

William States Lee College of Engineering

BSCE Civil Engineering

Student Learning Outcome:

1. Students will be able to identify, formulate, and solve civil engineering problems by applying principles of engineering, science, and mathematics.
2. Students will be able to identify, formulate, and solve civil engineering problems by applying principles of engineering, science, and mathematics.
3. Students will effectively communicate through technical report writing.
4. Students will effectively communicate through oral presentations.
5. Students who graduate with an energy infrastructure concentration will be able to identify, formulate, and solve energy infrastructure design problems.
6. Students who graduate with land development 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/MS Engineering

Student Learning Outcome:

1. Students will analyze and evaluate advanced topics in civil engineering through written reports.
2. Students will communicate technical information through written reports.
3. Students will analyze and evaluate advanced topics in civil engineering by oral presentation.
4. Students will communicate technical information through oral presentation.

PhD Civil Engineering

Student Learning Outcome:

1. Students will analyze and evaluate advanced topics in civil engineering through written reports.
2. Students will communicate technical information through written reports.
3. Students will analyze and evaluate advanced topics in civil engineering through oral presentation.
4. Students will communicate technical information through oral presentation.

BSCpE Computer Engineering

Student Learning Outcome:

1. Students will be able to demonstrate an ability to apply knowledge of mathematics, science, and engineering.
2. Students will be able to demonstrate an ability to identify, formulate, and solve engineering problems.
3. Students will be able to demonstrate an ability to communicate effectively (both oral and written).

4. Students who graduate with a machine learning concentration will be able to identify, formulate, and solve machine learning design problems

BSEE Electrical Engineering

Student Learning Outcome:

1. Students will be able to demonstrate an ability to apply knowledge of mathematics, science, and engineering.
2. Students will be able to demonstrate an ability to identify, formulate, and solve engineering problems.
3. Students will be able to demonstrate an ability to communicate effectively.
4. Students who graduate with a machine learning concentration will be able to identify, formulate, and solve machine learning design problems.

MSCpE Computer Engineering

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in engineering.
2. Students effectively communicate technical information.

MSEE Electrical Engineering

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in engineering.
2. Students effectively communicate technical information.

PhD Electrical Engineering

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in engineering.
2. Students effectively communicate technical information.
3. Students discover and create new knowledge.

BSCM Construction Management

Student Learning Outcome:

1. Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.
2. Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications
3. Students will demonstrate the ability to present oral reports

BSET Electrical Engineering Technology- On Campus and Online

Student Learning Outcome:

1. Students will demonstrate the ability to present oral reports
2. Students will demonstrate the ability to develop alternate strategies to solve open-ended problems
3. Students will demonstrate the ability to function effectively as a member or leader of a technical team.

BSET Engineering Technology, Civil**Student Learning Outcome:**

1. Students will demonstrate the ability to develop alternate strategies to solve open-ended problems.
2. Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications.
3. Students will demonstrate the ability to present oral reports

BSET Engineering Technology, Mechanical**Student Learning Outcome:**

1. Students will demonstrate the ability to present oral reports
2. Students will demonstrate the ability to develop alternate strategies to solve open-ended problems
3. Students will demonstrate the ability to function effectively as a member or leader of a technical team

BSET Fire and Safety Engineering (FSET)- On Campus and Online**Student Learning Outcome:**

1. Students will demonstrate the ability to formulate or design a system, process, procedure or program to meet desired needs
2. Students will demonstrate the ability to solve technical problems to satisfy a given set of specifications

MS Applied Energy & Electromechanical Engineering**Student Learning Outcome:**

1. Students analyze and evaluate advanced topics in engineering
2. Students effectively communicate technical information

Applied Energy Grad Cert**Student Learning Outcome:**

1. Students will analyze and evaluate advanced topics in engineering
2. Students will effectively communicate technical information

MS Construction and Facilities Engineering

Student Learning Outcome:

1. **Students analyze and evaluate advanced topics in engineering**
2. **Students effectively communicate technical information**

MS Fire Protection and Safety Management

Student Learning Outcome:

1. **Students analyze and evaluate advanced topics in engineering**
2. **Students effectively communicate technical information**

BSSE System Engineering

Student Learning Outcome:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to 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.
3. An ability to communicate effectively with a range of audiences.
4. An ability to 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 contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

MS Engineering Management – On-Campus and Online

Student Learning Outcome:

1. Students will analyze and evaluate advanced topics in engineering.
2. Students communicate technical information.

BSME Mechanical Engineering

Student Learning Outcome:

1. Students are knowledgeable in the applications of science, mathematics and engineering principles for solving technical problems.
2. Students are able to identify, analyze, and solve mechanical engineering problems
3. Students are experienced in effective communication skills and have demonstrated their proficiency through technical report writing and oral presentations.

4. Students are prepared to engage in the design of automotive systems, components, or processes to meet specified goals
5. Students are prepared to engage in the design of energy systems, components, or processes to meet specified goals
6. Students are prepared to engage in the design of biomedical systems, components, or processes to meet specified goals
7. Students are prepared to engage in the design of precision engineering systems, components, or processes to meet specified goals

MSME Mechanical Engineering

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in engineering.
2. Students effectively communicate technical information.

PhD Mechanical Engineering

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in engineering.
2. Students effectively communicate technical information.
3. Students discover and create new knowledge.

Precision Metrology, Grad Cert

Student Learning Outcome:

1. Students will demonstrate knowledge of the principles of measurement.
2. Students effectively perform and record measurements.

PhD Infrastructure and Environmental Systems

Student Learning Outcome:

1. Students analyze and evaluate advanced topics in INES.
2. Students communicate technical information (written dissertation).
3. Students communicate technical information (final dissertation defense).
4. Students will learn to communicate technical information. (final dissertation defense)