

Articulation Agreement Proposal for Engineering Technology Associate's Degree programs at Moraine Park Technical College and the BS programs in Mechanical and Electrical Engineering Technology at UW-Green Bay

In accordance with the University of Wisconsin System guidelines for articulation agreements between UW System institutions and WTCS (Wisconsin Technical College System) districts, the following associates programs at MPTC will count for significant block credit transfers into the Mechanical and Electrical Engineering Technology programs at UW-Green Bay. Each will be discussed separately with material required by the AIS 6.2 guidelines for developing program-to-program articulation agreements.

1. UW-Green Bay Mechanical Engineering Technology BS

Presented below is the curriculum for UWGB's Mechanical Engineering Technology Program.

UWGB Mechanical Engineering BS requirements

(without general education and graduation requirements, unless fulfilled by degree requirements)

Support Group (32-37 credits)

| | |
|--------------------|--|
| ET 101 | Fundamentals of Engineering Technology (2 cr) |
| ET 130 | Basic Electrical Circuits I (3 cr) |
| <i>either both</i> | |
| CHEM 211, 213 | Principles of Chemistry I Lecture and Lab (5 cr) |
| CHEM 212, 214 | Principles of Chemistry II Lecture and Lab (5 cr) |
| <i>or</i> | |
| ET 206 | Chemistry for Engineers (5cr) |
| MATH 202 | Calculus & Analytic Geometry I |
| MATH 203 | Calculus & Analytic Geometry II |
| MATH 260 | Introductory Statistics (4 cr) |
| PHYSICS 103 or 201 | Fundamentals of Physics I (5 cr) or Principles of Physics I – either algebra or calculus based |
| PHYSICS 104 or 202 | Fundamentals of Physics II (5 cr) or Principles of Physics II – either algebra or calculus based |

Fundamentals Group (27 credits)

| | |
|----------|--------------------------------------|
| ENGR 213 | Mechanics I: Statics (3 cr) |
| ENGR 214 | Mechanics II: Dynamics (3 cr) |
| ET 105 | Fundamentals of Drawing (3 cr) |
| ET 116 | Basic Manufacturing Processes (3 cr) |
| ET 118 | Fluids I (3 cr) |
| ET 142 | Introduction to Programming (3 cr) |
| ET 207 | Parametric Modeling (3 cr) |
| ET 220 | Mechanics of Materials (3 cr) |
| ET 221 | Machine Components (3 cr) |

Advanced Study Group (28 credits)

| | |
|----------------------|----------------------------------|
| CHEM 320/PHYSICS 320 | Thermodynamics & Kinetics (3 cr) |
| ENGR 301 | Engineering Materials (4 cr) |
| ET 308 | Finite Element Analysis (3 cr) |
| ET 318 | Fluids II (2 cr) |
| ET 322 | Design Problems (3 cr) |
| ET 324 | Motors & Drives (3 cr) |

| | |
|---------------|---|
| ET 360 | Project Management (3 cr) |
| ET 390 | Mechatronics (4 cr) |
| <i>One of</i> | |
| ET 410 | Capstone Project (3 cr) |
| ET 400 | Co-op/Internship in Engineering Technology (3 cr) |

A. MPTC Mechanical Design Technology 10-606-1 Associate's Degree

Rationale for how programs are related: The Associates program in Mechanical Design Technology is a good fit for the fundamentals group of courses in UW-Green Bay's Mechanical Engineering Technology (MET) program. Students completing the associate's degree will meet the desired learning outcomes for the fundamentals course array and some of the supporting courses in UWGB's BS MET degree. Presented below are the curriculum for MPTC's Associate program and the array of courses in the UWGB program that the Associate program will fulfill in a block transfer.

Proposed Articulated Block of Courses

Note that the two lists below, MPTC Associate's degree requirement and block list of classes that the associate's will fulfill, are not equivalent course lists. The MPTC list is the required course list for the associate's degree and the UWGB list is the fundamentals and supporting course block that the MPTC degree will fulfill.

MPTC Mechanical Design Technology Associate

| Course # | Course name | Credits |
|------------|-------------------------------------|---------|
| 10-103-159 | Computer Literacy | 1 |
| 10-606-176 | CAD 2-D, Autocad | 3 |
| 10-617-114 | CAD 3-D, Solidworks | 3 |
| 10-623-162 | Manufacturing Processes | 3 |
| 10-804-113 | Coll. Tech. Math 1A | 3 |
| 10-804-114 | Coll. Tech. Math 1B | 2 |
| 10-890-101 | College 101 | 2 |
| 10-606-116 | Machine Elements | 3 |
| 10-606-132 | Materials of Industry | 3 |
| 10-617-115 | Jig and Fixture Design | 3 |
| 10-801-136 | English Comp. 1 | 3 |
| 10-804-116 | Coll. Tech. Math 2 | 4 |
| 10-809-195 | Economics | 3 |
| 10-606-107 | Component Design | 4 |
| 10-606-112 | Int. Man. Plan.-Mech. Design | 2 |
| 10-606-128 | Design Statics | 3 |
| 10-623-196 | Geo. Dim. And Toler. | 3 |
| One of: | 10-801-196 Oral/Inter. Comm. | 3 |
| | 10-801-197 Technical Report | |
| 10-809-166 | Intro. to Ethics | 3 |
| 10-606-111 | Int. Man. Prod.-Mech. Design | 2 |
| 10-606-125 | Product Design | 4 |
| 10-606-130 | Strength of Materials | 3 |
| 10-617-149 | Tool Design | 4 |
| One of: | 10-809-198 Intro. Psychology | 3 |
| | 10-809-199 Psych Human Rel. | |
| | Elective credits | 3 |
| | | 73 |

UWGB Courses

| Course # | Course name | Credits |
|----------|-----------------------------------|---------|
| ET 101 | Funds Eng Tech | 2 |
| ET 105 | Fund. Of Drawing | 3 |
| ET 116 | Basic Man. Processes | 3 |
| ET 207 | Parametric Model | 3 |
| ET 220 | Mechanics of Materials | 3 |
| ET 221 | Machine Components | 3 |
| | First Year Seminar | 3 |
| | Social Science | 3 |
| | Social Science | 3 |
| | Humanities | 3 |
| | ENG COMP 100 | 3 |
| | MATH 104 (Math Competency) | 4 |
| | Communications | 3 |
| | Elective Credit Block | 34 |
| | | 73 |
| | Direct Course Equivalent | |
| | General Education Course | |

Courses still needed at UWGB

| Course | | Credits |
|---|---|---------|
| MATH 202 | Calculus & Analytic Geometry I | 4 |
| MATH 203 | Calculus & Analytic Geometry II | 4 |
| MATH 260 | Introductory Statistics | 4 |
| PHYSICS 103 | Fundamentals of Physics I | 5 |
| Physics 104 | Fundamentals of Physics II | 5 |
| ET 118 | Fluids 1 | 3 |
| ET 130 | Basic Electrical Circuits 1 | 3 |
| ET 142 | Intro. to Programming | 3 |
| ET 206 | <i>Chemistry for Eng.</i> | 5 |
| <i>Or BOTH</i> | | |
| | <i>CHEM 211/213 Principles of Chemistry 1 (lec & lab)</i> | 5 |
| | <i>CHEM 212/214 Principles of Chemistry 2 (lec & lab)</i> | 5 |
| ET 213 | Mechanics 1: Statics | 3 |
| ET 214 | Mechanics 2: Dynamics | 3 |
| Advanced study group | | 28 |
| Remaining general education & graduation requirements | | |

2. UW-Green Bay Electrical Engineering Technology BS

Presented below is the curriculum for UWGB's Electrical Engineering Technology Program.

UWGB Electrical Engineering BS requirements

(without general education and graduation requirements, unless fulfilled by degree requirements)

Support Group (20 credits)

| | |
|--------------------|--|
| ET 101 | Fundamentals of Engineering Technology (2 cr) |
| MATH 202 | Calculus & Analytic Geometry I (4 cr) |
| MATH 203 | Calculus & Analytic Geometry II (4 cr) |
| PHYSICS 103 or 201 | Fundamentals of Physics I or Principles of Physics I (5 cr) – either algebra or calculus based |
| PHYSICS 104 or 202 | Fundamentals of Physics II or Principles of Physics II (5 cr)-either algebra or calculus based |

Fundamentals Group (29 credits)

| | |
|--------|--|
| ET 105 | Fundamentals of Drawing (3 cr) |
| ET 130 | Basic Electrical Circuits I (3 cr) |
| ET 131 | Basic Electrical Circuits II (3 cr) |
| ET 142 | Introduction to Programming (3 cr) |
| ET 150 | Codes, Safety, and Standards (2 cr) |
| ET 211 | Digital Electronics (3 cr) |
| ET 232 | Semiconductor Devices (3 cr) |
| ET 233 | Linear Circuits (3 cr) |
| ET 240 | Microcontrollers & Programmable Logic Controllers (3 cr) |
| ET 250 | Signals and Systems (3 cr) |

Advanced Study Group (31 credits)

| | |
|---------------|---|
| ET 324 | Motors and Drives (3 cr) |
| ET 340 | Advanced PLCs (3 cr) |
| ET 342 | Supervisory Control and Data Acq (3 cr) |
| ET 344 | Industrial Electronics and Control (3 cr) |
| ET 346 | Electric Power Systems (3 cr) |
| ET 348 | Electromagnetic Fields and Applications (3 cr) |
| ET 350 | Data Communication and Protocols (3 cr) |
| ET 360 | Project Management (3 cr) |
| ET 390 | Mechatronics (4 cr) |
| <i>One of</i> | |
| ET 410 | Capstone Project (3 cr) |
| ET 400 | Co-op/Internship in Engineering Technology (3 cr) |

A. MPTC Mechtronics Associate's Program 10-620-2

Rationale for how programs are related: The Associate's program in Mechatronics is a good fit for the fundamentals group of courses in UW-Green Bay's Electrical Engineering Technology (ElecET) program. Students completing the Associate's degree will meet the desired learning outcomes for the fundamentals course array and some of the supporting courses in UWGB's BS ElecET degree. Presented below are the curriculum for MPTC's Associate's program and the array of courses in the UWGB program that the Associate's program will fulfill in a block transfer.

Proposed Articulated Block of Courses

Note that the two lists below, MPTC Associate's degree requirement and block list of UWGB classes that the Associate's will fulfill, are not equivalent course lists. The MPTC list is the required course list for the Associate's degree and the UWGB list is the fundamentals and supporting course block that the MPTC degree will fulfill.

MPTC Mechatronics Associate

| <u>Course #</u> | <u>Course name</u> | <u>Credits</u> |
|-----------------|---------------------------------------|----------------|
| 10-103-159 | Computer Literacy | 1 |
| 10-620-101 | DC Circuits | 3 |
| 10-620-102 | AC Circuits | 3 |
| 10-801-136 | English Comp. 1 | 3 |
| 10-804-113 | Coll. Tech. Math 1A | 3 |
| 10-804-114 | Coll. Tech. Math 1B | 2 |
| 10-890-101 | College 101 | 2 |
| 10-620-103 | Semiconductor Devices | 3 |
| 10-620-104 | Digital Electronics | 3 |
| 10-620-115 | AC-DC Machinery | 4 |
| 10-804-116 | Coll. Tech. Math 2 | 4 |
| One of: | 10-809-199 <i>Psych Human Rel.</i> | 3 |
| | 10-809-198 <i>Intro. Psych</i> | |
| 10-620-105 | Ind. Hydraulics/Pneumatics 1 | 2 |
| 10-620-110 | Int. Man. Plan.-Mechatronics | 2 |
| 10-620-133 | Data Acquisition Control | 3 |
| 10-620-135 | Basic PLC | 3 |
| 10-620-150 | PC Interfacing & Comm. | 3 |
| 10-806-137 | Comp. Tech. Physics | 4 |
| 10-620-111 | Int. Man. Production | 2 |
| 10-620-136 | Advanced PLC | 3 |
| 10-620-146 | Modern Controls | 3 |
| 10-620-151 | Robotics | 3 |
| 10-801-197 | Technical Reporting | 3 |
| 10-809-166 | Intro Ethics: Theory & App | 3 |
| | | <hr/> 68 |

UWGB Courses

| <u>Course #</u> | <u>Course name</u> | <u>Credits</u> |
|---------------------------------|----------------------------------|----------------|
| ET 101 | Funds Engin. Tech. | 2 |
| ET 105 | Fund. of Drawing | 3 |
| ET 130 | Basic Elec. Circuits I | 3 |
| ET 131 | Basic Elec. Circuits II | 3 |
| ET 142 | Intro. To Program. | 3 |
| ET 150 | Codes, Safety, Stand. | 2 |
| ET 232 | Semiconductor Dev. | 3 |
| ET 240 | Microcon. and PLCs | 3 |
| ET 250 | Signals and Systems | 3 |
| ET 311 | Digital Electronics | 3 |
| PHYSICS 104 | Fund. of Physics II | 5 |
| MATH 104 | Elem Func: Alg & Trig | 4 |
| First Year Seminar | | 3 |
| English Competency | | 3 |
| Humanities | | 3 |
| Social Science | | 3 |
| Communications | | 3 |
| Elective Credit Block | | <hr/> 16 |
| | | 68 |
| Direct Course Equivalent | | |
| General Education Course | | |

Courses still needed at UWGB

| <u>Course</u> | <u>Credits</u> |
|---|---------------------------------|
| ET 233 | Linear Circuits |
| MATH 202 | Calculus & Analytic Geometry I |
| MATH 203 | Calculus & Analytic Geometry II |
| PHYSICS 103 | Fundamentals of Physics I |
| Advanced study group | 31 |
| Remaining general education & graduation requirements | |