PURDUE UNIVERSITY | College of Engineering

Engineering Faculty Document
No.: 69-24
January 31, 2024

TO: The Engineering Faculty

FROM: The Faculty of the School of Industrial Engineering

RE: New Bachelor Double-Degree program between Industrial Engineering and Integrated Business and Engineering

The Faculty of the School of Industrial Engineering has approved the following new Double-Degree program between Industrial Engineering (BSIE) and Integrated Business and Engineering (BSIBE). This action is now submitted to the Engineering Faculty with a recommendation for approval.

DESCRIPTION:

The School of Industrial Engineering and the Daniels School of Business have developed a plan for earning two Bachelor of Science degrees: Industrial Engineering and Integrated Business and Engineering. Students will follow the attached curriculum to successfully complete both programs within at most 4.5 years/9 semesters.

RATIONALE:

Pursuing the BSIE degree along with a Bachelor degree in the business school has long been a desire for Industrial Engineering and Business/Management students alike. However, program requirements made the timeline prohibitive, necessitating alternatives (such as the BS-STEM+MBA program). With the recent establishment of the Bachelor of Science in Integrated Business and Engineering, which has curriculum features most closely aligned with IE, the prohibitive timeline to degree completion is no longer the case. It is expected that the double-degree option will be popular with students admitted to the Daniels School of Business, as well as those within the School of Industrial Engineering.

Young-Jun Son
Head/Director of the School of Industrial Engineering

Link to Curriculog entry:

To be Completed.

Program Plan of Study

Program Note:

- The MGMT courses approved under "IE Technical Elective / Business Method Selective" and MGMT 49400 in Semester 9 apply only to students pursuing both degrees. Students pursuing only the BSIE degree must follow the established program (EFD 75-17).
- IE 43100 – Industrial Engineering Design is the major engineering design experience (satisfying ABET curriculum requirements). Presently, this is the only course that IE uses to satisfy the ABET requirement of a major engineering design experience. MGMT 49400 will fulfill the two primary needs from an ABET standpoint; namely that the experience "1) incorporates appropriate engineering standards and multiple constraints, and 2) is based on the knowledge and skills acquired in earlier course work." In addition, MGMT 49400 has similar assessed learning outcomes to IE 43100.

Year One: Fall Semester (Sem 1)		
CLASS	**HOURS**	**Notes**
CHM 11500 - General Chemistry	4	
MA 16500 - Analytic Geometry And Calculus I	4	
MGMT 29110 or MGMT 11000, IBE/*MGMT Seminar*	1	
ENGR 13300 - Transforming Ideas To Innovation, EPICS	2	Satisfies ENGR 13100 & 13200 for BSIE
EPCS 11100 or VIP 17911, *First Year Participation in…*	1	Satisfies ENGR 13100 & 13200 for BSIE
MGMT 20000 - Introductory Accounting	3	IE Technical Elective
SEMESTER TOTAL	15	

Year One: Spring Semester (Sem 2)		
CLASS	**HOURS**	**Notes**
ECON 25100 - Microeconomics	3	IE: General Education Elective-Behavioral and Social Science
MA 16600 - Analytic Geometry And Calculus II	4	
PHYS 17200 - Modern Mechanics	4	
EPCS 12100 or VIP 17912, *First Year Participation in…*	1	Satisfies ENGR 13100 & 13200 for BSIE
Oral Communication	3	
MGMT 38800 – Python for Business	3	
SEMESTER TOTAL	18	

Year Two: Fall Semester (Sem 3)	**Notes**

CLASS	HOURS	
MA 26100 - Multivariate Calculus	4	
ME 27000 - Basic Mechanics I	3	IBE Engr Core
IE 20000 - IE Seminar	0	
IE 23000 – Probability and Statistics in Engr I	3	Satisfies STAT 35000 for IBE
MGMT 31000 – Financial Management	3	
Written Communication	3	
MGMT 29120 - Integrated Business & Engineering Seminar II	1	
SEMESTER TOTAL	17	

Year Two: Spring Semester (Sem 4)		
CLASS	**HOURS**	**Notes**
MA 26500 - Linear Algebra	3	
IE 33000 - Probability and Statistics in Engr II	3	Satisfies MGMT 30500 for BSIBE
ME 20000 - Thermodynamics I	3	IBE Engr Core
NUCL 27300 - Mechanics Of Materials	3	
CS 15900 – C Programming	3	
MGMT 29130 - Integrated Business & Engineering Seminar III	1	
SEMESTER TOTAL	16	

Year Three: Fall Semester (Sem 5)		
CLASS	**HOURS**	**Notes**
MA 26600 - Ordinary Differential Equations	3	
IE 33200 - Computing In Industrial Engineering	3	IBE Specialty Area (3)
IE 33500 - Operations Research - Optimization	3	IBE Engineering Selective
IE 33600 - Operations Research - Stochastic Models	3	IBE Business Method Selective
MGMT 49200 - Intellectual Property Management	2	
Team Based Design Selective (Innovative Lab)	2	IE: General Education Elective-Science, Technology, & Society
SEMESTER TOTAL	17	

Year Three: Spring Semester (Sem 6)	**Notes**

CLASS	HOURS	
ECE 20001 - Electrical Engineering Fundamentals I	3	IBE: Engr Expansion
IE 37000 - Manufacturing Processes I	3	IBE: Specialty Area (6)
MGMT 36100 – Operations Management	3	
IE 34300 – Engineering Economics	3	IBE Engr Core
MGMT 35200 - Strategic Management	3	IE General Education Elective-Non-Intro
Team Based Design Selective (Innovative Lab)	2	IE: General Education Elective-Science, Technology, & Society
SEMESTER TOTAL	17	

Year Four: Fall Semester (Sem 7)		
CLASS	**HRS**	**Notes**
IE 38300 – Integrated Production Systems I	3	
IE 38600 - Work Analysis And Design I	3	IBE: Specialty Area (9)
IE 47400 - Industrial Control Systems	3	IBE: Specialty Area (12)
MGMT 32400 - Marketing Management	3	IE Technical Elective
MGMT 29140 - Integrated Business & Engineering Seminar IV	1	
MGMT 49300 - Storytelling With Data	2	
SEMESTER TOTAL	15	

Year Four: Spring Semester (Sem 8)		
CLASS	**HRS**	**Notes**
IE 48600 - Work Analysis And Design II	3	
IE Technical Elective: IE 47000 or IE 48400	3	
Business Depth Selective	3	
MGMT 38200 - Management Information Systems	3	
MGMT 20100 - Management Accounting I	3	IE General Education Elective-Non-Intro
SEMESTER TOTAL	15	

Year Five: Fall Semester (Sem 9)		
CLASS	**HRS**	**Notes**

IE 43100 – Industrial Engineering Design or MGMT 49400 – IBE Capstone	3	Satisfies IE 43100 for BSIE degree
IE Technical Elective / Business Method Selective	3	Select One: MGMT 36600 or MGMT 47200 or MGMT 47400; Satisfies IE Technical Selective for BSIE degree
UC Humanities	3	IE General Education Elective-Humanities
OBHR 33000 - Introduction To Organizational Behavior	3	IE Technical Elective
PHYS 24100 - Electricity And Optics	3	
SEMESTER TOTAL	15	