](http://advisingcenter.uncc.edu)

# PLAN OF STUDY – BSET/FSET WITH CONCENTRATION IN OCCUPATIONAL SAFETY

## Freshman Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 1220	Intro to Fire Protection and Prevention	3			Must complete with a grade of C or better
ETFS 1252	Fire Protection & Safety Law	3			Must complete with a grade of C or better
ETGR 1100L	Engineering Technology Computer Applications	1			Must complete with a grade of C or better
ETGR 1201	Intro to Engineering Technology	2			Must complete with a grade of C or better
MATH 1103	Precalc Math for Sci & Eng	3	X		Must complete with a grade of C or better
UWRT 1103	Writing and Inquiry in Academic Contexts I & II	3	X		Must complete with a grade of C or better
<i>Spring Semester</i>					
BIOL 1110	Principles of Biology	3			Must complete with a grade of C or better
ETFS 1244	Water Based Fire Suppression	3			Must complete with a grade of C or better
ETGR 2230	Occupational Safety	3			Must complete with a grade of C or better
MATH 1121	ET Calculus	3	X		Must complete with a grade of C or better
XXXX XXXX	Social Science Elective	3	X		

30 Credit Hours for Year

## Sophomore Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 2132	Building Construction for Fire Protection	3			
ETGR 1103	Technical Drawing I	2			
ETGR 2272	Engineering Analysis II	3			
LBST 2102	Global and Intercultural Connections	3	X		
PHYS 1101	Introductory Physics I	3	X		Must complete with a grade of C or better
PHYS 1101L	Introductory Physics I Laboratory	1	X		
<i>Spring Semester</i>					
CHEM 1251	General Chemistry I	3	X		
CMET 1680	Construction Safety	1			
ETFS 2126	Fire Investigation	3			
ETFS 2264	Fire Behavior	3			
LBST 110X	Arts & Society	3	X		
STAT 1220	Elements of Statistics I	3			Must complete with a grade of C or better

31 Credit Hours for Year

## Junior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
BIOL 2273	Human Anatomy & Physiology	3			
ETFS 3113	Fire Safety in the Built Environment	3		W	
ETFS 3124	Risk Management	3			
ETGR 2106	Electrical Circuits	3			
ETGR 3295	Multidisciplinary Professional Development	1			
LBST 2301	Critical Thinking and Communication	3	X		
<i>Spring Semester</i>					
ETFS 3103	Fire Dynamics	3			
ETFS 3123	Industrial Hazards and Electricity	3			
ETGR 4302	Industrial Hygiene	3			
ETGR 4303	Applied Ergonomics & Human Factors	3			
XXXX XXXX	Directed Elective: PSYC 2171 or PSYC 3174	3			

31 Credit Hours for Year

## Senior Year

Course Number	Course Title	Credit Hours	General Education	W/O Course	Notes
<i>Fall Semester</i>					
ETFS 3144	Active Fire Protection	3			
ETGR 4301	Environmental Pollution Control	3			
LBST 221X	Ethical Issues and Cultural Critique	3	X		
XXXX XXXX	Major Elective	3			Chosen from approved major elective list
XXXX XXXX	Major Elective	3			Chosen from approved major elective list
<i>Spring Semester</i>					
ETFS 4123	Community Threat Assessment & Mitigation	3			
ETFS 4272	Capstone	3		W/O	
ETGR 3222	Engineering Economics	3			
XXXX XXXX	Major Elective	3			Chosen from approved major elective list
XXXX XXXX	Major Elective	3			Chosen from approved major elective list

30 Credit Hours for Year

## ADVISING RESOURCES

- General Education Requirements for ALL Students: [ucol.uncc.edu/general-education](http://ucol.uncc.edu/general-education)
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- University Advising Center website: [advisingcenter.uncc.edu](http://advisingcenter.uncc.edu)