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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-AMERICAN (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-AMERICAN (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)

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 for Humanities Area and Behavioral or Social Sciences Area.

BASIC PREP Requirements 54**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 and II (8)

CHEM 144 (4)

CHEM 146 (4)

PHYSICS I and II (8)

PHYS 150 (4)

PHYS 151 (4)

BASIC ENGINEERING (18)

IMSE 255 (3) *"C" Programming*

ENGR 250 (3) *Engr Materials*

ME 230 (4) *Thermodynamics*

Either ME 260 (4) *Design Stress Analy*

or ME 265 (4) *Applied Mechanics*

ECE 305 (4) *Intro to Electrical Engr*

PROFESSIONAL Requirements 50**MFGE CORE – 13 Courses** (45)

IMSE 3005 (4) *Operations Research*

IMSE 317 (3) *Engr Probability/Stats*

IMSE 382 (4) *Manufact Processes I*

IMSE 421 (3) *Engr Econ & Decision*

IMSE 4425 (4) *Human Factors/ Ergon*

IMSE 4675 (4) *Six Sigma & Statistical*

Methods for Process Improvement

IMSE 4795 (4) *Production/ Inventory*

Control & Lean Manufacturing

IMSE 4815 (4) *Manufact Processes II*

IMSE 4825 (4) *Controls, Instrumentation*

and Metrology

IMSE 4835 (4) *Computer-Aided Process*

Design & Manufacturing

ENGR 400 (3) *Applied Bus Techniques*

for Engr/CIS

IMSE 4951 (2) *Design Project I*

IMSE 4952 (2) *Design Project II*

TECHNICAL ELECTIVE (3-4)

Technical and General Electives

must total at least 5 credits.

One course (3-4 credits) from:

IMSE 351 (3) *Data Structures*

IMSE 381 (3) *Industrial Robots*

IMSE 4545 (4) *Info System Design*

IMSE 4585 (4) *Simulation in*

Systems Design

IMSE 4745 (4) *Facilities Design*

IMSE 486 (3) or ME 460 (3)

Design for Manufacturing

IMSE 488 (3) *Metal Forming Processes*

ME 484 (3) *Manufacturing Processes*

for Polymers and Coatings

GENERAL ELECTIVES (1-2 credits) **

Technical and General Electives

must total at least 5 credits.

OPTIONAL DUAL DEGREE**Dual Degrees in MFGE and in ISE****Requirements:**

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

A) The following 8 credits in ISE:

IMSE 4545 (4) *Info Systems Design*

IMSE 4585 (4) *Simulation in Systems Dsg*

B) 2 elective courses (7-8 credits) from:

IMSE 351 (3) *Data Structures*

IMSE 381 (3) *Industrial Robots*

IMSE 4745 (4) *Facilities Planning*

IMSE 486 (3) *Dsg for Manufacturing*

IMSE 488 (3) *Sheet Metal Forming*

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

NO-CREDIT courses posted by 2000

EC and listed in CECS Handbook:

[www.engin.umd.umich.edu/SRA/pdf/](http://www.engin.umd.umich.edu/SRA/pdf/Student_Handbook.pdf)

[Student_Handbook.pdf](http://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!** [12/11]