

# ADVANCED MANUFACTURING TECHNOLOGY BACHELOR IN APPLIED SCIENCE

## Program Description

The Applied Baccalaureate in Advanced Manufacturing Technology (BAS) is an intensive, hands-on, project-based degree program designed to meet the needs of industry by preparing graduates for technical and managerial leadership positions in our growing global manufacturing economy.

The Advanced Manufacturing Technology program offers students an affordable option to advance their technical knowledge and competency while also providing local employers with the advanced manufacturing talent they need to grow and prosper in the region.

## Mission Statement

The Bachelor in Applied Science in Advanced Manufacturing Technology degree is designed to provide graduates with the requisite skill sets to empower them to link company advanced manufacturing operations with management directives designed to satisfy customer needs and meet project requirements. Graduates of this program will develop technical and management skills beyond an associate degree, thus providing them a pathway for assuming next-level technical and managerial positions.

## Entrance Requirements

See "Program Requirements" Section for complete requirements.

## Type of Program

Part-time Evening

Visit our web page at <https://www.gvltec.edu/advanced-manufacturing/>.

## Program Requirements

Acceptance to the college does not guarantee immediate acceptance into the Bachelor in Applied Science in Advanced Manufacturing Technology program. **Prior to consideration of program acceptance**, the following must be met:

- Applicants must have completed an associate degree in one of these nine majors or a comparable program of study.
  - Mechatronics Technology (formerly Industrial Maintenance Technology)
  - Machine Tool Technology
  - Computer Numerical Control (CNC) Programming and Operations
  - Mechanical Engineering Technology
  - Electronics Engineering Technology
  - Engineering Design Technology
  - Automotive Technology
  - Aircraft Maintenance Technology
  - General Technology Degree (in manufacturing related to include one of the above programs as a major or minor)
- Students may transfer up to 42 technical program credits from one of the above associate degrees. Students with fewer than 42 technical credits will be required to take additional electives during the BAS

program. Also, students who haven't completed a social science and/or humanities course will be required to complete such courses during the BAS program.

- Transfer credits will not be awarded for any 300 or 400 level course from a non-baccalaureate degree institution.
- Applicants must have a cumulative GPA of 2.5
- Applicants must have completed ENG 101 English Composition I or ENG 165 Professional Communications.
- Applicants must have completed or be eligible for MAT 110 College Algebra or MAT 120 Probability and Statistics .
- Applicants may apply for prior learning (PLA) credit for individual courses, according to GTC policy. PLA or transfer credit will not be awarded for MFG 481 Industry Capstone Project I or MFG 482 Industry Capstone Project II.
- Applicants must complete the online college orientation.
- Applicants must complete and submit the program application form located on the program's webpage (<https://dynamicforms.ngwebsolutions.com/Submit/Form/Start/f287c7e1-034a-4730-a56a-45074a43fa5a/>).

Students will be accepted in the order in which all the above are completed.

## Requirements for Completion

This program requires a minimum grade of "C" in all MFG and EGR courses and MAT 110 College Algebra and MAT 120 Probability and Statistics.

Either PSC 201 American Government OR HIS 201 American History: Discovery to 1877 is required.

- PSC 201 may be taken as either the social science requirement or one of the general education electives.
- HIS 201 may be taken as either the humanities requirement or one of the general education electives.

## Recommended Program Schedule

Listed below is the ideal grouping of courses in order by semester. This plan assumes a part-time evening schedule. Note, however, that many variables can affect this plan, and not every course is offered every semester. Please see your advisor to map out your own personalized progression toward graduation.

Course	Title	Hours
<b>Transfer Credits</b>		
Technical Transfer Credits		42
Social Science Transfer Credit <sup>5</sup>		3
Humanities Transfer Credit <sup>5</sup>		3
<b>First Semester</b>		
MFG 300	Manufacturing Processes and Application	3
MAT 120	Probability and Statistics <sup>1</sup>	3
MFG 311	Work Design, Ergonomics, and Safety	3
General Education Elective <sup>5</sup>		3
<b>Second Semester</b>		
ENG 101	English Composition I	3
MAT 110	College Algebra <sup>1</sup>	3
or MAT 109	College Algebra With Modeling	
MFG 340	Computer Aided Design for Manuf Engineer	3

MFG 321	Advanced Manufacturing Lab I	3
<b>Third Semester</b>		
ENG 102	English Composition II	3
MFG 310	Manufacturing Quality	3
MFG 322	Advanced Manufacturing Lab II	3
<b>Fourth Semester</b>		
SPC 205	Public Speaking	3
MFG 323	Advanced Manufacturing Lab III	3
MFG 330	Manufacturing Project Management	3
MFG 350	Production Process Planning	3
<b>Fifth Semester</b>		
MFG 370	Principles of Lean Manufacturing	3
	Manufacturing Technology Elective <sup>2</sup>	4
MFG 314	Finance for Manufacturing	3
	Operations Management Elective <sup>3</sup>	3
<b>Sixth Semester</b>		
MFG 360	Leadership in Manufacturing	3
MFG 481	Industry Capstone Project I	2
	Manufacturing Technology Elective <sup>2</sup>	4
<b>Seventh Semester</b>		
MFG 482	Industry Capstone Project II	2
	Natural Science w/Lab <sup>4</sup>	4
	General Education Elective <sup>5</sup>	3
<b>Total Required Credit Hours</b>		<b>124</b>

American History: Discovery to 1877 as the humanities requirement or one of the general education elective requirements.

<sup>1</sup> MAT 110 College Algebra or MAT 109 College Algebra With Modeling and MAT 120 Probability and Statistics must be completed prior to 3rd semester in the bachelor degree program.

<sup>2</sup> Manufacturing Technology electives may include:  
A minimum of two manufacturing technology electives (8 credit hours) is required.

- MFG 401 Advanced Metrology
- MFG 402 Additive Manufacturing
- MFG 403 Robotics & Automated Controls III
- MFG 404 Programmable Logic Controllers IV

<sup>3</sup> Operations Management electives may include:  
A minimum of one operations management elective (3 credit hours) is required.

- MFG 312 Manufacturing Enterprise Resource Mgt
- MFG 313 Strategic Sourcing and Procurement

<sup>4</sup> Natural Science: CHM 105 General Organic & Biochemistry, PHS 101 Physical Science I or PHY 201 Physics I recommended

<sup>5</sup> South Carolina Act 26 of 2021, the "REACH Act", requires undergraduate students completing a baccalaureate degree to complete a three-credit course that requires, at a minimum, the reading of the U.S. Constitution, the Declaration of Independence, the Emancipation Proclamation, five Federalist Papers, and one document foundational to the African American Struggle; collectively known as the "Founding Documents." Therefore, students graduating from the BAS.AMT program are required to successfully complete either PSC 201 American Government as the social science requirement or one of the general education elective requirements OR HIS 201