



Leading. Learning. Building a Legacy. Manufacturing Upwards

Industrial Engineering Undergraduate Program Advising Manual

**Department of Industrial and Manufacturing Engineering
Florida A&M University (FAMU) – Florida State University (FSU)
College of Engineering**

February 18, 2018

1. Introduction

This document guides students through the curriculum for the Bachelor's of Science in Industrial Engineering (BSIE) degree. It discusses the entire curriculum and presents departmental advising procedures and related forms. This document is intended to provide students with an understanding of the requirements and courses related to the BSIE degree and to help ensure the accuracy and efficiency of advising. There are subtle differences between the FAMU and FSU curriculum requirements. The primary difference between this advisement manual and the previous versions is that this manual details the graduation requirements of both universities. For that reason, students are advised to carefully review the contents of this manual.

2. Mission Statement

The mission of the Department of Industrial and Manufacturing Engineering is to provide for students a solid industrial engineering curriculum coupled with a strong research program driven by the economic and technologic development needs of society.

3. Program Educational Objectives

Consistent with the Departmental mission, the curriculum for the baccalaureate degree program in industrial engineering is especially designed for the attainment of the following educational objectives. Within the first few years following graduation, our graduates are expected to have:

- Been employed in industrial, service, or governmental organizations applying the industrial engineering skills in developing, designing, analyzing, implementing, or improving integrated systems that include people, materials, information, equipment, and energy
- Completed or enrolled in a graduate program
- Participated in a multicultural and diverse workplace
- Utilized teamwork, communication and engineering management skills.

4. The Curriculum

Each student earns the BSIE degree by meeting all Florida A&M University (FAMU) / Florida State University (FSU) general university requirements, all College of Engineering requirements, and all Industrial and Manufacturing Engineering Departmental requirements. These requirements reflect the engineering accreditation standards of ABET, the accreditation body for engineering programs. A student may earn the BSIE degree in four academic years and one summer of study if the pre-requisites for Calculus I and General Chemistry have been met prior to the freshman year.

The curriculum may be divided into categories as shown in Table 1. Each category will be discussed in turn.

Table 1. Distribution of BSIE Program Credit Hours.

Type of Course	Credit Hour Requirements
Liberal Studies (Humanities, Social Sciences and English)	24
Basic Science & Mathematics	33
Core and General Engineering	18
Department Requirements	53
Total	128

4.1 Oral Competency (FSU)

FSU's Oral Competency requirement is satisfied through the successful completion of EIN 3010: Industrial and Manufacturing Engineering Tools. This is a mandatory course for both FAMU and FSU Industrial Engineering students. Students who have previously completed a public speaking course **and** a cost accounting course may petition the department for a waiver from this requirement.

4.2 Basic Science and Mathematics

Students must complete the required number of credit hours of basic science, including a two-semester sequence in Physics and Mathematics. This requirement meets the minimum ABET standard. The courses shown in Table 2 are required.

Table 2. Required Basic Science and Mathematics Courses

Area	Course Number	Course Name	Credit Hours
Basic Science	CHM 1045	General Chemistry I	3
	CHM 1045L	General Chemistry I Lab	1
	PHY 2048C	General Physics I w/ Lab	5
	PHY 2049C	General Physics II w/ Lab	5
Mathematics	MAC 2311	Calculus I	4
	MAC 2312	Calculus II	4
	MAC 2313	Calculus III	5
	MAS 3105	Linear Algebra	3
	MAP 2302	Differential Equations	3
Total			33

4.3 Core and General Engineering Requirements

Core and general engineering requirements provide the student with a broad knowledge of basic engineering concepts and problem solving approaches. Moreover, core and general engineering requirements prepare students to effectively participate on project teams with engineers from other disciplines. The core and general engineering requirements are listed in Table 3 below.

Table 3. Core and General Engineering Requirements.

Course Number	Course Name	Credit Hours
EGN 1004L	First Year Engineering Lab	1
EGN 2123	Graphics for Engineers	2
EGN 3613	Principles of Engineering Economy	2
EML 3100	Thermodynamics	2
EGM 3512	Engineering Mechanics	4
EEL 3003	Introduction to Electrical Engineering	3
EEL 3003L	Introduction to Electrical Engineering Lab	1
CGS 3014 / COP 2221	Intro. To Programming	3
Total		18

4.4 Department Requirements

The Industrial and Manufacturing Engineering (IME) Department requires the completion of courses in two principal areas: manufacturing and industrial systems. In the Fall Semester of the junior year, students are required to complete introductory IME courses, as well as begin a three-semester sequence in manufacturing. A capstone senior design project, two advanced industrial engineering department electives and an industrial systems engineering course are taken in the Spring Semester of the senior year. Department requirements are presented in Table 4.

Table 4. Department Requirements.

Area	FAMU Course Number	FSU Course Number	Course Name	Credit Hours
Introductory Courses	EGN 3443	EGN 3443	Statistical Topics in IE	3
	EIN 3104	EIN 3104	Introduction to Engineering Management	3
	EIN 3010	EIN 3010	Industrial and Manufacturing Engineering Tools	3
Manufacturing	EIN 3390C	EIN 3390C	Manufacturing Processes and Materials Engineering I	3
	EIN 4394C	EIN 4394C	Manufacturing Processes and Materials Engineering II	3
	EIN 4621	EIN 4621	Manufacturing Systems Engineering	3
	ESI 4234	ESI 4234	Quality Control and Reliability Engineering	3
	EIN 4333	EIN 4333	Design of Integrated Production Systems and Facilities Layout	3
	EIN 4940	EIN 4940	Industrial and Manufacturing Engineering Practicum	2
Industrial Systems	ESI 3628	ESI 3628	Computing Topics in IE	3
	ESI 3312	ESI 3312	Operations Research I: Deterministic	3
	ESI 4313	ESI 4313	Operations Research II: Non-deterministic	3
	ESI 4523	ESI 4523	Simulation of IE Systems	3
	EIN 4243	EIN 4243	Human Factors, Work Measurements, and Methods Engineering	3
Design Projects	EIN 4890	EIN 4890	IE Senior Design Project I Fall	3
	EIN 4892	EIN 4892	IE Senior Design Project II Spring	3
Industrial Engineering Electives	1 course	1 course	EIN 4611C Industrial Automation and Robotics	3
			EIN 4214 Occupational Safety and Hazard Control	3
			EIN 4936 Selected Topics in IE	3
			EIN 3905 Directed Independent Study	3
Technical Elective	**	**		3
Total				53

** An approved course from another engineering discipline, business, computer science or mathematics. The IME Department's Undergraduate Advisor must approve the selected technical elective.

4.5 Prerequisites and Course Offerings

It is the policy of the IME Department that a student must receive passing grades in *all* prerequisite courses prior to enrolling in an IME course. Concurrent registration in a course and its prerequisite is *not* allowed. Further, all prerequisites to prerequisites must be completed. Failure to abide in this policy can result in the cancellation of your enrollment in the course at any time during the semester and with no refund of fees. Co-requisite courses may be taken concurrently or prior to enrolling in the course. During the first week of classes, the instructor will notify students of the prerequisites and co-requisites of the course. IME course offerings and their prerequisites are presented in Table 5.

Table 5. IE Course Offerings and Prerequisites.

FAMU COURSE NUMBER	FSU COURSE NUMBER	COURSE NAME	CREDIT HOURS	PREREQUISITES / CO-REQUISITES
EGN 3613	EGN 3613	Principles of Engineering Economy	2	MAC 2313: Calculus III
EGN 2123	EGN 2123	Computer Graphics for Engineers	2	Co-requisite: MAC 2311: Calculus I
EGN 3443	EGN 3443	Statistical Topics in IE	3	MAC 2312: Calculus II
EIN 3010	EIN 3010	Industrial and Manufacturing Engineering Tools	3	Major only
ESI 3628	ESI 3628	Computing Topics in IE	3	CGS 3406/COP 3014: Intro. to Prog. (FSU) or COP 2221: Programming in C Language (FAMU)
EIN 3104	EIN 3104	Intro. to Engineering Management	3	EGN 3613: Principles of Engineering Economy; EGN 2123: Computer Graphics for Engineers
EIN 3390C	EIN 3390C	Manufacturing Processes and Materials Engineering I	3	CHM 1045 and 1045L: General Chemistry I with Lab; Co-requisite: EGN 2123: Computer Graphics for Engineers
EIN 4394C	EIN 4394C	Manufacturing Processes and Materials Engineering II	3	EIN 3390C: Manufacturing Processes and Materials Engineering
EIN 4621	EIN 4621	Manufacturing Systems Engineering	3	EIN 4312: Tool and Process Engineering
ESI 4234	ESI 4234	Quality Control and Reliability Engineering	3	EGN 3443: Statistical Topics in IE
EIN 4333	EIN 4333	Design of Integrated Production Systems (IPS) and Facilities Layout	3	EGN 2123: Computer Graphics for Engineers; EGN 3613: Principles of Engineering Economy; ESI 3312: Operations Research I: Deterministic
ESI 3312	ESI 3312	Operations Research I: Deterministic	3	MAP 3305: E-Math I
ESI 4313	ESI 4313	Operations Research II: Non - Deterministic	3	EGN 3443: Statistical Topics in IE; MAP 3305: E-Math I
ESI 4523	ESI 4523	Simulation of IE Systems	3	ESI 4234: Quality Control and Reliability Engineering
EIN 4243	EIN 4243	Human Factors, Work Measurements, and Methods Engineering	3	EGN 3443: Statistical Topics in IE; EGM 3512: Engineering Mechanics; EIN 3390C: Manufacturing Processes and Materials Engineering
EIN 4940	EIN 4940	Industrial and Manufacturing Engineering Practicum	2	EIN 4621: Manufacturing Systems Engineering
EIN 4890	EIN 4890	IME Senior Design Project I	3	Final Year Fall Term
EIN 4892	EIN 4892	IME Senior Design Project II	3	Final Year Spring Term
Advanced Industrial Engineering Electives and Technical Electives				
EIN 4314	EIN 4214	Occupational Safety and Hazard Control	3	EIN 4243: Human Factors, Work Measurements, and Methods Engineering
EIN 4936	EIN 4936	Selected Topics in IE	3	Senior Standing and Consent of the Instructor
EIN 3905	EIN 3905	Directed Independent Study	3	Consent of the Department Chairperson
		Technical Elective	3	An approved course from another engineering discipline, business, computer science or mathematics at the 3000-level or higher. The IME Department's Undergraduate Academic Advisor must approve the selected technical elective.

4.6 *Schedule of classes*

The schedule of classes attached to this document indicates the semester in which each course required for the BSIE degree is generally offered. However, the schedule of classes should always be consulted each semester for specific course offerings.

4.7 *Graduation Checklist*

To ensure that each student graduates on time, the following steps should be taken:

1. Students are encouraged to request a graduation check from the University Registrar's Office no later than the end of the Spring term of the sophomore year. This check will serve as an overview of university requirements needed for graduation.
2. Students should register to take the Fundamentals of Engineering (FE) Examination during the semester in which they intend to graduate. It is required for professional engineering registration. Registration takes place several months before the examination date. Thus, it is the student's responsibility to be aware of registration deadlines and exam administration dates.
3. During each advising session, students should update their graduation checklists and develop a semester-by-semester schedule of all remaining classes needed to satisfy graduation requirements.

5. **Advising Procedures**

Each student must meet with the IME Department's Undergraduate Advisor to guide the student's progress through the BSIE program. The relationship between advisor and student is a crucial factor in ensuring the successful completion of the BSIE program.

5.1 *Initial Advising Session*

A student enters the BSIE program or the pre-BSIE program through either (i) FAMU-FSU College of Engineering Pre-Engineering Program, or (ii) transfer from another engineering program at the FAMU-FSU College of Engineering. Upon admission into the BSIE program, an initial advising session will take place between the **IME Department's Undergraduate Advisor and the student**. The results of the initial advising session will include:

1. A determination of the credits toward the BSIE degree earned through previous coursework.
2. A semester-by-semester schedule of the classes needed to complete the BSIE degree.

The graduation plan form attached to this document will be completed to satisfy items 1 and 2 listed above. The attached curriculum flowchart and checklist in conjunction with the student transcript will aid in this process.

Since the BSIE program is **not a lock-step program**, it is highly likely that an individual student will have a schedule different from the one suggested.

The graduation plan form, the flowchart, and the individual student transcript, are filed in the student's academic file in the IME office. Students should retain copies of each form for future reference and schedule planning. Forms, flowcharts and planned schedule of course offerings are available on the

Industrial and Manufacturing Engineering Advising link on Blackboard. If a student is not able to access the advising link on Blackboard, they should contact their advisor.

5.2 *Semester-by-Semester Advising Session*

Students are encouraged but not required to be individually advised each semester by the IME Undergraduate Advisor as long as they have set forth a graduation plan and are adhering to it. Semester-by-semester advising sessions will produce the following:

1. The graduation plan will be updated with any changes to the plan that have occurred since the last plan was developed. The updated graduation plan form, the flowchart, and the individual student transcript, are filed in the student's academic file in the IME office.
2. Math, technical, and advanced IE elective options will be discussed in more detail as the student nears the time to take them.
3. The advisor will point out any impending dates that are of importance to the student (e.g. apply for graduation) and discuss any career or academic issues that affecting the student.

The suggested schedule/graduation checklist form, the academic advisement form, and the individual student schedule form, if used, are filed in the student's academic file in the IME office. Students should retain copies of each form for future reference and schedule planning.

6. Miscellaneous Policies

1. *Minimum GPA:* In accordance with College of Engineering policy, students must earn a “C” or better in the following courses: EGN 1004L, PHY 2048C, MAC 2311, and MAC 2312 before being admitted into the Industrial Engineering program. No more than one repeat is permitted for these five class attempts.
2. *Course Credit:* Only those basic science, mathematics, core and general engineering, and department courses completed with a grade of C or better will be counted toward satisfying the BSIE degree requirements.

In accordance with College of Engineering policy, a student may request that a course completed with a grade of D+, D, D- be counted toward the BSIE degree. Recommendation by the IME Department’s Undergraduate Advisor and approval by the Department Chairperson and the Associate Dean are required for the course to be counted towards graduation credit.

3. *Substitution of Courses:* Any substitution for a course required by number must be approved by the IME Department’s Academic Advisor or the IME Department Chairperson.

7. Accreditation Requirements

The BSIE degree program is accredited by the ABET, the accreditation body for engineering programs, and Southern Association of Colleges and Schools (SACS). The program also meets the requirements set forth by the state of Florida. These are designated by FAMU as Academic Learning Compacts (ALC) and by FSU as State Mandated Learning Compacts (SMLAC). ABET requires setting program outcomes to measure our students’ performance above and beyond course grades.

To meet these requirements, certain courses require students to complete “artifacts,” which demonstrate that the students meet certain designated program outcomes. Table 6 illustrates the outcomes and the courses associated with those outcomes. Table 7 illustrates the lead courses that collect artifacts to meet these outcomes.

Table 6. IE Courses Relative to Program Outcomes

Courses	1a	1b	2	3	4	5	6	7	8	9	10	11
EGN 2123: Computer Graphics for Engineers	x			x	x						x	
EGN 3443: Statistical Topics in IE	x		x								x	x
EGN 3613: Principles of Engineering Economy	x			x	x		x			x	x	x
EIN 3010: Industrial and Manufacturing Engineering Tools	x		x		x	x	x					
ESI 3628: Computing Topics in IE	x		x				x				x	x
EIN 3390C: Manufacturing Processes and Materials Engineering I		A		x				x	x	x	x	x
EIN 3104: Introduction to Engineering Management				x		A	x	x	x	A		x
EIN 4214: Occupational Safety and Hazard Control		x		x		x				x	x	x
EN 4243: Human Factors, Work Measurement and Methods Engineering			x	x		x	x	A			x	x
EIN 4394C: Manufacturing Processes and Materials Engineering II		x		x				A	x	x	x	x
EIN 4333: Integrated Production Systems and Facilities Layout			x	x							x	x
EIN 4621: Manufacturing Systems Engineering	x	x		x			x				x	x
EIN 4890: Senior Design Project – I	x		x	A	A	x	A	x			A	A
EIN 4892: Senior Design Project – II	x		x	A	A	x	A	x			A	A
EIN 4940: Industrial and Manufacturing Engineering Practicum		x		x							x	x
EIN 4936: Introduction to ISO 9000					x		x					
EIN 4150/EIN 4445: Technology and Entrepreneurship in Engineering					x		x	x				x
ESI 3312: Operations Research I: Deterministic	A			x							x	x
ESI 4234: Quality Control and Reliability Engineering	x		A			x	x		A		x	x
ESI 4313: Operations Research II: Non-Deterministic	x		x	x							x	x
ESI 4523: Simulation of IE Systems	x		x	x		x	x				x	x

Table 7: Lead Courses for Collecting and Assessing Artifacts

Courses (Semesters)	FAMU-FSU IE Program Outcomes	ABET Criteria
Operations Research I (F*)	1a. Ability to apply knowledge of mathematics and computing	3(a)
Manufacturing Processes & Materials Eng. (F)	1b. Ability to apply knowledge of science and engineering	3(a)
Quality Control & Reliability Eng. (F)	2. Ability to design and conduct experiments, as well as to analyze and interpret data	3(b)
Senior Design Projects – I (F) and II (S ⁺)	3. Ability to design integrated systems, components, or processes to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. <i>Note: We define “systems” to include people, materials, information, equipment and energy.</i>	3(c) 9.1
Senior Design Projects – I (F) and II (S)	4. Ability to function effectively on multidisciplinary teams	3(d)
Engineering Management (F)	5. An understanding of professional and ethical responsibility	3(f)
Senior Design Projects – I (F) and II (S)	6. Ability to communicate effectively	3(g)
Human Factors (F); and Manufacturing Processes & Materials Eng (F)	7. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context	3(h)
Quality Control & Reliability Eng. (F)	8. Recognition of the need for, and an ability to engage in lifelong learning	3(i)
Engineering Management (F)	9. Knowledge of contemporary issues	3(j)
Senior Design Projects – I (F) and II (S)	10. Ability to use modern industrial engineering techniques, skills and tools necessary to design, develop, implement, and improve integrated systems that include people, materials, information, equipment and energy	3(k) 9.1
Senior Design Projects – I (F) and II (S)	11. Ability to identify, formulate, and solve engineering problems	3(e)

Fall		Prefix	Number
Y	Course 1		
E	Course 2		
A	Course 3		
R	Course 4		
i	Course 5		
	Course 6		
	Course 7		

Spring		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

Summer		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

Fall		Prefix	Number
Y	Course 1		
E	Course 2		
A	Course 3		
R	Course 4		
j	Course 5		
	Course 6		
	Course 7		

Spring		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

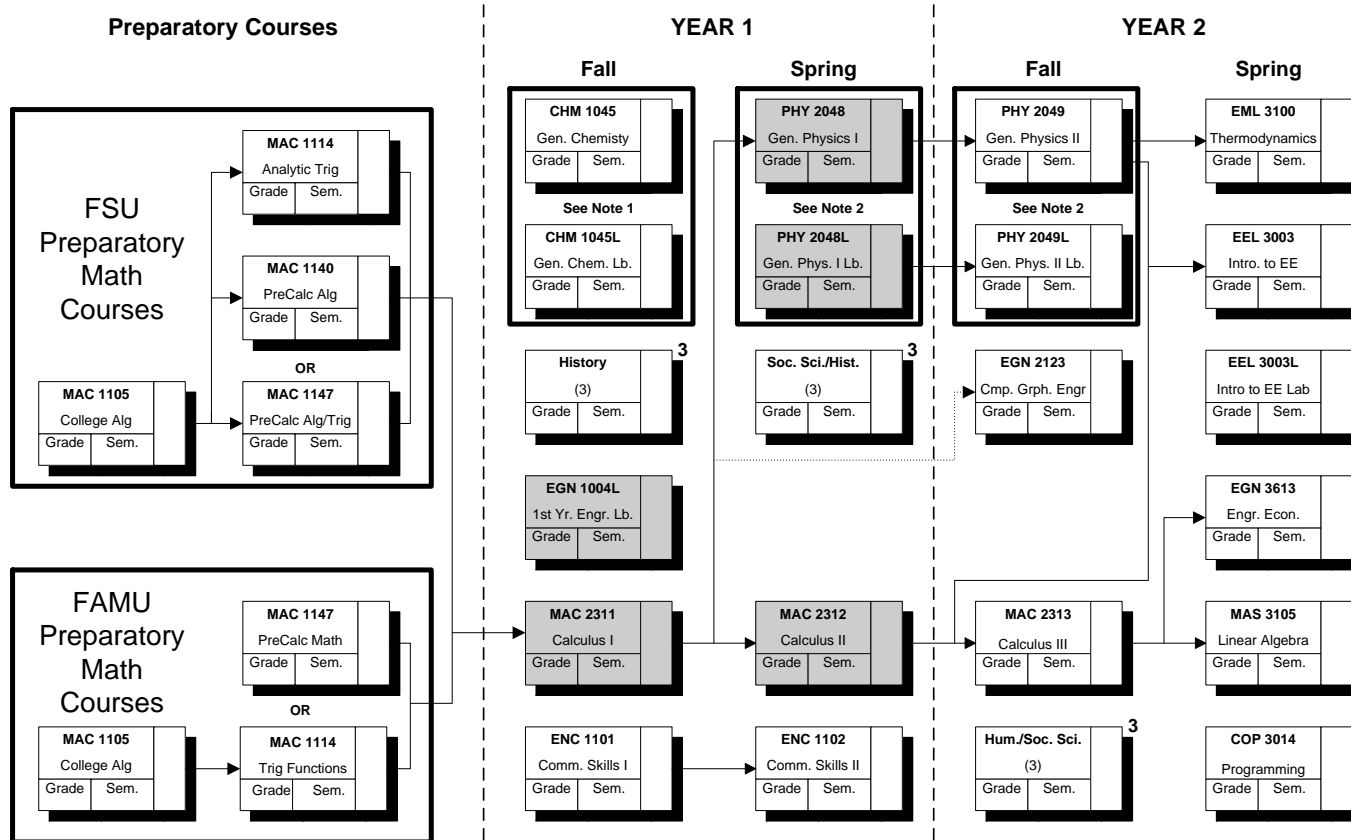
Summer		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

Fall		Prefix	Number
Y	Course 1		
E	Course 2		
A	Course 3		
R	Course 4		
k	Course 5		
	Course 6		
	Course 7		

Spring		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

Summer		Prefix	Number
	Course 1		
	Course 2		
	Course 3		
	Course 4		
	Course 5		
	Course 6		
	Course 7		

Student	
SN	
Revision #	



Admission Requirements for Industrial and Manufacturing Engineering

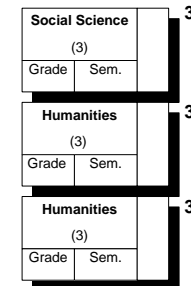
To be admitted into I&ME and to be eligible to take upper level I&ME courses, the student must meet the Pre-Engineering Program requirements.

Students must have an overall GPA of 2.0 or better and achieve a grade of 'C' or better, from any institution attended, in First Year Engineering Laboratory, Calculus I, Calculus II, General Chemistry I and General Physics I (shaded areas on flowchart) to be admitted to an engineering major.

A single repeated attempt in only one of the five (5) courses listed above with no more than one grade of "C-" is allowed.

Summer School Requirement

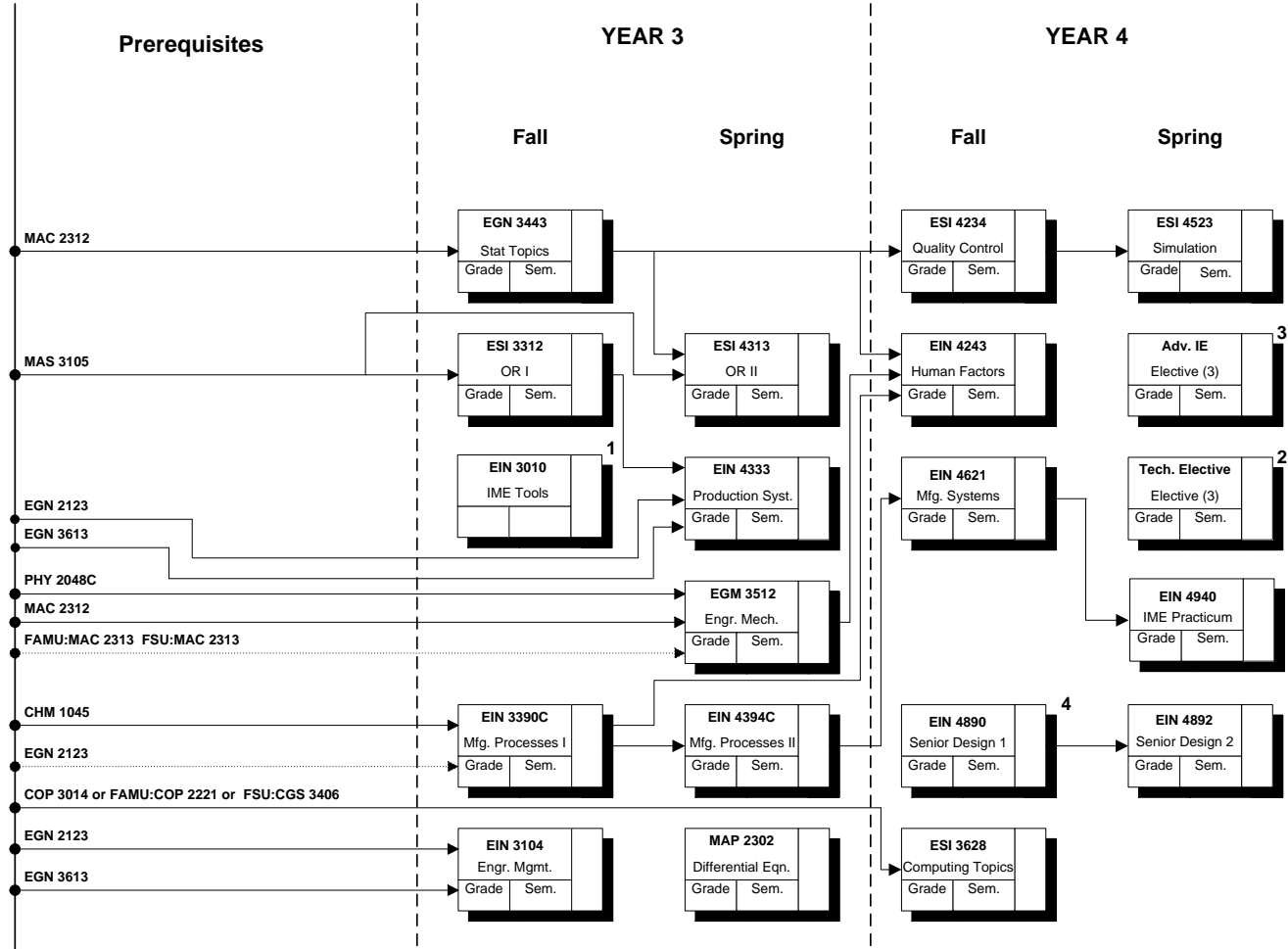
Every Student is required to undertake nine (9) credit hours of summer course work. It is recommended that this be done in the summer following the first two semesters. The courses shown below are required for graduation and are suggested as a possible summer schedule.



1. FSU CHM 1045C contains both a classroom and a laboratory component.
 2. FSU PHYS 2048C, and PHYS 2049C contain both a classroom and a laboratory component.
 3. **FAMU and FSU:** Courses on flowchart are illustrative only. See University-Specific requirements for liberal studies.
FAMU: [http://www.famu.edu/index.cfm?Registrar&GeneralEducationCompetenciesandCoreCourses\(effectivefall2015\)](http://www.famu.edu/index.cfm?Registrar&GeneralEducationCompetenciesandCoreCourses(effectivefall2015))
FSU: <http://liberalstudies.fsu.edu/>

Legend: Prerequisite Co Requisite

**PROFESSIONAL SCHOOL OF
INDUSTRIAL AND MANUFACTURING
ENGINEERING
2017-2018**



MASTER'S PROGRAM

Admission Requirements for the Graduate Program in Industrial and Manufacturing Engineering

- A B.S. degree in Industrial Engineering, science or mathematics, with GPA at least 3.0/4.0.
- Good standing in the institution last attended.
- A quantitative portion score on the GRE of at least 151 and at least 146 on the verbal.
- TOEFL score of at least 80.
- Three favorable recommendations.

For further information contact the Director of Graduate Studies of the Department of Industrial and Manufacturing Engineering (850-410-6354)

1. Satisfies Oral Competency Requirement. Students who have previously earned credit in Public Speaking and Cost Accounting may receive a waiver of this requirement.
 2. An approved course from another engineering discipline, business, computer science or mathematics (3000 level or higher). Requires advisor approval prior to enrolling in the course.
 3. From the following: EIN 4214 (Safety), EIN 4936 (ISO 9000), EIN 4150 (Technology, Entrepreneurship & Communication), EIN 3905 (Directed Independent Study).
 4. Sequence must be taken during the students final two semesters of work towards the Bachelor of Science degree.

Legend: Prerequisite ●——> Co Requisite ●----->

NAME:							
MATRICULATION DATE:				EXPECTED GRADUATION DATE:			
Pre-Engineering Requirements				Professional School Requirements			
Course Name	Course Number	Hrs	Grade	Course Name	Course Number	Hrs	Grade
History		3		Calculus III	MAC 2313	5	
Soc Sci		3		Linear Algebra	MAS 3105	3	
Hum/FA*		3		Differential Equations	MAP 2302	3	
Hum/FA		3		Gen. Physics II	PHY 2049	4	
Hist/SS/Hum/FA		3		Gen. Physics II Lab	PHY 2049L	1	
Hist/SS/Hum/FA		3		Thermodynamics	EML 3100	2	
Oral Comp - Satisfied via IME Tools (see Prof. School Reqs)				Eng. Econ.	EGN 3613	2	
Communications	ENC 1101/21	3		Elec. Engr.	EEL 3003	3	
Communications	ENC 1102/22	3		Elec. Engr. Lab	EEL 3003L	1	
Calculus I	MAC 2311	4		Mechanics	EGM 3512	4	
Calculus II	MAC 2312	4		Eng. Graphics	EGN 2123	2	
Gen. Chem. I	CHM 1045	3		<i>C Prgrm. (FAMU)</i>	COP 2221 or COP 3014	3	
Gen. Chem. I Lab	CHM 1045L	1		<i>C Prgrm. (FSU)</i>	CGS 3406 or COP 3014	3	
Gen. Physics I	PHY 2048	4		IE Dept. Elect.	NOTE 1	3	
Gen. Physics I Lab	PHY 2048L	1		Stat. Topics in IE	EGN 3443	3	
First Yr. Eng. Lab	EGN 1004L	1		Comp.Topics in IE	ESI 3628	3	
		42		Mfg. Processes I	EIN 3390C	3	
				Engineering Mgmt.	EIN 3104	3	
NOTE 1:				IME Tools	EIN 3010	3	
From the following: , EIN 4314/4214 (Safety), EIN 4936 (ISO 9000).				Human Factors	EIN 4243	3	
EIN 4150/4445 (Technology & Entrepreneurship)				Mfg. Processes II	EIN 4936/EIN 4394C	3	
EIN 3905 (Directed Independent Study).				I. P. S.	EIN 4333	3	
NOTE 2:				Mfg. Syst. Engr.	EIN 4621	3	
An approved course from another engineering discipline, business,				IME Practicum	EIN 4940	2	
computer science or mathematics. Requires advisor approval prior to				Senior Design Project I	EIN 4890	3	
enrolling in the course. (3000 level or higher)				Senior Design Project II	EIN 4892	3	
				O. R. I	ESI 3312	3	
				Q.C.	ESI 4234	3	
				O.R.II	ESI 4313	3	
				Simulation	ESI 4523	3	
				Technical Elective	Note 2	3	
						86	

Planned Course Offerings*										
Course Name	Course Number	Spring 18	Summer 18	Fall 18	Spring 19	Summer 19	Fall 19	Spring 20	Summer 20	Fall 20
Eng. Graphics	EGN 2123	x		x	x		x	x		x
Eng. Econ.	EGN 3613	x	x	x	x		x	x		x
Stat. Topics	EGN 3443	x		x	x		x	x		x
O. R. I	ESI 3312			x			x			x
IME Tools	EIN 3010			x			x			x
Engineering Mgmt.	EIN3104			x			x			x
Mfg. Processes I	EIN 3390C			x			x			x
O.R.II	ESI 4313	x			x			x		
I. P. S.	EIN 4333	x			x			x		
Mfg. Processes II	EIN 4394C	x			x			x		
Q.C.	ESI 4234			x			x			x
Human Factors	EIN 4243			x			x			x
Mfg. Syst.	EIN 4621			x			x			x
Comp.Topics	ESI 3628			x			x			x
Senior Design I	EIN 4890			x			x			x
Senior Design II	EIN 4892	x			x			x		
IME Practicum	EIN 4940	x			x			x		
Simulation	ESI 4523	x			x			x		
ISO 9000	EIN 4936	x			x			x		
Safety	EIN 4214/EIN 4314	x			x			x		
* Subject to change										