



INTERDISCIPLINARY BUSINESS WITH ENGINEERING STUDIES MAJOR (IBE)

The IBE major provides students with an interdisciplinary program having both business and engineering course content. The major includes a set of core courses in both business and engineering/engineering technology that will enable a graduate to function effectively in a technical business environment. In addition, a student will be able to choose courses from one of a selection of “skill” modules, each designed to enable a student to function in a specific technically related business area. The modules provide an entry-level set of tools that will help graduates provide immediate value to their employer. Modules include Accounting/Finance, Supply Chain Management, Quality Control & Six Sigma, Technical Sales, and Product Design & Manufacture.

For the B.S. degree in Interdisciplinary Business and Engineering, a minimum of 127 credits is required. Each student must earn at least a grade of C in each 300- and 400-level course in both the Business and the Engineering Core, as well as in ACCTG 211, B A 243, ECON 002 GS, ECON 004 GS, MIS 204, SCM 200 GQ, MATH 140, MATH 141, MCH T 111 OR E MCH 211, MCH T 213 OR E MCH 213, EET 101 OR E E 211, CMPET 117 OR CMPEN 271, CMPSC 201, EG T 120.

CAREER OPPORTUNITIES

The Academic and Career Planning Center (ACPC) assists students with the process of career and life planning through a full range of programs and services. You may schedule appointments with the ACPC staff to discuss issues including interests, skills, values, and goal setting, as well as how to find career information, internships, full-time jobs, and graduate schools. You are encouraged to utilize the services of the ACPC every year from your first semester to graduation.

The breadth offered by the IBE major is reflected in the diverse career paths of graduates possible in the industrial, retail, financial, and academic sectors.

IBE graduates will typically enter the business side of technical companies. The types of jobs that may be appropriate for graduates from this program might be:

1. Technical /industrial sales
2. Technical business /product development
3. Technical support
4. Junior level product or brand management
5. Production planners
6. Operations analysts
7. Purchasing agent in technical firm
8. Operations/production manager
9. Plant accountant in technical firm
10. Project Manager

Recommended Academic Plan – Interdisciplinary Business with Engineering Studies (IBE at Erie)

Semester 1	Credits	Semester 2	Credits
<i>ENGL 015 Rhetoric & Composition or Honors 030 (GWS)</i>	3	MATH 141 (GQ) Calculus with Analytic Geometry II	4
MATH 140 Calc w/Analytic Geometry (GQ)	4	Humanities (GH)	3
CHEM 110 (GN) Chemical Principles I	3	EG T 120 Introduction to Graphics and Solid Modeling	3
Arts (GA)	3	ECON 002 Intro to Micro Economics (GS)	3
EDSGN 100S First-Year Seminar	3	CMPS 201 (GQ) Programming for Engineers with C++	3
Total Credits:	16	Total Credits:	16
Semester 3	Credits	Semester 4	Credits
<i>CAS 100 (GWS) Effective Speech</i>	3	ACCTG 211 Financial & Managerial Accounting	4
ECON 004 Intro to Macro Economics (GS)	3	PHYS 212 (GN) General Physics: Electricity and Magnetism	4
B A 241-Legal Environment of Business (2) and B A 242-Social & Ethical Environment Business (2)	4	<i>ENGL 202C (GWS) Effective Writing: Technical Writing</i>	3
M I S 204 Intro to Management Info Systems	3	MCH T 111 Mechanics for Technology: Statics or E MCH 211 Statics	3
PHYS 211 (GN) General Physics: Mechanics	4	SCM 200 (GQ) Introduction to Statistics for Business	4
Health and Physical Activity (GHA)	1.5		
Total Credits:	18.5	Total Credits:	18
Semester 5	Credits	Semester 6	Credits
MGMT 301 Basic Management Concepts	3	FIN 301 Corporation Finance	3
EET 101 Electrical Circuits I or E E 211 Electrical Circuits and Power Distribution	3	CMPET 117 Digital Electronics or CMPEN 271 Introduction to Digital Systems	3
MCH T 213 Strength and Properties of Materials or E MCH 213 Strength of Materials	3	ME 300 Engineering Thermodynamics I or MET 330 Thermodynamics	3
SCM 310 Introduction to Operations Management	3	International Elective	3
MKTG 301 Principles of Marketing	3	Module Elective	3
Total Credits:	15	Total Credits:	15
Semester 7	Credits	Semester 8	Credits
MGMT 475W Strategic Product Development	3	MGMT 476 Product Realization Capstone	3
MGMT 410 Project Management	3	Humanities (GH)	3
Module Elective	3	Arts (GA)	3
Module Elective	3	Module Elective	3
Health and Physical Activity (GHA)	1.5	Module Elective	3
Total Credits:	13.5	Total Credits:	15

- **Bold type** indicates courses requiring a quality grade of C or better.
- *Italic* indicates courses that satisfy both major and General Education requirements.
- **Bold italics** indicates courses requiring a quality grade of C or better and that satisfy both major and General Education requirements.
- GWS, GHA, GQ, GN, GA, GH, and GS are codes used to identify General Education requirements.
- W is the code used to designate courses that satisfy University Writing Across the Curriculum requirements.
- If you have not completed two years of high school study of one foreign language and graduated in the year 2001 or later, you must also schedule 3-4 credits of college level foreign language (in addition to your program requirements).
- General education requirements include 6 credits of arts (GA), 6 credits of humanities (GH), 6 credits of social and behavioral sciences (GS), 3 credits of health and physical activity (GHA), 9 credits of natural sciences (GN), 9 credits of writing/speaking (GWS), and 6 credits of quantification (GQ).
- Also required are 3 credits of United States cultures (US), 3 credits of International Cultures (IL) which can be used to satisfy part of the general education requirements. A (USI) may count for either category, but not both.
- University Undergraduate Advising Handbook is on-line at <http://www.psu.edu/dus/handbook/>.
- Requirement Web page <http://www.psu.edu/advising/requirements.htm>.
- Blue Book Web site <http://www.psu.edu/bulletins/bluebook/>.

Scheduling patterns for courses not taught each semester:

Program Notes:

Academic Advising Notes:

INTERDISCIPLINARY BUSINESS WITH ENGINEERING STUDIES MAJOR

(B.S., 127 credits)

NAME: _____

PSU ID _____

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BUSINESS COURSE LIST FOR THE INTERDISCIPLINARY BUSINESS WITH ENGINEERING STUDIES MAJOR

MODULES

Module 1

ACCOUNTING/FINANCE (16 credits)

ACCTG 305(4) Financial Statement Analysis
ACCTG 340(3) Cost Accounting
FIN 405(3) Corporate Finance
Select six (6) credits in ACCTG or FIN at the 400 level

Module 2

QUALITY CONTROL (15credits)

Q C 450 (3) Intro. to Quality Control Engineering
Select 12 credits from the following:
STAT 461 (3) Analysis of Variance
MATH 482/ (3) Mathematical Methods of
Operations Research
STAT 460 (3) Intermediate Applied Statistics
STAT 462 (3) Applied Regression Analysis
STAT 464 (3) Applied Nonparametric Statistics

Module 3

OPERATIONS & SUPPLY CHAIN (15 credits)

SCM 445(3) Operations Planning & Control
SCM 455(3) Logistics Systems Analysis & Design
SCM 460(3) Purchasing & Material Management
Plus two of the following:
ECON 485(3) Econometric Techniques
MKTG 485(3) Business to Business Marketing
MIS 304(3) Introduction to ERP
MIS 336(3) Database Management Systems

Module 4

TECHNICAL SALES (15 credits)

SCM 465(3) E-Commerce
SCM 460(3) Purchasing & Material Management
MKTG 410(3) Personal Selling
Plus two of the following:
MIS 304(3) Introduction to ERP
MKTG 440(3) Services Marketing
MKTG 485(3) Business to Business Marketing
SCM 455 (3) Logistics Systems Analysis & Design

Module 5

PRODUCT DESIGN & MANUFACTURE (16 credits)

IET 101 (3) Manufacturing Materials & Processes
IET 215 (2) Production Design
IET 216 (2) Production Design Lab
EG T 121 (3) Applied Solids Modeling
MET 306 (3) Computer Aided Design
QC 450 (3) Intro. To Quality Control Engineering