INTERDISCIPLINARY BUSINESS WITH ENGINEERING STUDIES, B.S.

Begin Campus: Any Penn State Campus
End Campus: Erie

Program Learning Objectives

Critical and Integrative Thinking:

1. Students will be able to think critically by actively considering different points of view and utilize an integrated, holistic approach to construct relevant analyses, arguments, and conclusions.
   a. Students will clearly identify the key issues in the analysis.
   b. Students will present the appropriate analytic framework or warrant.
   c. Students will identify and assess important assumptions and question their validity.
   d. Students will identify and assess the quality of supporting data/evidence & provide additional data/evidence related to the issue.
   e. Students will draw and discuss conclusions, implications, and consequences.
   f. Students will identify key business issues using an integrated approach.
   g. Students will apply appropriate holistic analyses to business issues.
   h. Students will generate solutions that incorporate an integrated perspective to business problems.

Oral Communication:

1. Upon graduation our undergraduate students in The Sam and Irene Black School of Business will be able to execute the oral communication skills that they have learned in the interactive business courses to business situations where effective explanation, persuasion, exchanging information and ideas are essential.
   a. Students will be able to clearly express their line of thoughts to an audience.
   b. Student will be able to show confidence in their ability to communicate with their audience.
   c. Students will be able to effectively organize their thoughts and clearly communicate their organized thoughts with their audience.
   d. Students will be able to provide accuracy of content in their communication with their audience.
   e. Students will be able to provide depth of content in their communication with their audience.
   f. Students will be able to deliver a professional quality presentation to an audience while using appropriate and supporting technology.
   g. Students will be able to have a professional appearance in front of their audience.

Writing Competence:

1. Students will be able to demonstrate effective writing skills.
   a. Students will organize written assignments effectively.
   b. Students will develop a clear and well-structured argument.
   c. Students will identify and provide evidence sufficient to support the argument.
   d. Students will find reliable sources and cite and reference them correctly.
   e. Students will demonstrate proper writing mechanics with respect to spelling, punctuation, and grammar.

Teamwork:

1. Students will be positive contributors to effective team functioning via application of their functional skills in addition to strong interpersonal skills.
   a. Students will be able to recognize the different ways in which their peers contribute to collaborative work.
   b. Students will contribute effectively to teams.
   c. Students will display good interpersonal skills in teamwork contexts.
   d. Students will learn how to interact effectively on teams.

Ethics and Social Responsibility:

1. Students will be able to recognize ethical issues and apply ethical theories in business situations at individual and/or organizational levels.
   a. Students will recognize ethical issues and the inter-relationships between business and society.
   b. Students will identify stakeholders affected by decisions and actions.
   c. Students will understand the consequences of decisions/actions to stakeholders.
   d. Students will analyze an ethical dilemma applying multiple ethical theories.
   e. Students will be able to correctly apply relevant ethical principles.
   f. Students will be able to recommend a plan of action.
   g. Students will be able to supported recommend action with by ethical analysis/evaluation.

Functional Area Knowledge:

1. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material across various business domains.
   a. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Accounting domain.
   b. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Economics domain.
   c. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Management domain.
   d. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Quantitative Business Analysis domain.
   e. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Finance domain.
f. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Marketing domain.

g. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Legal and Social Environment domain.

h. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the Information Systems domain.

i. Students will be able to apply foundational knowledge to analyze and solve problems and interpret written and visual material in the International Issues domain.

Functional Area Knowledge (ACCOUNTING):

1. Students will be able to demonstrate a broad general knowledge of the principles of accounting, both managerial and financial.
   a. Students will be able to perform basic financial accounting transaction analysis.
   b. Students will prepare and interpret general purpose financial statements.
   c. Students will perform financial statement analysis.
   d. Students will apply various principles of managerial accounting.

Functional Area Knowledge (ECONOMICS):

1. Students will be able to demonstrate a broad general knowledge of the principles of economics, both microeconomics and macroeconomics.
   a. Students will apply concepts associated with free market operations.
   b. Students will conduct decision making based on opportunity costs and marginal analysis.
   c. Students will determine consumer behavior based on various measures of elasticity.
   d. Students will interpret effects associated with the four major market structures.
   e. Students will apply the theory of comparative advantage.
   f. Students will apply the basic market and macroeconomic models to explain changes in price and quantity.
   g. Students will define, calculate, and interpret major economic indicators.
   h. Students will identify and analyze the phases of the business cycle and their characteristics, including the problems associated with each cycle.
   i. Students will interpret the impact of fiscal policy effects on the macro economy.
   j. Students will interpret the impact monetary policy on the macro economy.
   k. Students will identity how various analytical frameworks, (e.g., classical, Keynesian, monetarist, etc.) used may affect the policy conclusions in debates over stabilization policy.
   l. Students will apply the theory of comparative advantage and the flows of financial assets principle to trade.

Functional Area Knowledge (FINANCE):

1. Use discounted valuation techniques to make capital investment decisions.

a. Calculate the NPV for three scenarios (1) base case, (2) best case, and (3) worst case
b. Identify relevant initial CFs for NPV calculation
c. Identify relevant operating CFs for NPV calculation
d. Identify relevant terminal CFs for NPV calculation
e. Create and interpret a NPV profile
f. Analyze and accept or reject a proposed investment project.

2. Understand the relationship between risk and return for equity and debt.
   a. Understand the trade-off between risk and return for individual assets by computing a beta and required rate of return using the CAPM (Capital Asset Pricing Model).
   b. Explain an appropriate proxy for the market rate of return for the CAPM.
   c. Explain an appropriate risk-free rate proxy for the CAPM.
   d. Calculate cost of debt or YTM of corporate bonds

3. Determine the required return on a proposed investment.
   a. Calculate and interpret the weighted-average cost of capital (WACC) by estimating the market cost of equity and debt.
   b. Understand when WACC is appropriate as the required return to evaluate a proposed capital investment.

Functional Area Knowledge (MIS):

1. Students will be able to describe the benefits and challenges of applying information technology in various organizations and functional areas.
   a. Students will describe the benefits and challenges of applying information technology in various organizations and functional areas.
   b. Students will describe management issues and career paths in Information Technology.

Functional Area Knowledge (INTERNATIONAL BUSINESS):

1. Students will be able to will have basic multidisciplinary knowledge needed to conduct international business and understand the impact of globalization.
   a. Our students will develop an awareness of global issues and diverse cultures.
   b. Our students will be able to analyze how global factors affect decision making.
   c. Our students will be able to use information resources to formulate global strategy.

Functional Area Knowledge (LEGAL ENVIRONMENT):

1. Students will be able to identify key terms, concepts, and theories of the law, understand how law affects business, demonstrate an ability to analyze legal issues, and apply the law to business situations.
   a. Students will identify key terms, concepts, and theories of law.
   b. Students will analyze legal issues and apply the law to business situations.

Functional Area Knowledge (MANAGEMENT):

1. Students will be able to demonstrate a broad knowledge of each business discipline, including management.
   a. More particularly, students will be able to identify the correct core concepts in the context of the following 12 main topic areas:
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i. Introduction to History of Management
ii. Managing in the Global Environment
iii. Decision Making
iv. Planning Strategy
v. Organizational Structure Culture
vi. Managing Human Resources
vii. Individual Attitudes Behavior
viii. Managing Teams
ix. Motivation
x. Leadership
xi. Communication
xii. Principles of Control

Functional Area Knowledge (Marketing):

1. Students will be able to demonstrate a broad knowledge of marketing discipline.
   a. Students will understand the concept of marketing and marketing philosophies.
      i. Definition of marketing.
      ii. Main marketing philosophies (e.g., market orientation, societal market orientation, sales orientation, production orientation).
   b. Students will understand the process of marketing plan and how to set marketing strategies.
      i. Be able to prepare an outline of marketing plan (e.g., SWOT analysis).
      ii. Be able to choose an appropriate marketing strategy for different types of firms (e.g., market development, product development, diversification, market penetration).
   c. Students will understand the process of market research.
      i. Be able to choose an appropriate market research design and method for different types of market research questions.
   d. Students will understand buyers and markets.
      i. Be able to understand the mechanism of the buyer behaviors.
   e. Students will understand the concept of target marketing strategy.
      i. Be able to use market segmentation variables for targeting and positioning.
      ii. Students will understand the 4P's (product, price, promotion, place) concepts.
      iii. Be able to formulate MARKETING 4P’S DECISIONS.

Functional Area Knowledge (Quantitative Business Analysis):

1. Upon graduation our undergraduate students in The Sam and Irene Black School of Business will be able to demonstrate a broad knowledge of business disciplines (quantitative business analysis).
   a. Students will be able to apply the basic rules of probability to assess likelihood within a population.
   b. Students will be able to identify and apply appropriate probability distribution concepts to analyze data.
   c. Students will be able to demonstrate an understanding of correlation and regression analysis.

Functional Area Knowledge (Supply Chain Management):

1. Students will be able to demonstrate a broad knowledge of business disciplines (supply chain management).