ENGINEERING & TECHNOLOGY – ASSOCIATE IN ARTS DEGREE

Top Code:

0924.00

The Engineering and Technology area of emphasis allows students the opportunity to pursue multidisciplinary programs of study at the university level. This area of emphasis provides a flexible environment for high-achieving students to study complex engineering disciplines such as architectural engineering, biochemical engineering, computer sciences, electromechanical engineering, mathematics, mechanical engineering, engineering mathematics, engineering physics, and other similar disciplines at CSU, UC, and private universities.

Please Note: *The courses that universities and colleges require for transfer vary. When selecting courses for transfer purposes, students should consult with Counseling Services to determine the particular transfer requirements of specific transfer institutions.*

Program Outcomes

- Analyze and evaluate disciplinary concepts and principles to solve complex problems.
- Synthesize research findings, disciplinary techniques and technology in the resolution of a capstone assessment.
- Successfully realize cumulative achievement to achieve Degree attainment or transfer.

Requirements for the area of emphasis

Courses must be completed with a grade of C or better. All courses must be numbered 001–099. Students must complete 18 units with at least 3 units in three of the disciplines listed below.

Code	Title	Units
Architecture		
ARCH 010A	ARCHITECTURAL DESIGN FUNDAMENTALS	3
ARCH 010B	DESIGN FUNDAMENTALS	3
ARCH 011	INTRODUCTION TO ARCHITECTURE	2
ARCH 012A	VISUAL COMMUNICATIONS I	3
ARCH 012B	VISUAL COMMUNICATIONS II (DIGITAL MEDIA)	3
ARCH 014	MATERIALS AND PROCESSES OF CONSTRUCTION	2
ARCH 020A	ARCHITECTURAL DESIGN	6
ARCH 020B	ARCHITECTURAL DESIGN	6
ARCH 022A	ARCHITECTURAL PRACTICE	5
ARCH 022B	ARCHITECTURAL PRACTICE	5
ARCH 024A	HISTORY OF ARCHITECTURE	3
ARCH 024B	HISTORY OF ARCHITECTURE	3
Computer Information Systems		
CIS 010	INTRODUCTION TO INFORMATION SYSTEMS	3
CIS 011	INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS	4
CIS 014	C++ PROGRAMMING	3
CIS 016	JAVA PROGRAMMING	3
CIS 031	INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS	3
CIS 040	UNIX/LINUX ADMINISTRATION	3
CIS 062	INTRODUCTION TO SYSTEMS ANALYSIS	3
Computer Science		
CS 001	INTRODUCTION TO COMPUTERS AND PROGRAMMING	3
CS 002	FUNDAMENTALS OF COMPUTER SCIENCE I	4
CS 003A	FUNDAMENTALS OF COMPUTER SCIENCE II (C++)	4
CS 003B	FUNDAMENTALS OF COMPUTER SCIENCE II (JAVA)	4
CS 006	INTRODUCTION TO APPLIED LOGIC DESIGN	4
CS 008	FUNDAMENTALS OF COMPUTER SCIENCE III - DATA STRUCTURES	4
CS 018	UNIX SCRIPTING WITH BASH	4
CS 038	INTRODUCTION TO SOFTWARE ENGINEERING	5
CS 045	DISCRETE STRUCTURES WITH COMPUTER SCIENCE APPLICATIONS	5
CS 066	ASSEMBLY LANGUAGE PROGRAMMING FOR THE SCIENCES AND MATHEMATICS	4
CS 080	SEMINAR IN COMPUTER SCIENCE AND COMPUTER ENGINEERING	2
Electricity and Electronics		
ELTY 012	BASIC ELECTRICITY-ELECTRONICS	2
ELTN 015	COMPUTER AIDED ELECTRONIC DRAFTING	3
ELTN 025	LOGIC & MICROCOMPUTER ELECTRONICS	4
ELTN 031	CIRCUIT ANALYSIS	5
ELTN 032	DIGITAL AND CONTROL ELECTRONICS	4
Engineering		
ENGR 001A	SURVEYING	3
ENGR 002	ENGINEERING GRAPHICS	3
ENGR 010	INTRODUCTION TO ENGINEERING	2
ENGR 014	MATERIALS OF CONSTRUCTION	3
ENGR 015B	APPLIED MECHANICS	3
ENGR 016	ENGINEERING CIRCUITS	3
Design Technology		
DT 008A	INTRODUCTION TO DIGITAL DESIGN AND FABRICATION	3
DT 008B	INTERMEDIATE DIGITAL DESIGN AND FABRICATION	3
DT 008C	ADVANCED SYSTEMS DESIGN AND FABRICATION	4
DT 017	BUILDING DESIGN & CONSTRUCTION TECHNICAL GRAPHICS	3
Mathematics		
MATH 003	COLLEGE ALGEBRA FOR STEM	5
MATH 005A	SINGLE VARIABLE CALCULUS I	5

MATH 005AH	HONORS SINGLE VARIABLE CALCULUS I	5
MATH 005B	SINGLE VARIABLE CALCULUS II	5
MATH 005BH	HONORS SINGLE VARIABLE CALCULUS II	5
MATH 005C	MULTIVARIABLE CALCULUS	5
MATH 005CH	HONORS MULTIVARIABLE CALCULUS	5
MATH 008	PRECALCULUS TRIGONOMETRY	4
MATH 009	PRECALCULUS MATHEMATICS	6
MATH 010	LINEAR ALGEBRA AND APPLICATIONS	4
MATH 022	DISCRETE MATHEMATICS	4
MATH 055	DIFFERENTIAL EQUATIONS	4
MATH 055H	HONORS DIFFERENTIAL EQUATIONS	4
Physics		
PHYS 001A	PHYSICS FOR SCIENTISTS AND ENGINEERS I: MECHANICS	5
PHYS 001B	GENERAL PHYSICS	5
PHYS 001C	GENERAL PHYSICS	5
PHYS 001D	GENERAL PHYSICS	5
PHYS 002A	GENERAL PHYSICS	4
PHYS 002B	GENERAL PHYSICS	4
PHYS 008A	PHYSICS FOR SCIENTISTS AND ENGINEERS I: MECHANICS	5
PHYS 008B	PHYSICS FOR SCIENTISTS AND ENGINEERS II: WAVES, ELECTRICITY & MAGNETISM	5
PHYS 008C	PHYSICS FOR SCIENTISTS AND ENGINEERS III: THERMODYNAMICS, OPTICS, AND MODERN PHYSICS	5
PHYS 031A	CALCULUS-BASED COLLEGE PHYSICS I	5
PHYS 031B	CALCULUS-BASED COLLEGE PHYSICS II	5

Visit the Program Mapper (https://pasadena-city.programmapper.ws/academics/interest-clusters/35afad1b-8598-4ecf-a320-0ed4834a7df8/programs/6d54f79f-8713-448a-51f8-90707014882c/) for a suggested sequence of courses.

General Education Requirements for the Associate in Arts Degree

- General Information (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/)
- PCC Local Gen Ed (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#pcclocaltext)
- CSU Breadth (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#csubreadthtext)
- IGETC (https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#igetctext)