

UNIVERSITY OF VIRGINIA
SCHOOL OF ENGINEERING & APPLIED SCIENCE

Engineering Business Minor

Thanks to grants from Clark Construction Group, Inc. and Bill Utt (SEAS '79, '80, Darden '84), engineering students are now able to pursue a minor in engineering and business. This minor provides students with the opportunity to learn how modern business organizations function and to acquire some of the skills they will need to be effective in the corporate world. The minor involves coursework in economics, business, and new product development, and students take classes in both SEAS and the McIntire School of Commerce.

CURRICULUM

The Engineering Business Minor requires the successful completion of eighteen (18) credit hours. The academic scope outlined in the Appendix will be covered fundamentally in the three required courses with flexibility in elective offerings to provide more depth in the areas of interest to individual students.

REQUIRED COURSES

- COMM 180: Making Business Work (a survey course that is open to engineering students and would introduce engineering students to each of the topics above).
- ECON 201: Principles of Economics: Microeconomics
- TMP 351: Technology & Product Development Life Cycle

ELECTIVES *

In addition to the three required courses, students will be required to take three electives from the following list:

Hours	Course #	Course Title
3.0	ECON 202	Principles of Economics: Macroeconomics
3.0	COMM 201	Introduction to Financial Accounting
3.0	COMM 202	Introduction to Management Accounting
3.0	ISBU 327	Investment Analysis
3.0	COMM / ISBU** 341	Commercial Law
3.0	COMM / ISBU 351	Fundamentals of Marketing
3.0	ISBU 361	Organizational Behavior

3.0	COMM / ISBU 371	Managerial Finance
3.0	COMM / ISBU 381	Business Ethics
3.0	ISBU 384	International Business
3.0	COMM / ISBU 467	Organizational Change & Development
3.0	COMM / ISBU 468	Entrepreneurship
3.0	ISBU 485	Strategic Management
3.0	TMP 352	Science & Technology Public Policy
3.0	TMP 399	Case Studies in Technology Management & Policy
3.0	ENGR 488	Aspects of Engineering Practice
3.0	MAE 400	Financial Aspects of Engineering
3.0	CE 441	Construction Engineering and Economics
3.0	SYS 481	Engineering Economic Systems
3.0	SYS 256	Management of E-Commerce Systems
3.0	ECON 421	International Trade

* Other qualifying elective courses are being evaluated, including international offerings of Politecnico di Milano (Italy) and Technische Universitat Munchen (Germany) to facilitate an exchange program through the IMCC.

** ISBU is the course designation for offerings in the School of Continuing & Professional Studies.

APPENDIX

Academic Scope

- ***Strategic Planning***

An introduction to the purpose, processes and structures of commerce, defining the public and private sectors, distinguishing product and service businesses and introducing concepts such as the product life cycle, competitive analysis, mergers and acquisitions and globalization.

- ***Economics & Policy***

An overview of free-market economics forms the basis for understanding the interrelationship of capitalism and American democracy, as well as global market principles involving international investment banking and government fiscal and monetary policies.

- ***Marketing & Sales***

Applying such disparate disciplines as behavioral psychology and statistical analysis, this will cover the art and science of customer satisfaction. Fundamentals of pricing strategy, product development, distribution channels and promotional activities will be studied, as well as differences between consumer and business-to-business markets. A key idea is to understand 'marketing' as all activities – from product design to warranty fulfillment – that affect the all-important customer, including intermediate stakeholders as well as end users.

- ***Finance & Accounting***

It is vital for students to understand the profit motive that fuels our economic system. Finance covers acquisition and investment of enterprise funding, and requires basic understanding of market capitalization and investor requirements. Accounting includes standard costing, budget planning and auditing. Special attention will focus on internal and external reporting.

- ***Operations & Distribution***

From research and development to pilot production to full-scale manufacturing, operations is a complex area. In fact, logistical and performance implications begin with material development / sourcing, then factor potential effects of shipping by various means (e.g., temperature extremes in flight, high-frequency vibration over land) and ultimately consider the desired and unintended effects of usage, both proper and improper.

- ***Ethics***

One of TCC's strengths is the integration of ethics into engineering education, and this minor would take advantage of that strength by having a strong business ethics component. Intellectual property rights, patent law, environmental impact studies and socio-political ramifications are some of the topics that will be covered.

- ***Organizational Behavior & Leadership***

Consistent with the University's emphasis on producing well-rounded graduates, SEAS graduates are generally regarded as more broad-minded than many of their peers at other institutions. It is therefore all the more important to impress upon them the critical importance of group dynamics, and to develop their skills at building and leading highly effective teams.

Revised 8 April 2004

W. B. Carlson