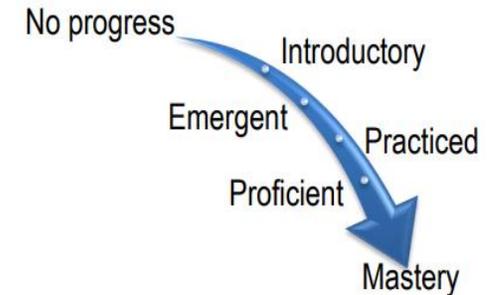




Purdue Global presents this data in compliance with the requirements of the International Fire Service Accreditation Congress (IFSAC).

Bachelor of Science in Fire Science

At Purdue Global, we employ a method called **Course-Level Assessment**, or CLA, to determine student mastery of Course Outcomes. Through CLA, we measure how well students gain the skills, knowledge, abilities, and behaviors that employers expect of program graduates. A series of courses prepares students for employment by providing preparation, practice, and opportunities to show mastery of these program outcomes. Each course is developed around a number of learning goals, known as course outcomes, that support a student’s growing mastery of program level outcomes. Faculty members assess each student’s mastery of each course outcome through Course Level Assessments.



Program Measure for Standard of Success:

- 75% or more of students attempting the outcome will perform at the **Emergent** level or greater in **100/200** level courses
- 75% or more of students attempting the outcome will perform at the **Emergent** level or greater in **300/400** level courses

Program Outcomes Data for 2023–2024 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 96%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 100%	Yes
Identify types of fire spread.	FS101-3 = 96%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-4 = 100%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-5 = 96%	Yes
Illustrate how forces and loads act upon buildings.	FS102-1 = 100%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-2 = 100%	Yes
Explain the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-3 = 100%	Yes
Identify types of building designs and structures.	FS102-4 = 93%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 93%	Yes
Explain the concepts of fire service hydraulics and water supply.	FS103-1 = 100%	Yes
Describe the principles of various water systems.	FS103-2 = 93%	Yes
Discuss fire stream tactics and principles.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 94%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 88%	Yes
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-4 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine the application of risk management concepts that affect strategic and tactical decision making processes.	FS302-1 = 100%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-2 = 97%	Yes
Create an effective community risk reduction program.	FS304-6 = 87%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 100%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 96%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 97%	Yes
Assess the legal system, its constitutional origin, and its components and functions as applied to emergency services.	FS402-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the principles of the legal system as it pertains to the management of human resources within the realm of emergency services.	FS402-3 = 97%	Yes
Analyze legal issues and their application towards reduction of risk and liability in emergency services.	FS402-4 = 94%	Yes
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 88%	Yes
Illustrate various types of fire protection systems.	FS104-2 = 100%	Yes
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 100%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 100%	No

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe how the role of the fire service administration works with regard to fire prevention within municipal government.	FS105-4 = 100%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-4 = 97%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-2 = 89%	Yes
Analyze the role of fire investigators, including in those incidents involving deaths and injuries.	FS301-6 = 83%	Yes
Develop investigative processes based on various types of fires.	FS301-3 = 92%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 97%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-2 = 97%	Yes
Evaluate community risk reduction programs.	FS304-4 = 94%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-1 = 100%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 100%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Use university and fire and emergency service specific resources to enhance learning.	FS100-1 = 100%	Yes
Discuss the time management skills necessary to succeed as a college student and member of fire and emergency services.	FS100-4 = 91%	Yes
Describe the role professionalism and individual responsibility play in career development.	FS100-5 = 100%	No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 96%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-5 = 96%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Identify fire service laws, regulations, & terminology.	FS202-1 = 100%	Yes
Describe how fire departments function as part of local governments.	FS202-5 = 100%	Yes
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-4 = 100%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-2 = 100%	Yes
Differentiate between the types of laws pertinent to emergency services.	FS208-1 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-2 = 100%	Yes
Discuss federal and state laws that have an impact on the management of emergency services.	FS208-3 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-4 = 100%	Yes
Recognize ethical issues that impact emergency services.	FS208-5 = 100%	Yes
Evaluate the characteristics of fire science analysis and investigation organizations.	FS301-1 = 97%	Yes
Evaluate the circumstances that might lead to unsafe acts during emergency incidents.	FS302-2 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Determine the importance of behavioral health and wellness programs within emergency services.	FS302-5 = 100%	Yes
Analyze community risk.	FS304-1 = 100%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 96%	Yes
Select effective financial and department resource management methods.	FS401-5 = 96%	Yes
Examine the role of ethics in the execution of emergency services and its influence on leadership and decision-making.	FS402-6 = 97%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 100%	Yes
Analyze a department-level budget.	FS403-2 = 100%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 100%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 100%	Yes
Examine the process of conducting fire-related research	FS413-1 = 100%	Yes
Analyze fire research methodologies regarding current issues and trends within fire emergency services.	FS413-4 = 100%	Yes
Justify a research plan using one or more qualitative and/or quantitative methodologies.	FS413-5 = 100%	Yes
Develop a fire-related research proposal.	FS413-6 = 97%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Relate mathematics to the field of study.	GEL-2.1 = N/A	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 100%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 100%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 97%	Yes
Formulate challenges in the disciplinary processing of an individual in an EMS & Fire Agency.	FS414-4 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

DNA = Data Not Available

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 93%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Apply fire control principles that effectively utilize resources, including preplans, personnel, equipment, and extinguishing agents for a public assembly and commercial scenario.	FS201-4 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.	FS201-5 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-3 = 93%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 96%	Yes
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics. BSFS-5	FS498-12 = 100%	Yes

Program Outcomes Data for 2022–2023 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 96%	Yes
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 92%	Yes
Identify types of fire spread.	FS101-3 = 84%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-4 = 84%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-5 = 89%	Yes
Illustrate how forces and loads act upon buildings.	FS102-1 = 100%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-2 = 96%	Yes
Explain the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-3 = 100%	Yes
Identify types of building designs and structures.	FS102-4 = 95%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 89%	Yes
Explain the concepts of fire service hydraulics and water supply.	FS103-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the principles of various water systems.	FS103-2 = 100%	Yes
Discuss fire stream tactics and principles.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 100%	Yes
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 75%	Yes
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-4 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine the application of risk management concepts that affect strategic and tactical decision making processes.	FS302-1 = 97%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-2 = 95%	Yes
Create an effective community risk reduction program.	FS304-6 = 85%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 100%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 100%	Yes
Assess the legal system, its constitutional origin, and its components and functions as applied to emergency services.	FS402-2 = 100%	Yes
Apply the principles of the legal system as it pertains to the management of human resources within the realm of emergency services.	FS402-3 = 94%	Yes
Analyze legal issues and their application towards reduction of risk and liability in emergency services.	FS402-4 = 100%	Yes
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 75%	Yes
Illustrate various types of fire protection systems.	FS104-2 = 95%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 90%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 90%	No
Describe how the role of the fire service administration works with regard to fire prevention within municipal government.	FS105-4 = 100%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-4 = 96%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-2 = 93%	Yes
Analyze the role of fire investigators, including in those incidents involving deaths and injuries.	FS301-6 = 96%	Yes
Develop investigative processes based on various types of fires.	FS301-3 = 100%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 100%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the the program needs.	FS304-2 = 95%	Yes
Evaluate community risk reduction programs.	FS304-4 = 95%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-1 = 86%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 100%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Use university and fire and emergency service specific resources to enhance learning.	FS100-1 = 86%	Yes
Discuss the time management skills necessary to succeed as a college student and member of fire and emergency services.	FS100-4 = 80%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the role professionalism and individual responsibility play in career development.	FS100-5 = 74%	No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 96%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-5 = 89%	Yes
Identify fire service laws, regulations, & terminology.	FS202-1 = 100%	Yes
Describe how fire departments function as part of local governments.	FS202-5 = 90%	Yes
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-4 = 100%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-2 = 100%	Yes
Differentiate between the types of laws pertinent to emergency services.	FS208-1 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-2 = 100%	Yes
Discuss federal and state laws that have an impact on the management of emergency services.	FS208-3 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-4 = 100%	Yes
Recognize ethical issues that impact emergency services.	FS208-5 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Evaluate the characteristics of fire science analysis and investigation organizations.	FS301-1 = 96%	Yes
Evaluate the circumstances that might lead to unsafe acts during emergency incidents.	FS302-2 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 95%	Yes
Determine the importance of behavioral health and wellness programs within emergency services.	FS302-5 = 100%	Yes
Analyze community risk.	FS304-1 = 100%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 100%	Yes
Select effective financial and department resource management methods.	FS401-5 = 100%	Yes
Examine the role of ethics in the execution of emergency services and its influence on leadership and decision-making.	FS402-6 = 88%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 100%	Yes
Analyze a department-level budget.	FS403-2 = 100%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 100%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 100%	Yes
Examine the process of conducting fire-related research.	FS413-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Analyze fire research methodologies regarding current issues and trends within fire emergency services.	FS413-4 = 100%	Yes
Justify a research plan using one or more qualitative and/or quantitative methodologies.	FS413-5 = 100%	Yes
Develop a fire-related research proposal.	FS413-6 = 96%	Yes
Relate mathematics to the field of study.	GEL-2.1 =	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 94%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 94%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 91%	Yes
Formulate challenges in the disciplinary processing of an individual in an EMS & Fire Agency.	FS414-4 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

DNA = Data Not Available

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 89%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Apply fire control principles that effectively utilize resources, including preplans, personnel, equipment, and extinguishing agents for a public assembly and commercial scenario.	FS201-4 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.	FS201-5 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-3 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 95%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics. BSFS-5	FS498-12 = 100%	Yes

Program Outcomes Data for 2021–2022 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 87%	Yes
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 88%	Yes
Identify types of fire spread.	FS101-3 = 94%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-4 = 88%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-5 = 79%	Yes
Illustrate how forces and loads act upon buildings.	FS102-1 = 100%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-3 = 100%	Yes
Identify types of building designs and structures.	FS102-4 = 100%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 100%	Yes
Explain the concepts of fire service hydraulics and water supply.	FS103-1 = 100%	Yes
Describe the principles of various water systems.	FS103-2 = 100%	Yes
Discuss fire stream tactics and principles.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 100%	Yes
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 89%	Yes
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-4 = 97%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine the application of risk management concepts that affect strategic and tactical decision making processes.	FS302-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-2 = 94%	Yes
Create an effective community risk reduction program.	FS304-6 = 92%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 97%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 100%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 94%	Yes
Assess the legal system, its constitutional origin, and its components and functions as applied to emergency services.	FS402-2 = 97%	Yes
Apply the principles of the legal system as it pertains to the management of human resources within the realm of emergency services.	FS402-3 = 97%	Yes
Analyze legal issues and their application towards reduction of risk and liability in emergency services.	FS402-4 = 97%	Yes
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 75%	Yes
Illustrate various types of fire protection systems.	FS104-2 = 100%	Yes
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 100%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 71%	No
Describe how the role of the fire service administration works with regard to fire prevention within municipal government.	FS105-4 = 100%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-4 = 100%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-2 = 94%	Yes
Analyze the role of fire investigators, including in those incidents involving deaths and injuries.	FS301-6 = 84%	Yes
Develop investigative processes based on various types of fires.	FS301-3 = 87%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 94%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 97%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 89%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 88%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-2 = 94%	Yes
Evaluate community risk reduction programs.	FS304-4 = 94%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-1 = 100%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 100%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Use university and fire and emergency service specific resources to enhance learning.	FS100-1 = 87%	Yes
Discuss the time management skills necessary to succeed as a college student and member of fire and emergency services.	FS100-4 = 83%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the role professionalism and individual responsibility play in career development.	FS100-5 = 77%	Yes
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 91%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-5 = 86%	Yes
Identify fire service laws, regulations, & terminology.	FS202-1 = 91%	Yes
Describe how fire departments function as part of local governments.	FS202-5 = 100%	Yes
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 89%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-4 = 90%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-2 = 88%	Yes
Differentiate between the types of laws pertinent to emergency services.	FS208-1 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-2 = 100%	Yes
Discuss federal and state laws that have an impact on the management of emergency services.	FS208-3 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-4 = 100%	Yes
Recognize ethical issues that impact emergency services.	FS208-5 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Evaluate the characteristics of fire science analysis and investigation organizations.	FS301-1 = 94%	Yes
Evaluate the circumstances that might lead to unsafe acts during emergency incidents.	FS302-2 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Determine the importance of behavioral health and wellness programs within emergency services.	FS302-5 = 100%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-1 = 100%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 97%	Yes
Select effective financial and department resource management methods.	FS401-5 = 97%	Yes
Examine the role of ethics in the execution of emergency services and its influence on leadership and decision-making.	FS402-6 = 97%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 94%	Yes
Analyze a department-level budget.	FS403-2 = 97%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 94%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 97%	Yes
Examine the process of conducting fire-related research.	FS413-1 = 96%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Analyze fire research methodologies regarding current issues and trends within fire emergency services.	FS413-4 = 100%	Yes
Justify a research plan using one or more qualitative and/or quantitative methodologies.	FS413-5 = 100%	Yes
Develop a fire-related research proposal.	FS413-6 = 100%	Yes
Relate mathematics to the field of study.	GEL-2.1 =	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 89%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 86%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 96%	Yes
Formulate challenges in the disciplinary processing of an individual in an EMS & Fire Agency.	FS414-4 = 96%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 97%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

DNA = Data Not Available

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 100%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Apply fire control principles that effectively utilize resources, including preplans, personnel, equipment, and extinguishing agents for a public assembly and commercial scenario.	FS201-4 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.	FS201-5 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-3 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics. BSFS-5	FS498-12 = 100%	Yes

Program Outcomes Data for 2020–2021 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 100%	Yes
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 100%	Yes
Identify types of fire spread.	FS101-3 = 100%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-4 = 100%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-5 = 98%	Yes
Illustrate how forces and loads act upon buildings.	FS102-1 = 100%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-3 = 100%	Yes
Identify types of building designs and structures.	FS102-4 = 100%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 100%	Yes
Explain the concepts of fire service hydraulics and water supply.	FS103-1 = 100%	Yes
Describe the principles of various water systems.	FS103-2 = 100%	Yes
Discuss fire stream tactics and principles.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 100%	Yes
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 100%	
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-4 = 88%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine the application of risk management concepts that affect strategic and tactical decision making processes.	FS302-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	304-2 = 94%	Yes
Create an effective community risk reduction program.	304-6 = 81%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 92%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 97%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 94%	Yes
Assess the legal system, its constitutional origin, and its components and functions as applied to emergency services.	FS402-2 = 100%	Yes
Apply the principles of the legal system as it pertains to the management of human resources within the realm of emergency services.	FS402-3 = 100%	Yes
Analyze legal issues and their application towards reduction of risk and liability in emergency services.	FS402-4 = 100%	Yes
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = 100%	Yes
Illustrate various types of fire protection systems.	FS104-2 = 100%	Yes
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 100%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 100%	Yes
Describe how the role of the fire service administration works with regard to fire prevention within municipal government.	FS105-4 = 100%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-4 = 98%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-2 = 100%	Yes
Analyze the role of fire investigators, including in those incidents involving deaths and injuries.	FS301-6 = 100%	Yes
Develop investigative processes based on various types of fires.	FS301-3 = 96%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = 94%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 100%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the the program needs.	FS304-2 = 96%	Yes
Evaluate community risk reduction programs.	FS304-4 = 90%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-1 = 94%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 100%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Use university and fire and emergency service specific resources to enhance learning.	FS100-1 = 83%	Yes
Discuss the time management skills necessary to succeed as a college student and member of fire and emergency services.	FS100-4 = 96%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the role professionalism and individual responsibility play in career development.	FS100-5 = 100%	Yes
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 100%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-4 = 100%	Yes
Identify fire service laws, regulations, & terminology.	FS202-1 = 100%	Yes
Describe how fire departments function as part of local governments.	FS202-5 = 94%	Yes
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-4 = 100%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-2 = 100%	Yes
Differentiate between the types of laws pertinent to emergency services.	FS208-1 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-2 = 100%	Yes
Discuss federal and state laws that have an impact on the management of emergency services.	FS208-3 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-4 = 100%	Yes
Recognize ethical issues that impact emergency services.	FS208-5 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Evaluate the characteristics of fire science analysis and investigation organizations.	FS301-1 = 100%	Yes
Evaluate the circumstances that might lead to unsafe acts during emergency incidents.	FS302-2 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Determine the importance of behavioral health and wellness programs within emergency services.	FS302-5 = 100%	Yes
Develop community risk reduction program objectives, based on the most appropriate methods to meet the program needs.	FS304-1 = 94%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 100%	Yes
Select effective financial and department resource management methods.	FS401-5 = 100%	Yes
Examine the role of ethics in the execution of emergency services and its influence on leadership and decision-making.	FS402-6 = 93%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 100%	Yes
Analyze a department-level budget.	FS403-2 = 100%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 100%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 100%	Yes
Examine the process of conducting fire-related research.	FS413-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Analyze fire research methodologies regarding current issues and trends within fire emergency services.	FS413-4 = 100%	Yes
Justify a research plan using one or more qualitative and/or quantitative methodologies.	FS413-5 = 100%	Yes
Develop a fire-related research proposal.	FS413-6 = 100%	Yes
Relate mathematics to the field of study.	GEL-2.1 =	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 96%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 100%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 92%	Yes
Formulate challenges in the disciplinary processing of an individual in an EMS & Fire Agency.	FS414-4 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

DNA = Data Not Available

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-5 = 100%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Apply fire control principles that effectively utilize resources, including preplans, personnel, equipment, and extinguishing agents for a public assembly and commercial scenario.	FS201-4 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.	FS201-5 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-3 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-3 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 97%	Yes
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics. BSFS-5	FS498-12 = 100%	Yes

Program Outcomes Data for 2019–2020 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 98%	Yes
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 98%	Yes
Identify types of fire spread.	FS101-3 = 98%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-4 = 100%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-5 = 97%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-1 = 100%	Yes
Illustrate how forces and loads act upon buildings.	FS102-2 = 100%	Yes
Identify types of building designs and structures.	FS102-3 = 95%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-4 = 100%	Yes
Examine the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-5 = 95%	Yes
Illustrate common problems firefighters face in relation to hydraulics & water supply.	FS103-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the principles of various water systems.	FS103-2 = 100%	Yes
Contrast water system adequacy with reliability.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 100%	Yes
Discuss fire stream tactics and principles.	FS103-6 = 100%	Yes
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = DNA	
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-4 = 58%	No
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-5 = 100%	Yes
Examine the application of risk management concepts that affect strategic and tactical decision-making processes.	FS302-1 = 100%	Yes
Develop risk reduction objectives & determine appropriate methods to meet them.	304-1 = 100%	Yes
Create an effective community risk reduction program.	304-3 = 96%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-2 = 100%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = DNA	
Assess the legal system, its constitutional origin, and its components and functions as applied to emergency services.	FS402-2 = DNA	
Apply the principles of the legal system as it pertains to the management of human resources within the realm of emergency services.	FS402-3 = DNA	
Analyze legal issues and their application towards reduction of risk and liability in emergency services.	FS402-4 = DNA	
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe fire suppression and detection systems for buildings with occupancy challenges.	FS104-5 = DNA	

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Illustrate various types of fire protection systems.	FS104-2 = 100%	Yes
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 100%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 100%	Yes
Describe how the role of the fire service administration works with regard to fire prevention within municipal government.	FS105-4 = 97%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-2 = 100%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-3 = 94%	Yes
Analyze role of fire investigators, including in those incidents involving deaths and injuries.	FS301-4 = 86%	Yes
Develop investigative processes based on various types of fires.	FS301-5 = 94%	Yes
Discuss the origins and role of government in the administration and operation of emergency services.	FS402-1 = DNA	
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 100%	Yes
Develop effective intervention strategies given community research and involvement.	FS304-2 = 96%	Yes
Evaluate community risk reduction programs.	FS304-4 = 100%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-5 = 100%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 100%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Use university and fire and emergency service specific resources to enhance learning.	FS100-1 = 100%	Yes
Discuss the time management skills necessary to succeed as a college student and member of fire and emergency services.	FS100-4 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the role professionalism and individual responsibility play in career development.	FS100-5 = 100%	Yes
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 93%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-4 = 88%	Yes
Identify fire service laws, regulations, & terminology.	FS202-3 = 90%	Yes
Describe how fire departments function as part of local governments.	FS202-4 = 58%	No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-3 = 100%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-4 = 100%	Yes
Describe the 16 Firefighter Life Safety Initiatives.	FS204-6 = 100%	Yes
Differentiate between the types of laws pertinent to emergency services.	FS208-1 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-2 = 100%	Yes
Discuss federal and state laws that have an impact on the management of emergency services.	FS208-3 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-4 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Recognize ethical issues that impact emergency services.	FS208-5 = 100%	Yes
Evaluate the characteristics of fire science analysis and investigation organizations and apply these characteristics to the management of fire departments.	FS301-1 = 94%	Yes
Evaluate the circumstances that might lead to unsafe acts during emergency incidents.	FS302-2 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Determine the importance of behavioral health and wellness programs within emergency services.	FS302-5 = 100%	Yes
Develop risk reduction objectives & determine appropriate methods to meet them.	FS304-1 = 100%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 100%	Yes
Select effective financial and department resource management methods.	FS401-5 = 96%	Yes
Examine the role of ethics in the execution of emergency services and its influence on leadership and decision-making.	FS402-6 = 93%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 100%	Yes
Analyze a department-level budget.	FS403-2 = 100%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 100%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Evaluate current fire-related research.	FS413-1 = 100%	Yes
Apply fire research methodologies to current issues and trends.	FS413-2 = 98%	Yes
Defend a fire-related research proposal.	FS413-3 = 97%	Yes
Analyze a fire service safety issue using common data collection and management methodologies.	FS413-4 = 88%	Yes
Relate mathematics to the field of study.	GEL-2.1 =	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 100%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 100%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 100%	Yes
Formulate challenges in the disciplinary processing of an individual in an EMS & Fire Agency.	FS414-4 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

DNA = Data Not Available

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-1 = 100%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Explain the importance of pre-fire planning.	FS201-2 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as transportation emergencies, high-rise fires, and below ground and confined space emergencies.	FS201-6 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-5 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-5 = 100%	Yes
Demonstrate how technological advancements can increase the safety and survival of emergency services personnel.	FS302-4 = 100%	Yes
Examine the fire officer's role within the organization, with the community, and during emergency response.	FS401-2 = 97%	Yes
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics. BSFS-5	FS498-12 = 100%	Yes

Program Outcomes Data for 2018–2019 Academic Year

BSFS-1 Program Outcomes

Fire Foundations: Demonstrate an understanding of building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 97%	Yes
Explain heat flux as well as its implications in the danger of fire heat transfer.	FS101-2 = 100%	Yes
Identify types of fire spread.	FS101-3 = 94%	Yes
Interpret and explain factors that have an effect on the energy release rate.	FS101-4 = 93%	Yes
Describe the role fire gases play in the development and spread of fire.	FS101-5 = 100%	Yes
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-1 = 100%	Yes
Illustrate how forces and loads act upon buildings.	FS102-2 = 90%	Yes
Identify types of building designs and structures.	FS102-3 = 100%	Yes
Define the basic codes and regulations related to building construction projects.	FS102-4 = 100%	Yes
Examine the various types of construction materials in order to describe the dangers posed to firefighters.	FS102-5 = 100%	Yes
Illustrate common problems firefighters face in relation to hydraulics & water supply.	FS103-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe the principles of various water systems.	FS103-2 = 100%	Yes
Contrast water system adequacy with reliability.	FS103-3 = 100%	Yes
Identify community fire flow demands and water supplies.	FS103-4 = 100%	Yes
Apply methods of pumping operations given the current incident or situation.	FS103-5 = 100%	Yes
Discuss fire stream tactics and principles.	FS103-6 = 100%	Yes
Interpret fire suppression and detection systems as presented in building construction plans.	FS104-1 = 100%	Yes
Describe development of fire safety codes, inspection procedures, and enforcement.	FS105-3 = 100%	Yes
Explain how fire protection services are organized.	FS202-2 = 100%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-5 = 100%	Yes
Evaluate safety-related behaviors, which incorporate leadership, supervision, accountability, and personal responsibility.	FS302-1 = 100%	Yes
Develop risk reduction objectives & determine appropriate methods to meet them.	304-1 = 100%	Yes
Create an effective community risk reduction program.	304-3 = 100%	Yes
Formulate effective decisions based on fire service management & leadership guidelines.	FS401-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Assess the impact of codes and standards and inspection review processes as it relates to fire prevention.	FS401-4 = 100%	Yes
Assess the government's role in fire, EMS, and public safety.	FS402-1 = 100%	Yes
Formulate human resources policies based on government roles and impacts.	FS402-2 = 90%	Yes
Examine the role of the American legal system in relation to fire and EMS systems.	FS402-3 = 100%	Yes
Assess influence of legislative and political bodies upon fire and EMS policies & procedures.	FS402-4 = 90%	Yes
Fire Foundations: Demonstrate an understanding of building construction as it relates to fire fighter safety, building codes, fire prevention, code inspection, and firefighting strategy and tactics. BSFS -1	FS498-8 = 100%	Yes

BSFS-2 Program Outcomes

Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Interpret fire suppression and detection systems as presented in building construction plans.	FS104-1 = 100%	Yes
Illustrate various types of fire protection systems.	FS104-2 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Discuss extinguishment methods and effective use of clean agent systems.	FS104-3 = 100%	Yes
Define the functions of a fire alarm system and proper inspection, testing and maintenance requirements.	FS104-4 = 100%	Yes
Describe how the role of the fire service administration with regard to fire prevention, work municipal government.	FS105-4 = 100%	Yes
Analyze the physical properties of various kinds of fuels.	FS301-2 = 94%	Yes
Evaluate types of laboratory services that will be utilized during analysis & investigation.	FS301-3 = 94%	Yes
Analyze role of fire investigators, including in those incidents involving deaths and injuries.	FS301-4 = 94%	Yes
Develop investigative processes based on various types of fires.	FS301-5 = 94%	Yes
Assess the government's role in fire, EMS, and public safety.	FS402-1 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes

BSFS-3 Program Outcomes

Psychology: Analyze the issues that deal with the psychological effects of fire dynamics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Describe occupational health and safety programs utilized in emergency services.	FS204-2 = 100%	Yes
Develop effective intervention strategies given community research and involvement.	FS304-2 = 100%	Yes
Evaluate community risk reduction programs.	FS304-4 = 100%	Yes
Analyze fire and EMS department and officer roles in community risk reduction.	FS304-5 = 100%	Yes
Psychology: Analyze the issues that deal with the psychological effects of fire dynamics. BSFS-3	FS498-10 = 91%	Yes

BSFS-4 Program Outcomes

Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Describe various career opportunities in the fire service.	FS100-1 = 100%	Yes
Demonstrate the ability to utilize university and fire and emergency service specific resources to enhance learning.	FS100-4 = 82%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Identify significant historical events that directly lead to changes in the fire service.	FS100-5 = 100%	Yes
Explain how motivating factors of modern fire research impact fire science.	FS101-1 = 97%	Yes
Interpret and explain the factors that have an effect on the energy release rate.	FS101-4 = 93%	Yes
Identify fire service laws, regulations, & terminology.	FS202-3 = 100%	Yes
Describe how fire departments function as part of local governments.	FS202-4 = 88%	Yes
Explain the history of health and safety programs for emergency service agencies.	FS204-1 = 100%	Yes
Discuss the fundamentals of health and safety programs as well as the federal regulations and industry standards that impact them.	FS204-3 = 100%	Yes
Apply risk identification and risk evaluation concepts to promote safety within emergency services settings.	FS204-4 = 100%	Yes
Describe the 16 Firefighter Life Safety Initiatives.	FS204-6 = 100%	Yes
Describe the legal responsibilities of emergency services personnel.	FS208-1 = 91%	Yes
Explain common legal issues that impact emergency services.	FS208-2 = 100%	Yes
Discuss the aspects of criminal and civil laws that emergency services agencies are likely to encounter.	FS208-3 = 100%	Yes
Discuss the state and local laws that have an effect on the management of emergency services.	FS208-4 = 100%	Yes
Analyze the impact of recent legal decisions on emergency services agencies.	FS208-5 = 92%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Evaluate the characteristics of fire science analysis and investigation organizations and apply these characteristics to the management of fire departments.	FS301-1 = 88%	Yes
Develop strategic and tactical decision-making skill through the application of risk management concepts.	FS302-2 = 100%	Yes
Evaluate the circumstances that might lead to unsafe acts.	FS302-3 = 100%	Yes
Analyze investigation data and determine how to use the information to support behavioral change in emergency services personnel.	FS302-5 = 100%	Yes
Develop risk reduction objectives & determine appropriate methods to meet them.	FS304-1 = 90%	Yes
Appraise fire prevention research as a part of community risk reduction & education.	FS401-3 = 100%	Yes
Select effective financial and department resource management methods.	FS401-5 = 100%	Yes
Examine the ethical roles of government fire and EMS officials.	FS402-5 = 100%	Yes
Apply the skills and actions of leadership and management.	FS403-1 = 100%	Yes
Analyze a department-level budget.	FS403-2 = 100%	Yes
Evaluate appropriate methods of managing standard operating procedures and departmental policies.	FS403-3 = 100%	Yes
Determine effective methods and techniques for creating and maintaining a team environment.	FS403-4 = 100%	Yes
Evaluate current fire-related research.	FS413-1 = 100%	Yes

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply fire research methodologies to current issues and trends.	FS413-2 = 100%	Yes
Defend a fire-related research proposal.	FS413-3 = 100%	Yes
Analyze a fire service safety issue using common data collection and management methodologies.	FS413-4 = 100%	Yes
Relate mathematics to the field of study.	GEL-2.1 =	DNA
Compare general human resources management issues with those common to fire and EMS agencies.	FS414-1 = 100%	Yes
Forecast the possible personnel management concerns that affect the operations of fire and EMS agencies.	FS414-2 = 100%	Yes
Develop recommendations, solutions, and policies for common personnel management matters.	FS414-3 = 100%	Yes
Analyze rules, regulations, laws, and policies that impact human resources management.	FS414-4 = 100%	Yes
Fire Investigation and Analysis: Investigate technical, legal, and social aspects of arson. BSFS-2	FS498-9 = 100%	Yes
Research Methods: Apply scientific methods of inquiry to arrive at reasoned decisions regarding fire science. BSFS-4	FS498-11 = 100%	Yes

BSFS-5 Program Outcomes

Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.

Measurement	Assessment/Evaluation Results: % at or greater than Standard	Meets Criteria Yes/No
Apply the standards of building construction, as well as building and fire codes, to firefighter safety.	FS102-1 = 100%	Yes
Explain commonly used methods to formulate firefighting strategies & tactics.	FS201-1 = 100%	Yes
Apply fire control principles that effectively utilize resources, including personnel, equipment, and extinguishing agents for a residential scenario.	FS201-2 = 100%	Yes
Explain strategies and tactics that can be employed in special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.	FS201-5 = 100%	Yes
Apply the components of planning and operations to multiple agency responses to major incidents.	FS202-3 = 90%	Yes
Identify the components of response safety plans, pre-incident planning procedures, and training safety policies.	FS204-5 = 100%	Yes
Examine how technological advancements can increase the safety and survival of emergency services personnel.	FS302-3 = 100%	Yes
Select effective financial and department resource management methods.	FS401-5 = 96%	Yes
Technology: Analyze methods that integrate the use of technology to inform and enhance operational and strategic decisions that will enhance firefighting strategy and tactics.BSFS-5	FS498-12 = 100%	Yes

DNA = Data Not Available