



Advanced & Biomedical Manufacturing Technology Career

Program Goals Statement

This concentration prepares students to enter highly-automated manufacturing industries as automation specialists and manufacturing technicians or for technical positions in biotechnology and pharmaceutical manufacturing industries. In the advanced manufacturing option: Students learn to solve complex manufacturing problems using computer-aided design, evaluation and simulation techniques, and engineering principles. The curriculum covers such aspects of manufacturing engineering as materials processing (traditional and CNC), industrial automation, material science, hydraulics, computer-aided design and manufacturing (CAD/CAM), and computer-integrated manufacturing (CIM).

Program Information

- This program is especially valuable to the person who wants technical diversity. Summer courses will reduce fall and spring semester course loads.

Suggested Technical Electives

- Manufacturing: EGR-112, EGR-211, CAD-211, and choose one EGR-190, EGR-299, CAD-101, CAD-112, or any CED
- Bio-Manufacturing: BIO-121 and choose one BIO-115 or BIO-233, choose one BIO-126, BIO-240, or CHM-113
- Automation & Robotics: EGR-113, EGR-171, and EGR-211

After Bristol

- Graduates of the biomedical option can enter the workforce as biomedical, bioprocess or pharmaceutical manufacturing technicians.
- Graduates work as automation specialists, manufacturing technicians, design technicians, CAD designers, engineering aides, field service technicians, technical representatives, and maintenance technicians. It will open employment doors to many jobs that require multidisciplinary competencies.
- If you considering transfer to a four-year institution, visit the Transfer Affairs website at www.BristolCC.edu/transfer

Infused General Education Competencies

Oral Communication

Subject: Engineering
Type: Associate Degree



Campus

Campus:

Fall River
Item #
Title
Credits

General Courses

Item #	Title	Credits
CSS 101	College Success Seminar	1
ENG 101	Composition I: College Writing	3
ENG 102	Composition II: Writing about Literature	3

Core Courses

Item #	Title	Credits
CAD 111	Mechanical Design with Solidworks	3
EGR 103	Computer Skills for Engineers and Technicians	3
EGR 151	Electrical Machinery	3
EGR 215	Lean Six Sigma	3
EGR 172	Material Science	4
EGR 215	Lean Six Sigma	3

Choose one of the following

Item #	Title	Credits
HST 113	United States History to 1877	3
HST 114	United States History from 1877	3

Elective Courses

Humanities Elective: Choose from ARC 201, ART 105, ART 106, COM 160, ENG 217, ENG 251, ENG 252, ENG 255, ENG 256, ENG 257, ENG 259, ENG 261, ENG 264, HST 226, HST 252, HST 257, HST 259, HST 265, HUM 160, HUM 254, PHL 101, or PHL 152

Social Phenomenon Elective: See General Education Competency Courses (p.) for Social Phenomenon course listings (ECN 111, ECN 112, PHL 152, PSY 271, or SOC 101 recommended)

Item #	Title	Credits
	Humanities Elective	3
	Social Phenomenon Elective	3



Program Electives

Program Electives (as needed to complete a minimum of 61 credits)

Item #	Title	Credits
BIO 115	Survey of Human Anatomy and Physiology	4
BIO 121	Fundamentals of Biological Science I	4
BIO 126	Introduction to Biotechnology	3
BIO 240	Cell Biology	4
CAD 112	Advanced Mechanical Design with Solidworks	3
CAD 211	Computer Aided Manufacturing	3
CHM 113	Fundamentals of Chemistry I	4
EGR 112	Automated Machining	3
EGR 113	Introduction to Robotics	4
EGR 171	Fluid Systems	4
EGR 190	Technical Projects	3
EGR 211	Programmable Control Systems	4
EGR 299	Engineering Projects	4

Choose one of the following

Item #	Title	Credits
EGR 111	Fundamentals of Manual Machining	4
EGR 115	Manufacturing Processes & Measurement	3

Math Courses - Choose Two Sequential Math Courses

Item #	Title	Credits
MTH 152	College Algebra	3
MTH 172	Precalculus with Trigonometry	4
MTH 172	Precalculus with Trigonometry	4
MTH 214	Calculus I	4
MTH 214	Calculus I	4
MTH 215	Calculus II	4

Science Courses - Choose One

(For students with adequate Mathematics preparedness that are interested in transfer, choose PHY 211)

Item #	Title	Credits
PHY 101	Technical Physics I	4
PHY 211	General Physics I	4
EGR 113	Introduction to Robotics	4



Recommended Course Sequence - Semester 1

Item #	Title	Credits
CSS 101	College Success Seminar	1
ENG 101	Composition I: College Writing	3
EGR 103	Computer Skills for Engineers and Technicians	3
	EGR 111 or EGR 115	3-4
	MTH 152 or MTH 172 or MTH 214	3-4

Recommended Course Sequence - Semester 2

Item #	Title	Credits
ENG 102	Composition II: Writing about Literature	3
CAD 111	Mechanical Design with Solidworks	3
	MTH 172 or MTH 214 or MTH 215	4
	Choose two of the following	
EGR 172	Material Science	4
	Technical Elective	3
	Technical Elective	3

Recommended Course Sequence - Semester 3

Item #	Title	Credits
EGR 151	Electrical Machinery	3
EGR 215	Lean Six Sigma	3
PHY 101	Technical Physics I	4
	Technical Elective	3
	And choose one of the following	
	Social Phenomenon Elective	3
	Humanities Elective	3



Recommended Course Sequence - Semester 4

(Additional technical electives if needed for a maximum of 61 credits)

Item #	Title	Credits
	HST 113 or HST 114	3
	Social Phenomenon Elective	3
	Or	
	Humanities Elective	3
EGR 172	Material Science	4
	Technical Elective	3
	Technical Elective	3
	Technical Elective	3
	Total credits:	61