

## COMPARISON GUIDE TO IPFW ENGINEERING AND TECHNOLOGY ABET\* ACCREDITED PROGRAMS

	Jobs/Activities of Graduates		Program Objectives	First Year Courses					
				First Semester		Second Semester			
EE	Basic and applied research Production engineering Computer design and applications Plant and field operation Maintenance engineering Process engineering Control engineering Electronics engineering	Field testing Marketing systems Product design Systems design Circuit design Technical sales Field representative Product and component development	Electrical engineering encompasses all areas of research development, design, and operation of electrical and electronic systems and their components. Electrical engineers specialize in such varied areas as circuit theory, communication sciences, computer engineering, electromagnetic fields, energy sources and systems, signal processing, and control systems.						
				MA 165	Plane Analytic Geometry and Calculus I	4	MA 166	Plane Analytic Geometry and Calculus II	4
				CHM 115	General Chemistry I	4	PHYS 152	Mechanics	5
				ENGR 101	Introduction to Engineering	1	ENGR 122	C and C++ Programming for Engineering	2
				ENGR 120	Graphical Communications and Spatial Analysis	2	ENGR 199	Introduction to Engineering Design	3
				ENGR 121	Computer Tools for Engineering	2	ENG W131	English Composition	3
				COM 114	Fundamentals of Speech	3			
				Total		16	Total		17
ME	Design Engineer Heating and Air Conditioning Engineer Application Engineer Manufacturing Engineer Reliability Engineer Test Engineer Product Engineer Analysis Engineer	Research Engineer Development Engineer Quality Assurance Engineer Technical Sales Computer Aided Design Engineer Plant Management Engineer Project Management	The Mechanical engineering program provides a broad-based education, with concentration on fundamentals and basic laws as the major tools requisite for the professional practice of mechanical engineering. The goal of the program is to educate engineers who can think, analyze, design, and solve problems. An extensive range of technical electives allows in-depth preparation in specialized areas of mechanical and thermal systems.						
				MA 165	Plane Analytic Geometry and Calculus I	4	MA 166	Plane Analytic Geometry and Calculus II	4
				CHM 115	General Chemistry I	4	PHYS 152	Mechanics	5
				ENGR 101	Introduction to Engineering	1	ENGR 122	C and C++ Programming for Engineering	2
				ENGR 120	Graphical Communications and Spatial Analysis	2	ENGR 199	Introduction to Engineering Design	3
				ENGR 121	Computer Tools for Engineering	2	ENG W131	English Composition	3
				COM 114	Fundamentals of Speech	3			
				Total		16	Total		17
CAET	Estimator Project Manager Project Engineer Sales/Construction Equipment Materials Testing Product Representation Land Surveying Office Local Government Offices Construction Inspection	Design/Build Facilities Management Residential Design Construction Sales/ Construction Materials Architectural Office Engineering Office GIS/GPS	The Department of Civil and Architectural Engineering Technology has established a curriculum that provides the employers and the public of northeastern Indiana with educated, technologically equipped graduates, able to serve the varied construction industry in advancing the solutions to problems facing the building industry, including construction, architecture, civil engineering and state, county, and city governments						
				MA 151	Algebra and Trigonometry	5	ARET 124	Architectural Engineering Const. I	3
				ARET 123	Construction Graphic Communication	4	ARET 276	Construction Specifications and Contracts	2
				ARET 167	Construction Systems and Materials	3	CET 108	Route Surveying Design or	3
				CET 104	Elementary Surveying	3	ARET 210	Architecture and Urban Form	3
				ETCS 101	Introduction to Engineering, Technology and Computer Science	1	PHYS 218	General Physics	4
							ENG W131	English Composition	3
							CS	Computer Elective	3
				Total		16	Total		18
ECET	Product testing Electrical Power Plant Engineer Process Control Electronic Communication Applications Development	Biomedical Field Operations Technical Marketing Project Management Software System Design Embedded Microsystems Networks Administration Network System Design	The Department of Electrical and Computer Engineering Technology's curriculum focuses upon the application of engineering principles, and techniques to a wide variety of electrical and electronic devices, circuitry, instrumentation and control. ECET students can chose their expertise in areas such as advanced microprocessors, computer networking, computer control, and electronics communications.						
				MA 153	Algebra and Trigonometry I	3	MA 154	Algebra and Trigonometry II	3
				EET 107	Introduction to Circuit Analysis	4	EET 146	Digital Circuits II	3
				EET 111	Digital Circuits I	4	EET 152	Electrical Circuits II	4
				EET 114	Introduction to Microcomputers	3	EET 205	Introduction to Microprocessors	3
				ETCS 101	Introduction to Engineering, Technology and Computer Science	1	ENG W131	English Composition	3
				Total		15	Total		16
MFT	Manufacturing processes Technical service and sales Technical representative Product improvement Production coordination Plant management Plant supervision	Quality assurance Customer service Maintenance Manufacturing Project management Field operations Product testing/evaluation	The Department of Manufacturing Technology offers a curriculum focused upon the application of scientific and engineering principals to manufacturing, manufacturing processes, product design and development, plant layout, work methods design, ergonomics, fluid power, energy, quality, materials, and cost analysis.						
				MET 106	A&C Tools in MET	2	EET 114	Intro. Microcomputers or CS 114	3
				MET 104	Tech. Graphics Comm.	3	MET 180	Materials & Processes	3
				IET 105	Industrial Mgmt.	3	IET 204	Tech. Main. Quality OR	3
				MA 151	Algebra & Trig.	5	MET 201	Statics, Stress & Strain	3
				ENG 131	English Composition	3	PHYS 218	General Physics I	4
				ETCS 101	Intro to Engineering, Technology, and Computer Science	1	MA 227	Calculus for Tech I	4
				Total		17	Total		17

\* For more information about the Accreditation Board for Engineering and Technology (ABET) visit <http://www.abet.org>

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Departments/Programs			Credit Hours Required for Graduation from IPFW					Suggested Courses (High School)	
Engineering  ENGR	Degree		Math (highest)	Science	Engineering	Technical Electives	General Education	Total	Max. Math, Lab. Science, English, Speech, Programming
	Electrical Engineering (EE)	BSEE	20 (MA 262 †)	14	54	15	24	127	
	Mechanical Engineering (ME)	BSME	17 (MA 262 †)	14	59	12	24	128	
Civil and Architectural Engineering Technology  CAET	Degree		Math (highest)	Science	Core Technical	Technical Electives	General Education	Total	Trig., Algebra II, Physics, English, Speech
	Architectural Engineering Technology (ARET)	AS	9 (MA 227 †)	8	43	0	6	66	
	Civil Engineering Technology (CET)	AS	9 (MA 227 †)	8	40	0	9	66	
	Construction Engineering Technology (CNET)	BS	12 (MA 228 †)	14	74	9	24	133	
Electrical and Computer Engineering Technology  ECET	Degree		Math (highest)	Science	Core Technical	Technical Electives	General Education	Total	Trig., Algebra II, Physics, English, Speech
	Electrical Engineering Technology (EET)	AS	13 (MA 228 †)	4	37	4	6	64	
		BS	16 (MA 321 †)	11	55	21	24	127	
Manufacturing Technology  MFT	Degree		Math (highest)	Science	Technical Courses	Communication	General Education	Total	Trig., Algebra II, Physics, English, Speech
	Industrial Engineering Technology (IET)	AS	12 (MA 227 †)	8	33	9	3	65	
		BS	15 (MA 228 †)	11	75	15	12	128	
	Mechanical Engineering Technology (MET)	AS	9 (MA 227 †)	8	37	9	3	66	
		BS	15 (MA 228 †)	11	79	15	12	132	

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† MA 262 – Linear Algebra and Differential Equations; MA 227 – Calculus for Technology I; MA 228 – Calculus for Technology II; MA 321 – Advanced Technical Mathematics

### INTERPRETATION OF THE MATH PLACEMENT RESULTS FOR ENGINEERING MAJORS

COURSE	MA 165	MA 151 MA 153/154	MA 113	MA 109
SCORE	excellent	slight deficiency	moderate deficiency	severe deficiency
COMMENT	ideal placement	good placement	fair placement	poor placement
TIMETABLE	count towards degree	1 or 2 semesters of remedial math	2 or 3 semesters of remedial math	3 or 4 semesters of remedial math
RECOMMENDATION	Engineering	Engineering or Technology	Technology	Technology

FOR MORE INFORMATION ABOUT THESE AND OTHER DEGREES OR CERTIFICATES CONTACT

**DEPARTMENT OF ENGINEERING** (260) 481-6362

**DEPARTMENT OF CIVIL AND ARCHITECTURAL ENGINEERING TECHNOLOGY** (260) 481-6797

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING TECHNOLOGY** (260) 481-6338

**DEPARTMENT OF MANUFACTURING TECHNOLOGY** (260) 481-6385