INDUSTRIAL ENGINEERING
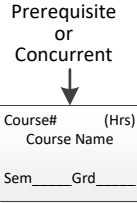
Student:_____ SID#:_____

☐ AI _____ ☐ GP _____ ☐ HP _____

Date of first entry:_____ Expected Graduation:_____ Advisor:_____

Legend:
- Offered Fall Semester Only (orange)
- Offered Spring Semester Only (green)
- Prerequisite →
- Prerequisite or Concurrent
- Course# (Hrs) / Course Name / Sem____ Grd____

FRESHMAN

- MATH 220 (4) A.G. & Calc I — Sem____ Grd____
- IMSE 201 (3) Intro. to IE — Sem____ Grd____
- CHM 210 (4) Chem. I — Sem____ Grd____
- COMM 105 (2) Public Speaking. IA — Sem____ Grd____
- ENGL 100* (3) Expos. Writ. I — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(16)

SOPHOMORE

- MATH 221 (4) A.G. & Calc II — Sem____ Grd____
- IMSE 250 (2) Intro. Mfg. Proc. — Sem____ Grd____
- IMSE 251 (1) Mfg. Proc. (Lab) — Sem____ Grd____
- ME 212 (2) Engg. Graphics — Sem____ Grd____
- ECON 110 (3) or ECON 120 — Sem____ Grd____
- Hum or Soc Sc (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(15)

- MATH 222 (4) A.G. & Calc III — Sem____ Grd____
- STAT 510 (3) Prob & Stat I — Sem____ Grd____
- PHYS 213 (5) Engg. Phys. I — Sem____ Grd____
- Computer Programming Elective (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(15)

- MATH 551 (3) Matrix Theory — Sem____ Grd____
- Data Analytics Elective (3) — Sem____ Grd____
- PHYS 214 (5) Engg. Phys. II — Sem____ Grd____
- ACCTG 231 (3) Acctg 4 Bus Opn. — Sem____ Grd____
- Hum or Soc Sc (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(17)

JUNIOR

- IMSE 560 (3) Intro. to OR I — Sem____ Grd____
- IMSE 541 (3) Stat Quality Ctrl — Sem____ Grd____
- IMSE 623 (3) Ind. Ergonomics — Sem____ Grd____
- IMSE 530 (2) Engg. Econ. Anal. — Sem____ Grd____
- IMSE 532 (1) Ind. Proj. Eval. — Sem____ Grd____
- Engineering Elective (3) — Sem____ Grd____
- ENGL 415[1] (3) Writ Comm. 4 Engrs — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(15)

- IMSE 660 (3) Intro. To OR II — Sem____ Grd____
- IMSE 050 (0) Ind. Plant Studies — Sem____ Grd____
- IMSE 555 (3) Ind. Fac. L & D — Sem____ Grd____
- MANGT 420 (3) or LEAD 350 — Sem____ Grd____
- Engineering Elective (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(15)

SENIOR

- IMSE 633 (3) Prod Pln Inv Ctrl — Sem____ Grd____
- IMSE 685 (3) Mfg. Info. Systems — Sem____ Grd____
- IMSE 643 (3) Ind. Simulation — Sem____ Grd____
- IMSE 580 (4) Mfg. Systems Design and Analysis — Sem____ Grd____
- Professional Elective (3) — Sem____ Grd____
- Engineering Elective (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(16)

- IMSE (3) Elective — Sem____ Grd____
- IMSE (3) Elective — Sem____ Grd____
- Professional Elective (3) — Sem____ Grd____
- Professional Elective (3) — Sem____ Grd____
- IMSE 015 (0) Engg. Assembly — Credit (Y/N)____

(15)

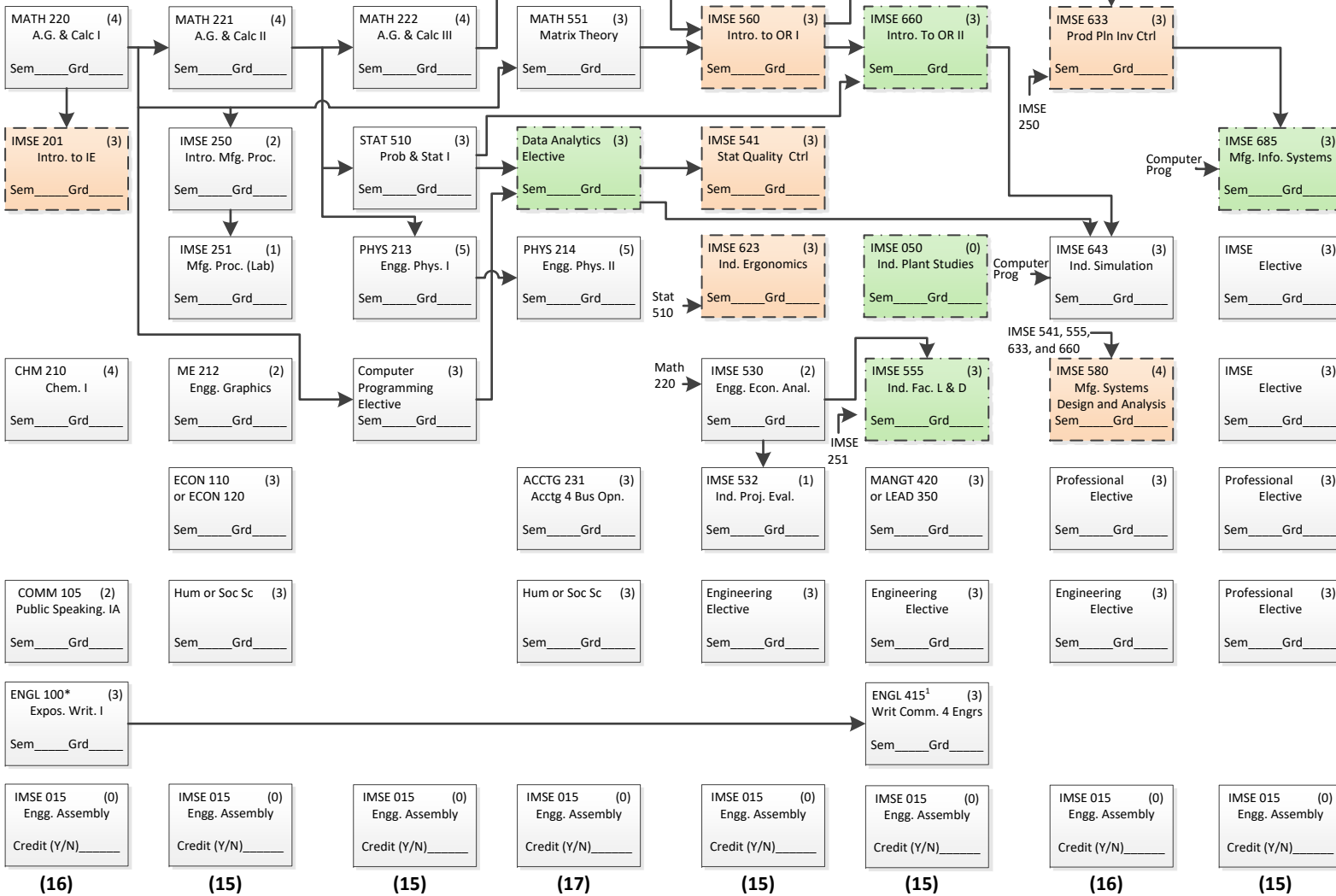**IMSE Electives:** The IMSE electives must be selected from the IMSE department. Each class must also be at least 3 credit hours.

Substitutions: Econ 120 can substitute for Econ 110. IMSE 501 or LEAD 350 can substitute for MANGT 420; IMSE 591 and IMSE 592 can substitute for IMSE 580. Conc. or prereq. requirement for IMSE 591 or 580 is IMSE 541, 555, 633, and 660.

K-State 8: The courses required for a BSIE degree satisfy five of the K-State 8 areas. The student must fulfill the aesthetic interpretation (AI), global issues and perspectives (GP), and historical perspective (HP) tags. Most students will fill these tags with their humanities, social science or professional electives. Students who complete ECON 110 will complete the GP tag as well.

IMSE Assembly Requirement: Each semester a student must enroll in IMSE 015 unless he/she is a concurrent B.S./M.S.I.E. student, in which case he/she must enroll in either IMSE 015 or IMSE 892.

IMSE Graduation Criterion: At most 6 credit hours of IMSE 500+ courses that earned a D may be applied to a student's B.S.I.E graduation requirements.

IMSE Course Retake Criterion: Any IMSE course being taken for the third time in any five-year period may not be used to fulfill a student's B.S.I.E. graduation requirements.

[1]Prerequisite for ENGL 415 is a "B" or better in ENGL 100. ENGL 200 must be taken if ENGL 100's grade ≤ "C".

Total hours required for graduation: 124

Data Analytics Elective: IMSE 441, STAT 511 or STAT 705

Computer Programming Elective: CIS 200, CIS 209, ME 400 or CC 210

Engineering Electives: The 9 hours of basic engineering credit may not include more than 6 hours from a single department and the 9 hours must be selected from the following courses. Note, a student planning to take the FE exam is advised to take their 9 hours from classes with an *.
BAE 345, BAE 346, CE 333, 530* (at most one of 333 and 530) and 533; CHE 354*, 355*, 356*, 520 and 521; ECE 410, 511, 519* and 571; ME 512*, 513, 571; IMSE 562.

Professional Electives: The 9 credit hours of professional electives are designed so that the student may specialize in an area of interest. Any of the following classes may count toward the professional elective requirement. Any IMSE class; DEN 160 and DEN 161; any introduction course in the other COE programs; any engineering class ≥ 300 level; any AG ECON class ≥ 500 level; any BUSINESS class ≥ 400 level; any CIS class ≥ 200 level; any ECON class ≥ 300 level; any LEAD class ≥ 300 level; MATH 240 and any Mathematics class ≥ 500 level except MATH 570 and 591; any Statistics class ≥ 500 level except STAT 702, 703, 706 and 710; ACCTG 241, 331, and 342; BIOL 198; BIOL 201; and CHEM 230.

INDUSTRIAL ENGINEERING PROGRAM | Baccalaureate Curriculum Guide

First Semester Courses	Hrs	Gr	Second Semester Courses	Hrs	Gr
FRESHMAN					
MATH 220 Anal. Geom. & Calc I	4		MATH 221 Anal. Geom. & Calc. II	4	
IMSE 201 Introduction to Industrial Engineering	3		IMSE 250 Intro. to Manufacturing Processes	2	
CHM 210 Chemistry I	4		IMSE 251 Intro. to Manufacturing Processes Lab	1	
COMM 105 Public Speaking IA	2		ME 212 Engineering Graphics	2	
ENGL 100 Expository Writing I [1]	3		ECON 110 Principles of Macroeconomics	3	
IMSE 015 Engineering Assembly	0		Humanities or Social Science elective	3	
			IMSE 015 Engineering Assembly	0	
Total	16		Total	15	
SOPHOMORE					
MATH 222 Anal. Geom. & Calc. III	4		MATH 551 Applied Matrix Theory	3	
STAT 510 Introduction to Probability & Statistics I	3		Data Analytics Elective	3	
PHYS 213 Engineering Physics I	5		PHYS 214 Engineering Physics II	5	
Computer Programming Elective	3		ACCTG 231 Accounting for Business Operations	3	
IMSE 015 Engineering Assembly	0		Humanities or Social Science elective	3	
			IMSE 015 Engineering Assembly	0	
Total	15		Total	17	
JUNIOR					
IMSE 560 Operations Research I	3		IMSE 660 Operations Research II	3	
IMSE 541 Statistical Quality Control	3		IMSE 050 Industrial Plant Studies	0	
IMSE 623 Industrial Ergonomics	3		IMSE 555 Industrial Facility Layout and Design	3	
IMSE 530 Engineering Economic Analysis	2		MANGT 420 Management Concepts	3	
IMSE 532 Industrial Project Evaluation	1		Engineering Elective	3	
Engineering Elective	3		ENGL 415 Written Communication for Engineers	3	
IMSE 015 Engineering Assembly	0		IMSE 015 Engineering Assembly	0	
Total	15		Total	15	
SENIOR					
IMSE 633 Production Planning & Inventory Control	3		IMSE 685 Manufacturing Information Systems	3	
IMSE 643 Industrial Simulation	3		IMSE Elective	3	
IMSE 580 Manufacturing System Design &Analysis	4		IMSE Elective	3	
Professional Elective	3		Professional Elective	3	
Engineering Elective	3		Professional Elective	3	
IMSE 015 Engineering Assembly	0		IMSE 015 Engineering Assembly	0	
Total	16		Total	15	

Number of Hours Required for Graduation is 124

IMSE CURRICULUM NOTES:

Data Analytics Elective: IMSE 441, STAT 511 or STAT 705

Computer Programming Elective: CIS 200, CIS 209, ME 400, or CC 210

Engineering Electives: The 9 hours of basic engineering credit may not include more than 6 hours from a single department and the 9 hours must be selected from the following courses. Note, a student planning to take the FE exam is advised to take their 9 hours from classes with an *.
BAE 345, 346; CE 333, 530* (at most one of 333 and 530) and 533; CHE 354*, 355*, 356*, 520 and 521; ECE 410, 511, 519* and 571; ME 512*, 513, 571; IMSE 562.

Professional Electives: The 9 credit hours of professional electives are designed so that the student may specialize in an area of interest. Any of the following classes may count toward the professional elective requirement.
Any IMSE class; DEN 160 and DEN 161; any engineering class ≥ 300 level; any AG ECON class ≥ 500 level; any BUSINESS class ≥ 400 level; any CIS class ≥ 200 level; any ECON class ≥ 300 level; any LEAD class ≥ 300 level; MATH 240 and any Mathematics class ≥ 500 level except MATH 570 and 591; any Statistics class ≥ 500 level except STAT 702, 703, 706 and 710; ACCTG 241, 331, and 342; BIOL 198; BIOL 201; and CHEM 230, and any introduction course in the other COE programs.

IMSE Electives: The IMSE electives must be selected from the IMSE department. Each class must also be at least 3 credit hours.

Substitutions: ECON 120 can substitute for ECON 110. LEAD 350 can substitute for MANGT 420; IMSE 591 and IMSE 592 can substitute for IMSE 580. Concurrent or prerequisite requirement for IMSE 591 or 580 is 24 credit hours of IMSE courses of 500 level or above.

K-State 8: Required courses for a BSIE degree satisfy five of the K-State 8 areas. The student must fulfill the aesthetic interpretation **(AI)**, global issues and perspectives **(GP)**, and historical perspective **(HP)** tags. Most students will fill these tags with their humanities, social science or professional electives. Students who complete ECON 110 will complete the GP tag as well.

IMSE Assembly Requirement: Each semester a student must enroll in IMSE 015 unless he/she is a concurrent B.S./M.S.I.E. student in which case he/she must enroll in either IMSE 015 or IMSE 892.

IMSE Graduation Criterion: At most 6 credit hours of IMSE 500+ courses that earned a D may be applied to a student's B.S.I.E. graduation requirements.

IMSE Course Retake Criterion: Any IMSE course being taken for the third time in any five-year period may not be used to fulfill a student's B.S.I.E. graduation requirements.

[1] Prerequisite for ENGL 415 is a "B" or better in ENGL 100. ENGL 200 must be taken if ENGL 100's grade ≤ "C".