_____ **B.S.E.** in **INDUSTRIAL & SYSTEMS ENGINEERING** (128 credits) Date _____

ID _____ 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

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

INTERSECTIONS (6 credits)
ENGR 400 (3 cr) is REQUIRED of major

IMSE 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 128 credits, the minimum required of an ISE 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 students MUST graduate with a minimum **128 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
CHEM 144 (4)
CHEMISTRY II or BIOLOGY
CHEM 146 (4) *or* BIO 103 (4)
PHYSICS I and II
(Fulfills DDC Natural Sciences)
PHYS 150 (4)
PHYS 151 (4)
BASIC ENGINEERING (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*

See separate curriculum sheet for information on the optional concurrent BSE degree in Industrial and Manufacturing Engineering. The concurrent degree requires additional 15-16 credits.

PROFESSIONAL Requirements 54

ISE CORE – 12 Courses (41 credits)
IMSE 3005 (4) *Operations Research*
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 4745 (4) *Facilities Design*
IMSE 4585 (4) *Simulation in Syst Design*
IMSE 4675 (4) *Six Sigma & Statistical Process Improvement*
IMSE 4795 (4) *Production, Inventory Control, Lean Manufactr*
ENGR 400 (3) *Applied Bus Techniques for Engr/CIS*
(ENGR 400 fulfills 3 cr. of DDC Intersections and Critical/Creative Thinking)
IMSE 4951 (2) *Design Project I*
IMSE 4952 (2) *Design Project II*
(***Senior Design Courses fulfill DDC Upper-Level Writing and Capstone Experience)***

FOCUS AREA Electives (10-12 credits)
Focus Area Electives and Free Electives must total at least 13 credits.
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 4815 (4) *Manufacturing Proc II*
IMSE 4825 (4) *Industrial Controls*
IMSE 4835 (4) *CAD Process Design and Manufacturing*
IMSE 486 (3) *Design for Mfge/Assembly*
ACC 298 ACC 299 OB 354
OB 401 OB 402 LE 452
ENT 400 HRM 405 MKT 352

FREE ELECTIVES (1-3 credits) **

Focus Area Electives and Free Electives must total at least 13 credits.

** **Beware NO-CREDIT courses**. **
NO-CREDIT listed at end of CECS Handbook:

https://umich.app.box.com/s/6a5c4j9hwlctnppzy7o2xjmvlrtumvoj

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