

Assessment: Assessment Plan

Degree Program - ENG - Chemical Engineering (BSCHE)

CIP Code: 14.0701.00

Disciplinary Accrediting Body: ABET

Degree Program Coordinator: Gerri Botte

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Program Purpose Statement: The educational objectives of the department are threefold: 1) graduates will be successful in chemical engineering-related careers and other diverse career paths; 2) graduates will continue professional development and will pursue continuing education opportunities relevant to their careers; and 3) some graduates will pursue advanced degrees. In addition, the departmental vision is to be the undergraduate chemical engineering department of choice in Texas and to be recognized as one of the top research and graduate chemical engineering departments in the nation.

Assessment Coordinator: Jeff Rammage

Modality: Face-to-Face

Student Learning Outcome: ABET Criterion 3.1

An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Senior Exit Interview - Questions 3 (Problem-Solving Skills), 4 (Math skills), 5 (Computing skills), 6 (Fundamental knowledge) (Active)

Criterion: Score of 4.0 or higher for each question

Schedule: Yearly

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Student learning outcome "1" met

Schedule: Yearly

Post-Test - Comprehensive Senior Examination (Active)

Criterion: 50% or higher on the Comprehensive Senior Exam

Schedule: Yearly

Standardized Test - Fundamentals of Engineering exam, administered by NCEES (Active)

Criterion: 100 % of students taking FE exam pass

Schedule: Yearly

Student Exit Survey - Senior Exit Interview Questions 3 (Critical Judgement), 4 (creative thinking), 5 (Problem-solving skills), 6 (Math skills), 8 (Fundamental knowledge), 13 (Independence) (Active)

Criterion: Score of 4.0 or higher for each question

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Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.2

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 factor.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Senior Exit Interview - Question 11 (Design ability)
Question 10 (Safety and Environment in Design) (Active)

Criterion: Score of 4.0 or higher

Schedule: Yearly

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Student learning outcome "2" met

Schedule: Yearly

Course Level Assessment - Course Grade in ChE 4555 Capstone Design (Active) (Active)

Criterion: 100% of students receive C or better

Capstone Assignment/Project - Simulation grade in ChE 4555 Capstone Design project report (Active)

Criterion: 100% of students receive 70% or better

Schedule: Yearly

Standardized Test - Fundamentals of Engineering exam administered by NCEES (Active)

Criterion: 1.0 on Design and Economics ratio score

Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.3

An ability to communicate effectively with a range of audiences.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Senior Exit Interview - questions 1 (Writing skills) and 2 (Speaking skills) (Active)

Criterion: score of 4.0 or higher

Schedule: Yearly

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: outcome 3-3 met

Schedule: Yearly

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Capstone Assignment/Project - External judging of capstone design project posters (Active)

Criterion: 100% of teams have a presentation score of > 70%

Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.4

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.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Senior Exit Interview - ethical and professional responsibility (Safety): Questions 16 (Process Safety) ethical and professional responsibility: Question 17 (Professional Behavior) and 18 (Ethical Behavior) impact of solutions: Question 19 (Awareness of the political and societal context of engineering (Active)

Criterion: Score of 4.0 or higher on each question

Schedule: Yearly

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Criteria 4 met

Schedule: Yearly

Exam - Environmental, Health, and Safety quiz in ChE 3232 and 4232 (Active)

Criterion: 100% of students receive C or better

Schedule: Fall and Spring semester

Capstone Assignment/Project - External judging of poster section: analysis of the impact of their design in a societal context (Active)

Criterion: 100% of teams receive above 60%

Schedule: Yearly

Standardized Test - Fundamentals of Engineering exam administered by NCEES (Active)

Criterion: 1.0 or greater on EH&S ratio score

Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.5

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.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

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Senior Exit Interview - Questions 12 (Teamwork) and 15 (Leadership) (Active)

Criterion: Score of 4.0 or higher

Schedule: Yearly

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Criteria 5 met

Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.6

An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Criteria 6 met

Schedule: Yearly

Senior Exit Interview - Questions 7 (Experimental Design) and 8 (Data Analysis) (Active)

Criterion: Score 4.0 or higher

Schedule: Yearly

Exam - Statistics quiz in ChE 4232 (Active)

Criterion: 100% of passing students obtain "C" or better

Schedule: Yearly

Standardized Test - Fundamentals of engineering exam administered by the NCEES (Active)

Criterion: 1.0 or greater on Statistics ratio score

Schedule: Yearly

Student Learning Outcome: ABET Criterion 3.7

An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 01/01/2018

Assessment Methods

Senior Exit Interview - Question 20 (Ability to learn on own) (Active)

Criterion: Score of 4.0 or better

Schedule: Yearly

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Instructor Course Evaluation - One or more performance indicators using HWs, quizzes, exams, and/or projects (Active)

Criterion: Criteria 7 met

Schedule: Yearly

Senior Exit Interview - Participation in professional organization (Active)

Criterion: 50% of students participate

Schedule: Yearly

Senior Exit Interview - Participation in research, industrial experience or plan for advanced degree (Active)

Criterion: 30% or higher do student research, 15% or higher do student co-op, and 15% or higher plan on advanced degree

Schedule: Yearly