

## Additive Manufacturing, AAS

### School of Technology

The Additive Manufacturing, AAS will provide students with the necessary working knowledge and hands-on experience to operate a production-level 3D printer capable of producing various types of precision polymer and metal parts in the field of additive manufacturing. The operation duties would include preparing 3D CADD files for additive manufacturing process including design improvements, material handling and storage, mold design as a secondary process, routine maintenance, and production management. The primary focus of this program is the front-end operation of an industrial production 3D printing machine.

### Career Opportunities

Graduates of the Additive Manufacturing Technology program will be qualified to prepare CADD files for additive production and efficiently operate and manage a precision production 3D printer. Expected job titles within additive manufacturing: AM Production Designer, AM Operator, AM Production Supervisor, AM Technician.

### Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Identify the various 3D printing processes employed in additive manufacturing.
- Operate precision industrial production 3D printers in the field of additive manufacturing.
- Prepare solid model CADD files for 3D printing.
- Convert traditional machine part documents to 3D solid model CADD files in preparation of a 3D printing process.
- Manage multiple printers focused on maximizing production output, operational safety, and reduction of material waste.
- Design products exclusively for 3D print production.
- Use 3D printers for rapid-prototyping and concept engineering of new product development.
- Perform basic maintenance and troubleshooting of various types of industrial 3D printers.
- Create molds and castings as a secondary process employed in traditional manufacturing

Sugg. Term	Seq #	Course ID	Course Title	Cr.	Term Offered	Prereq/Coreq(Co)	Options Available
1st Fall	1	PDV 101	First Year Seminar	1	F, Sp, Su		
	2	MTH 104	Introduction to Applied Mathematics	4	F, Sp, Su	MTH 052 or Placement	
	3	RBT 111	Electrical Components	4	F		
	4	DFT 105	Blueprint Reading or Technical Drafting I	2-4	F		
	5	DFT 112	Introduction to Design, Materials, and Processes	3	F, Sp, Su		
	6	AMT 101	Introduction to Additive Manufacturing	3	F		
1st Spring	7	DFT 266	3D Solid Modeling I	4	F, Sp, Su		
	8	EGR 104	Engineering Materials	3	Sp	EGR 101, Co: MTH 109 or 158	
	9	AMT 102	Material Handling & Safety	3	Sp	AMT 101	
	10	ENG 161	College Writing	3	F, Sp, Su	ENG 085 or Placement	
	11	MTH 108	Mathematics for the Technologies I	4	F, Sp, Su	MTH 104	
2nd Fall	12	EGR 221	Statics and Strength of Materials	4	F	Co: PHY 107	
	13	AMT 201	3D Printer Operation, Maintenance, and Management	4	F	DFT 105 or 110, DFT 266, AMT 102	
	14	PHY 107	Applied Physics	4	F, Sp, Su	MTH 108, MTH 100, or MTH 100A	
	15	Elective	Social Science Elective	3	F, Sp, Su		Column III
2nd Spring	16	DFT 208	Product Design	3	Sp	EGR 104 or DFT 112	
	17	DFT 267	3D Solid Modeling II	4	Sp	DFT 266	
	18	AMT 202	Additive Manufacturing Mold Design	4	Sp	AMT 201 Co: DFT 208	
	19	ENG 162	Technical Communications	3	F, Sp, Su	ENG 161	

Total Program Credits

65

ADM