

M.Eng. Proposal Form – **ENGINEERING MANAGEMENT**

Date: _____

NAME: _____ ADVISOR: _____

		Year 20__	Year 20__		
		Cr.	Fall	Spr.	Comments
REQUIRED COURSES					
CEE 5900	Project Management	4			
CEE 5910	Project	4			
CEE 5930	Engineering Management Methods	4			
CEE 5970	Risk Analysis and Management	3			

		Cr.	Fall	Spr.	Comments
FINANCE/ACCOUNTING ELECTIVE (1 required)¹					

		Cr.	Fall	Spr.	Comments
BEHAVIOR ELECTIVE (1 required)²					

		Cr.	Fall	Spr.	Comments
SPECIALIZATION ELECTIVES (3 required)³					

		Cr.	Fall	Spr.	Comments
SEMINARS (Indicate if Participatory or Non-Participatory)⁴					

		Cr.	Fall	Spr.	Comments
ALL OTHER COURSES					

Total Credits for all Fall & Spring Courses⁵ _____

TOTAL M.Eng. PROGRAM CREDIT HOURS: _____ (must equal or exceed 30)

APPROVALS: Advisor _____ EM Director _____

Date _____ Date _____

See Attached Notes. Updated proposals should identify what changes were made and why.

Notes:

¹ One course in Finance/Accounting is required. Suggested courses appropriate for a student's background in accounting and engineering economics are listed below.

<u>Student's Background</u>	<u>Suggested Courses</u>
No background in accounting	NBA 5530 – Finance & Accounting for Engineers (S)
Some accounting, but no engineering economics	ORIE 5150 – Economic Analysis of Engr. Systems (S)
Some background in both accounting and engineering economics	NCC 5560 – Managerial Finance (F/S)

² One course in individual and/or organizational behavior is required. Suggested courses include:

- CEE 6900 Creativity, Innovation and Leadership (Spring, 3 credits)
- NCC 5530 Marketing Management (Spring, 3 credits)
- NCC 5540 Management & Organizations (Spring, 3 credits)
- NBA 6630 Managerial Decision Making (Fall, 3 credits)
- NBA 6660 Negotiations (Fall/Spring, 3 credits)
- ILROB 5200 Organizational Behavior & Analysis (Fall/Spring, 3 credits)

³ Each student's program must include three electives selected to provide an area of specialization. *At least two of the three courses must be technical in nature and at least one of the three should be from Engineering.* The student has an option of selecting either a disciplinary specialization or a functional specialization.

Johnson School courses that may make sense as a technical specialization course include:

- NBA 5180 Data Mining for Marketing, Sales...
- NBA 5270 Applied Price Theory
- NBA 6000 Strategic Role of IT
- NBA 6010 Electronic Commerce
- NBA 6120 Disruptive Technologies
- NBA 6390 Data-Driven Marketing
- NBA 6410 Logistics and Manufacturing Strategy

Disciplinary specialization - The student can select three courses that form a natural extension to the technical work done in their undergraduate major, providing greater depth in that discipline. In most cases, these will be courses at the 500 or 600 level in the undergraduate major field. In some cases, courses in a related field will be most appropriate; for example, a student who was an undergraduate in electrical engineering might choose coursework in computer science or materials science. The student and their advisor are responsible for determining an appropriate selection of courses.

Functional specialization - Such a specialization will often involve courses selected from two, or even three, departments, but which focus on a particular area of application. The following illustrative functional specialization areas (with examples of appropriate courses for each) are intended to offer ideas that may be useful, but are not intended to be an exhaustive list of possibilities. The student and their advisor can create other options, subject to approval by the Director of the Engineering Management Program.

Decision Support and Systems Development

CEE 5240	Applied Systems Engineering I (F)
CEE 5252	Applied Systems Engineering II (S)
CEE 5290	Heuristic Methods for Optimization (F)
CRP 5080	Introduction to Geographic Information Systems (S)
CS 4302	Web Information Systems (S)
CS 4320	Introduction to Database Systems (F)
CS 5150	Software Engineering (S)
NBA 6000	The Strategic Role of Information Systems (S)
NBA 6010	Electronic Commerce (S)
NBA 6120	Disruptive Technologies (F)

Energy Systems Management

A&EP 4840	Controlled Fusion (S)
A&EP 6330	Nuclear Reactor Engineering (F)
ChE 6610	Air Pollution Control (S)
ECE 4510	Electric Power Systems I (F)
ECE 4520	Electric Power Systems II (S)
ECE 5510	Electric Systems Engineering & Economics (F)

Environmental Systems Management

CEE 5940	Economic Methods for Engineering & Management (F)
CEE 6200	Water Resource Systems Engineering (S)
CEE 6230	Environmental Quality Systems Engr. (not offered 04-05)
CEE 6550	Transport, Mixing and Transformation in the Environment (F)
ChE 6610	Air Pollution Control (S)

Manufacturing Management

NBA 6410	Business Logistics Management (S)
OR&IE 5100	Design of Manufacturing Systems (F)
OR&IE 5126	Supply Chain Management (S)
OR&IE 5120	Production Planning and Scheduling Theory and Practice (S)
OR&IE 5122	Inventory Management (F)
OR&IE 5770	Quality Control (F)

Property Development and Construction

CEE 5950	Construction Planning and Operations (F) [engineering specialization]
CEE 6750	Concrete Materials & Construction (S)
CRP 5320	Real Estate Development Process (F)
CRP 5330	Real Estate Marketing & Management (F)
CRP 5520	Land Use Planning (F)
CRP 5530	Land Use Regulations (S)
HADM 6620	Principles of Real Estate (F)
HADM 6628	Real Estate Finance and Investments (S)

Systems Engineering

CEE 5240	Applied Systems Engineering I (F)
CEE 5252	Applied Systems Engineering II (S)
CEE 6860	Civil Infrastructure Systems (S)
CEE 5290	Heuristic Methods for Optimization (F)
ECE 5510	Electric Power Systems Engineering & Economics (F)
M&AE 4780	Feedback Control Systems (S)
CS 5150	Software Engineering (S)
OR&IE 5100	Design of Manufacturing Systems (F)

Urban Infrastructure Management

CEE 6860	Civil Infrastructure Systems (S)
CEE 5940	Economic Methods for Engr. & Management (S)
CRP 5080	Introduction to Geographic Information Systems (S)
CRP 5520	Land Use Planning (F)
CRP 5530	Land Use Regulations (S)
CRP 6050	Urban Public Finance (F)
CRP 6320	Methods of Regional Science and Planning I (S)

⁴ Credit for seminars toward the MEng degree only count if the format of the seminar is “participatory” (i.e. requires more than attendance).

⁵ All courses you are taking should be listed whether or not they count in the MEng program. No more than 20 credits per semester (MEng and non-MEng) may be taken except by petition to the College Master of Engineering Committee.