**William States Lee College of Engineering**

**Degree Program Student Learning Outcomes**

**BSCE Civil Engineering**

BSCE01 Students will be able to identify, formulate, and solve Civil engineering problems by applying principles of engineering, science, and mathematics.

BSCE02 Students will effectively communicate through technical report writing.

BSCE03 Students will effectively communicate through oral presentations.

BSCE04 Students who graduate with an energy infrastructure concentration will be able to identify, formulate, and solve energy infrastructure design problems.

BSCE05 Students who graduate with an environmental/water resources engineering concentration will be able to apply engineering design to produce solutions that consider public health, safety, and welfare, in addition to environmental and economic factors.

BSCE06 Students who graduate with a geotechnical engineering concentration will be able to apply engineering design to produce solutions that consider public health, safety, and welfare, in addition to environmental and economic factors.

BSCE07 Students who graduate with a land development engineering concentration will be able to apply engineering design to produce solutions that consider public health, safety, and welfare, in addition to environmental and economic factors.

BSCE08 Students who graduate with a structures concentration will be able to apply engineering design to produce solutions that consider public health, safety, and welfare, in addition to environmental and economic factors.

BSCE09 Students who graduate with a transportation concentration will be able to apply engineering design to produce solutions that consider public health, safety, and welfare, in addition to environmental and economic factors.

**MSCE Civil Engineering**

MSCE01 Students will analyze and evaluate advanced topics in civil engineering.

MSCE02 Students will communicate technical information through written reports.

MSCE03 Students will analyze and evaluate advanced topics in civil engineering.

MSCE04 Students will communicate technical information through oral presentation.

**BSCpE Computer Engineering**

BSCPE01 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science and mathematics.

BSCPE02 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

BSCPE03 Communicate effectively with a range of audiences.

BSCPE04 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal context.

BSCPE05 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

BSCPE06 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

BSCPE07 Acquire and apply new knowledge as needed, using appropriate learning strategies.

**BSEE Electrical Engineering**

BSEE01 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science and mathematics.

BSEE02 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

BSEE03 Communicate effectively with a range of audiences.

BSEE04 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal context.

BSEE05 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

BSEE06 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

BSEE07 Acquire and apply new knowledge as needed, using appropriate learning strategies.

**MSEE Electrical Engineering**

MSEE01 Students analyze and evaluate advanced topics in engineering.

MSEE02 Students effectively communicate technical information.

**PhD Electrical Engineering**

PHDEE01 Students analyze and evaluate advanced topics in engineering.

PHDEE02 Students effectively communicate technical information.

PHDEE03 Students discover and create new knowledge.

**BSCM Construction Management**

BSCM01 Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.

BSCM02 Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications.

BSCM03 Students will demonstrate the ability to present oral reports.

**BSET Civil Engineering Technology**

BSETCE01 Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.

BSETCE02 Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications.

BSETCE03 Students will demonstrate the ability to present oral reports.

**BSET Electrical Engineering Technology**

BSETELET01 Students will demonstrate the ability to use proper resources to obtain necessary information.

BSETELET02 Students will demonstrate the ability to present oral reports.

BSETELET03 Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.

**BSET Fire Safety**

BSETFS01 Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.

BSETFS02 Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications.

BSETFS03 Students will demonstrate the ability to present oral reports.

**BSET Mechanical Engineering Technology**

BSETMET01 Students will demonstrate the ability to use proper resources to obtain necessary information.

BSETMET02 Students will demonstrate the ability to present oral reports.

BSETMET03 Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.

**Master of Fire Protection and Administration**

MFPA01 Students analyze and evaluate advanced topics in engineering.

MFPA02 Students effectively communicate technical information.

**Master of Science in Applied Energy & Electromechanical Systems**

MSERELE01 Students analyze and evaluate advanced topics in engineering.

MSERELE02 Students effectively communicate technical information.

**MSCM Construction and Facilities Management**

MSCFM01 Students analyze and evaluate advanced topics in engineering.

MSCFM02 Students effectively communicate technical information.

**BSME Mechanical Engineering**

BSME01 Students are knowledgeable in the applications of science, mathematics and engineering principles for solving technical problems.

BSME02 Students are able to identify, analyze, and solve mechanical engineering problems.

BSME03 Students are experienced in effective communication skills and have demonstrated their proficiency through technical report writing and oral presentations.

BSME04 Students are prepared to engage in the design of automotive systems, components, or processes to meet specified goals.

BSME05 Students are prepared to engage in the design of energy systems, components, or processes to meet specified goals.

BSME06 Students are prepared to engage in the design of biomedical systems, components, or processes to meet specified goals.

**MSME Mechanical Engineering**

MSME01 Students analyze and evaluate advanced topics in engineering.

MSME02 Students effectively communicate technical information.

**PhD Mechanical Engineering**

PHDME01 Students analyze and evaluate advanced topics in engineering.

PHDME02 Students effectively communicate technical information.

PHDME03 Students discover and create new knowledge.

**PhD in Infrastructure and Environmental Systems**

PHDINES01 Students analyze and evaluate advanced topics in INES.

PHDINES02 Student communication technical information.

PHDINES03 Students analyze and evaluate advanced topics in INES.

PHDINES04 Student communicate technical information.

**BSSE System Engineering**

BSSE01 An ability to apply knowledge of mathematics, science, and engineering.

BSSE02 An ability to identify, formulate, and solve engineering problems.

BSSE03 An ability to communicate effectively.

BSSE04 An ability to design and conduct experiments, as well as to analyze and interpret data.

BSSE05 An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

BSSE06 An ability to function on multidisciplinary teams.

BSSE07 An understanding of professional and ethical responsibility.

BSSE08 The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

BSSE09 A recognition of the need for, and an ability to engage in life-long learning.

BSSE10 A knowledge of contemporary issues.

BSSE11 An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**MSEM Engineering Management on Campus**

MSEMONCAMPUS01 Students analyze and evaluate advanced topics in engineering.

MSEMONCAMPUS02 Students effectively communicate technical information.

**MSEM Engineering Management Online**

MSEMONLINE01 Students analyze and evaluate advanced topics in engineering.

MSEMONLINE02 Students effectively communicate technical information.