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Curriculum Sheet for Catalog Year **FALL 2009****CECS DISTRIBUTION Requirements 24****ENGLISH COMPOSITION**

Composition Placement Exam required, and
Take both COMP 105 (3) & COMP 270 (3)

HUMANITIES AREA (See Notes * & **)

Two courses, 100- to 400-level, 6 credits, from

AFRICAN/AFRICAN-AM (AAAS)

239, 275, 333, 385, 389, 469, 470

ART HISTORY (ARTH)

COMMUNICATIONS (COMM)

COMPARATIVE LITERATURE (COML)

ENGLISH (ENGL)

JOURNALISM & SCREEN STUDIES (JASS)

FOREIGN LANGUAGE

MUSIC HISTORY (MHIS)

PHILOSOPHY (PHIL)

SCIENCE/TECH STUDIES (STS)

300, 307, 312, 360, 403, 410, 485, 488

WOMEN/GEN STUDIES (WGST)

303, 385, 386, 387, 416, 425, 445, 487

BEHAVIORAL/SOCIAL SCIENCES (* & **)

Two courses, 100- to 400-level, 6 credits, from

AFRICAN/AFRICAN-AM (AAAS)

106, 275, 316, 320, 322, 325, 345,

349, 368, 369, 371, 386, 387, 403, 404

ANTHROPOLOGY (ANTH)

ECONOMICS (ECON)

ECON 201, 202, ECON 300-level only

GEOGRAPHY (GEOG)

GEOG 201, 205, GEOG 300-level only

HISTORY (HIST)

POLITICAL SCIENCE (POL)

PSYCHOLOGY (PSYC)

SCIENCE/TECH STUDIES (STS)

300, 305, 308, 309, 321, 325, 340,

345, 349, 365, 374, 383, 385, 386,

409, 421, 430, 441, 442, 464

SOCIOLOGY (SOC)

WOMEN/GEN STUDIES (WGST)

303, 325, 326, 338, 362, 370,

405, 406, 407, 420, 446, 455, 3955

ECONOMICS (3 credits)

ECON 201 or ECON 202 (*Macro or Micro*)

*** SEQUENCE W/ UPPER-LEVEL COURSE:**

Two of the courses above, in Humanities Area
OR the Behavioral/Social Sciences Area,
OR ECON must be **in the same discipline**
AND at least one of them **300- or 400-level**.

ADDITIONAL COURSE (3 credits) **

One course, 100 to 400 level, from above

OR one IMSE 300/400-level course

NOTE: AAAS, STS, and WGST disciplines have different courses in the Humanities Area and the Behavioral/Social Sciences Area.

BASIC PREP Requirements 50**INTRO to ENGINEERING**

ENGR 100 (2)

ENGINEERING GRAPHICS

ENGR 126 (2)

MATHEMATICS (16)

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

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*

DUAL DEGREES OPTION**Dual ISE / MFGE requirements:**

ISE majors who also want a concurrent (dual) degree in MFGE, must take 15-16 credits beyond the 128 of the ISE degree, as follows:

The following 16 credits in MFGE:

ME 230 (4) *Thermodynamics*

IMSE 4815 (4) *Mfge Processes II*

IMSE 4825 (4) *Controls, Instr, Metrol*

IMSE 4835 (4) *CAD Process Design*

If some of the courses above were already taken for the ISE degree, take one or more courses from the list below to equal at least 15 credits beyond the 128 needed for the ISE degree.

IMSE 381 (3) *Industrial Robots*

IMSE 4745 (4) *Facilities Planning*

IMSE 486 (3) *Dsg for Manufacture*

IMSE 488 (3) *Sheet Metal Forming*

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 4545 (4) *Info Systems 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

IMSE 4951 (2) *Design Project I*

IMSE 4952 (2) *Design Project II*

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 (3) *Industrial Robots*

IMSE 453 (4) *Data Communications and Distributed Processes*

IMSE 456 (4) *Database Systems*

IMSE 4745 (4) *Facilities Design*

IMSE 4815 (4) *Manufacturing Proc II*

IMSE 4825 (4) *Controls, Instrumentation and Metrology*

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.

**** Avoid NO-CREDIT courses.**

NO-CREDIT courses posted by 2000 EC and listed at end of CECS Handbook:

www.engin.umd.umich.edu/SRA/pdf/Student_Handbook.pdf <link>

NO-CREDIT courses DON'T count towards the degree. NO-CREDIT courses include ARTH 105, ECON 305, POL 300, PSYC 381, SOC 383, and many others. **Check the list!** [11/11]