NAME: ____________________________________      ADVISOR: ____________________________________

Student ID: _________________________________     Project Title: ____________________________________

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 5900</td>
<td>4</td>
<td>20__</td>
<td>20__</td>
</tr>
<tr>
<td>CEE 5910</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 5930</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 5970</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FINANCE/ACCOUNTING ELECTIVE (1 required)¹

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
</table>

### BEHAVIOR ELECTIVE (1 required)²

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
</table>

### SPECIALIZATION ELECTIVES (3 required)³

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
</table>

### SEMINARS (Indicate if Participatory or Non-Participatory)⁴

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
</table>

### ALL OTHER COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
</table>

Total Credits for all Fall & Spring Courses⁵  ______  ______

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

APPROVALS: Advisor: ___________________________ Date: ___________________________

EM Director: ___________________________ Date: ___________________________

******************************************************************************************

See Attached Notes. Updated proposals should identify the specific changes that are proposed and briefly give the reason for the change.

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

<table>
<thead>
<tr>
<th>Student’s Background</th>
<th>Suggested Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No background in accounting</td>
<td>NBA 5530 – Finance &amp; Accounting for Engineers (S)</td>
</tr>
<tr>
<td>Some accounting, but no engineering economics</td>
<td>ORIE 5150 – Economic Analysis of Engr. Systems (S)</td>
</tr>
<tr>
<td>Some background in both accounting and</td>
<td>NCC 5560 – Managerial Finance (F/S)</td>
</tr>
<tr>
<td>engineering economics</td>
<td></td>
</tr>
</tbody>
</table>

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, 3 credits)

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 be considered as technical specialization courses 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 5000 or 6000 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**

- SYSEN 5100 Applied Systems Engineering (F)
- SYSEN 5200 System Architecture, Behavior and Optimization (S)
- SYSEN 5300 Design and Operation of Reliable Systems (F)
- 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 (F)
- 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)
ChemE 6610  Air Pollution Control (S)
ChemE 6640  Energy Economics (F)
ChemE 6650  Energy Engineering (S)
ChemE 6660  Analysis of Sustainable Energy Systems (F)
ECE 4510  Electric Power Systems I (F)
ECE 4520  Electric Power Systems II (S)
MAE 5010  Future Energy Systems (S)
MAE 5020  Wind Power (F)

**Environmental Systems Management**

CEE 6200  Water Resource Systems Engineering (S)
CEE 6230  Environmental Quality Systems Engr. (F))
CEE 6530  Water Chemistry for Environmental Engineering (F)
CEE 6550  Transport, Mixing and Transformation in the Environment (F)
CEE 6560  Physical/Chemical Processes (F)
ChemE 6610  Air Pollution Control (S)

**Manufacturing Management**

NBA 6410  Logistics and Manufacturing Strategy (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 (S)

**Property Development and Construction**

CEE 5950  Construction Planning and Operations (F)
CEE 6750  Concrete Materials & Construction (S)
CRP 5320  Real Estate Development Process (F)
CRP 5330  Real Estate Marketing & Management (F)
CRP 5560  Design in Real Estate Development (S)
CRP 5530  Land Use Regulations (S)
HADM 5240  Real Estate Location Analysis (F)
HADM 6200  Principles of Real Estate (F,S)
HADM 6280  Real Estate Finance and Investments (F,S)
Systems Engineering

- SYSEN 5100 Applied Systems Engineering (F)
- SYSEN 5200 System Architecture, Behavior and Optimization (S)
- SYSEN 5300 Design and Operation of Reliable Systems (F)
- CEE 5290 Heuristic Methods for Optimization (F)
- M&AE 4780 Feedback Control Systems (F)
- CS 5150 Software Engineering (F)
- OR&IE 5100 Design of Manufacturing Systems (F)

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.