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Curriculum Sheet for Catalog Year **FALL 2017****DEARBORN DISCOVERY CORE (DDC)  
Requirements 24****WRITTEN AND ORAL COMM.** (6 credits)*Composition Placement Exam required*

COMP 105 (3) and

COMP 270 (3)

*Both required if not taken to fulfill DDC Written and Oral Communication***HUMANITIES AND THE ARTS** (6 credits)

See DDC approved list in Degree Works or

[HTTPS://APP.SMARTSHEET.COM/B/PUBLISH?EQBCT=DAFF687F800B4FE89910A9CEA66B1627](https://app.smartsheet.com/b/publish?EQBCT=DAFF687F800B4FE89910A9CEA66B1627)**SOCIAL AND BEH. ANALYSIS** (9 credits)ECON 201 or ECON 202 (3 cr) is **REQUIRED**  
*If not taken in fulfillment of DDC Soc. and Beh. Analysis*Other (6 credits) must be chosen from DDC  
approved list in Degree Works or[HTTPS://APP.SMARTSHEET.COM/B/PUBLISH?EQBCT=DAFF687F800B4FE89910A9CEA66B1627](https://app.smartsheet.com/b/publish?EQBCT=DAFF687F800B4FE89910A9CEA66B1627)**INTERSECTIONS** (6 credits)ENGR 400 (3 cr) is **REQUIRED** of majorIMSE 421 (3) is **REQUIRED** of major*Both fulfill major requirement and Intersections***ADDITIONAL COURSE** (3 credits)

An additional (3 credit) course is required in one of the areas above, or in IMSE Electives, to reach 143 credits, the minimum required of a Dual ISE/MFGE degree.

**Important DDC Notes:**

- DDC requirements apply to Freshmen admitted fall 2015 and later, and to Transfers admitted fall 2017 and later.
- Many DDC courses fulfill multiple categories. However, a single DDC course may be used for a **maximum of three** DDC categories
- ISE/MFGE students **MUST** graduate with a minimum **143 credits**

**BASIC PREP Requirements 50****INTRO to ENGINEERING**

ENGR 100 (2)

**ENGINEERING GRAPHICS**

ENGR 126 (2)

**MATHEMATICS** (16)*(Fulfills DDC Quant. Thinking)*MATH 115 (4) *Calculus I*MATH 116 (4) *Calculus II*MATH 205 (3) *Calculus III*MATH 216 (3) *Diff Equations*MATH 217 (2) *Matrix Algebra***CHEMISTRY I and II** (8)

CHEM 134 or 144 (4)

CHEM 136 or 146 (4) OR BIOL 140 (4)

**PHYSICS I and II** (8)*(Fulfills DDC Natural Sciences)*

PHYS 150 (4)

PHYS 151 (4)

**ENGIN BASIC COURSES** (14)IMSE 255 (3) *C Programming*ENGR 250 (3) *Engr Materials**Either* ME 260 (4) *Design Stress Analy**or* ME 265 (4) *Applied Mechanics*ECE 305 (4) *Intro to Electrical Engr***PROFESSIONAL Requirements 69****ISE/MFGE CORE – (25)**IMSE 317 (3) *Engr Probab/Statistics*IMSE 382 (4) *Manufact Processes I*IMSE 421 (3) *Engr Econ & Decision*IMSE 4425 (4) *Human Factors/Ergono*IMSE 4675 (4) *Six Sigma & Statistical Process Improvement*IMSE 4795 (4) *Production, Inventory Control, Lean Manufact*ENGR 400 (3) *Applied Bus Techniques for Engr/CIS**(ENGR 400 fulfills 3 cr. of DDC**Intersections and Critical/Creative Thinking)***ISE Required – (12)**IMSE 3005 (4) *Operations Research*IMSE 4585 (4) *Simulation in Syst Design*IMSE 4745 (4) *Facilities Design***MFGE Required – (12)**ME 230 (4) *Thermodynamics*IMSE 4825 (4) *Industrial Controls OR*ME 442 (4) *Control Systems Analysis*IMSE 4835 (4) *CAD Process Design***MFGE Pros Elective –one course from**IMSE 4815 (4) *Manufact Processes II*IMSE 488 (3) *Metal Forming Processes*ME 484 (3) *Mfg Poly Comp Materials*ENGR 350 (4) *Nanoscience and Nanotech***CAPSTONE – (4)**IMSE 4951 (2) *Design Project I*IMSE 4952 (2) *Design Project II**(Senior Design Courses fulfill DDC Upper-Level Writing and Capstone Experience)***ELECTIVES** (12-13)IMSE Dept approval is needed to select Focus Area courses. ME, ECE, CIS, and other IMSE courses may also be used as Focus Area electives, with prior approval.IMSE 351 (3) *Data Structures/Algorithm Analysis*IMSE 381 (4) *Industrial Robots*IMSE 453 (4) *Data Communications and Distributed Processes*IMSE 456 (4) *Database Systems*IMSE 4545 (4) *Info Systems Design*IMSE 486 (3) *Design for Mfg/Assembly*

ACC 298 ACC 299 OB 354

OB 401 OB 402 LE 452

ENT 400 HRM 405 MKT 352

ENGR 399 (1) Prof. Prac. Exp. Engr CIS

**Professional requirements must be at least 69 credit hours.****\*\* Beware NO-CREDIT courses. \*\***

NO-CREDIT listed at end of CECS Handbook:

<https://umich.app.box.com/s/6a5c4j9hwlcnpzy7o2xjmvltumvoj>