Curriculum Structure for Master of Engineering in EECE:
The list is dynamic, and will change from time to time. Students have the flexibility of choosing other classes with the permission of their academic advisor.

Core Courses (total of 6 courses)

1) Technical Core (choose 2, 3 credit classes)
   a) Transport Phenomena in Energy, Environmental and Chemical Engineering (E44 EECE 501, Fall)
   b) Aerosol Science and Technology (E44 EECE 504, Fall)
   c) Environmental Organic Chemistry (E44 EECE 531, Fall)
   d) Kinetics and Reaction Engineering Principles (E44 EECE 507, Spring)

2) Social, Legal, and Policy Aspects (choose 1, 3 credit class)
   a) Environmental Policy (L11 Econ 451, Fall)
   b) Sustainability Exchange: Community and University Practicums (E44 EECE 412, Fall)
   c) Interdisciplinary Environmental Clinic (L821 EnSt 539, Fall)

3) Mathematics (choose 1, 3 credit class)
   a) Mathematics of Modern Engineering I (E35 ESE 501, Fall)
   b) Designing Sustainable Social Policies & Programs: A Systems Dynamic Approach
      (S65 SWCD 5660, Fall)
   c) Statistical Computation (L24 Math 475, Fall)

4) Entrepreneurship or Leadership Training (choose 1, 3 credit class; or 2 mini-term classes, each 1.5 credit)
   a) Negotiation and Conflict Management (B66 OB 561, Fall; 1.5 credit)
   b) Leading Change (B66 OB 565, Fall, Spring; 1.5 credit)
   c) Management and Corporate Responsibility (B63 MGT 529; Fall, Spring, Summer; 1.5 credit)
   d) Managing the Innovation Process (B63 MGT 550B, Fall; 1.5 credit)
   e) Introduction to Entrepreneurship (B63 MGT 521, Fall, Spring; 3 credit)
   f) Basics of Bio-Entrepreneurship (B63 MGT 500U, Spring; 3 credit)

5) Project Management (choose 1, 3 credit class)
   a) Engineering Project Management (E44 EECE 597, Summer) or Alternate
   b) Engineering Project Management (E37 MEMS 5804, Fall, Spring) or Alternate

Note: It is optional for students to attend the EECE Seminars held on Fridays at 11 a.m.; however in order to receive the 1 unit of credit, a student must be officially registered (E44 EECE 509 Section 01). Up to 2 units of credits by attending EECE Seminars will be allowed towards the MEng degree.
Elective Courses (total of 4 courses)

Courses must be 400-level of higher and are selected with the approval of the academic advisor. Although some courses appear as both electives and core courses, any single course can only count toward one of the required course groups (i.e., no double counting of courses).

Students can sign up for up to 6 units of Independent Study (E44 EECE 500) with a professor. The independent study could be in the form of a practicum or a special project. Approval by the Advisor is necessary for independent study credits.

Pathways that are comprised of specific elective courses can be completed to result in a certificate of specialization. Available pathways are listed below.

**Advanced Energy Technologies (choose total of 4 courses)**

- **Group 1 (choose 2)**
  - a) Energy and Buildings (E44 EECE 591, Fall)
  - b) Combustion Phenomena (E44 EECE 512, Fall)
  - c) Bioenergy (E44 EECE 556, Spring)
  - d) Solar Energy Thermal Processes (E37 MEMS 5422, Summer)
  - e) Wind Energy Systems (E37 MEMS 5705, Spring)
  - f) Biomass Energy Systems and Engineering (E44 EECE 552, Spring)

- **Group 2 (choose 2)**
  - a) Kinetics and Reaction Engineering Principles (E44 EECE 507, Spring)
  - b) Sustainability Exchange: Community and University Practicums (E44 EECE 412, Fall)
  - c) Principle & Methods of Micro & Nanofabrication (E37 MEMS 5611 and same as E44 EECE 595, Spring)
  - d) Aerosol Science and Technology (E44 EECE 504, Fall)
  - e) Energy Conversion and Storage (EE44 EECE 413, Fall)

**Environmental Engineering Science (choose total of 4 courses)**

- **Group 1 (choose 1-2)**
  - a) Aerosol Science and Technology (E44 EECE 504, Fall)
  - b) Principle & Methods of Micro & Nanofabrication (E37 MEMS 3611 and same as E44 EECE 595, Spring)
  - c) Sustainable Air Quality (E44 EECE 518, Spring)

- **Group 2 (choose 1-2)**
  - a) Environmental Organic Chemistry (E44 EECE 531, Fall)
  - b) Aquatic Chemistry (E44 EECE 505, Fall)
  - c) Physical and Chemical Processes for Water Treatment (E44 EECE 533, Spring)
  - d) Computational Chemistry of Molecular and Nanoscale Systems (E44 EECE 536, Fall)

- **Group 3 (choose 1)**
  - a) Sustainability Exchange: Community and University Practicums (E44 EECE 412, Fall)
  - b) Environmental Policy (L11 Econ 451, Fall)
Technology for Environmental Public Health & International Development (choose total of 4 courses)

Group 1 (both courses required)
  a) Sustainability Exchange: Community and University Practicums (E44 EECE 412, Fall)
  b) Environmental Policy (L11 Econ 451, Fall)

Group 2: Environmental Engineering (choose 2)
  a) Aquatic Chemistry (E44 EECE 505, Fall)
  b) Aerosol Science and Technology (E44 EECE 504, Fall)
  c) Environmental Organic Chemistry (E44 EECE 531, Fall)
  d) Environmental Nanochemistry (E44 EECE 534, Spring)

Energy and Environmental Nanotechnology (choose total of 4 courses)

  a) Principle & Methods of Micro & Nanofabrication (E37 MEMS 5611 and same as E44 EECE 595, Spring)
  b) Aerosol Science and Technology (E44 EECE 504, Fall)
  c) Computational Chemistry of Molecular and Nanoscale Systems (E44 EECE 536, Fall)
  d) Sustainability Exchange: Community and University Practicums (E44 EECE 412, Fall)
  e) Biomass Energy Systems and Engineering (E44 EECE 552, Spring)
  f) Energy Conversion and Storage (EE44 EECE 413, Fall)

Energy and Environmental Management (need total of 12 credits)

  Energy and Environmental Engineering (2 courses, 3 credits each)
    a) Aerosol Science and Technology (E44 EECE 504, Fall)
    b) Environmental Organic Chemistry (E44 EECE 531, Fall)
    c) Energy and Buildings (E44 EECE 591, Fall)

  Business Related Classes (2 or more courses totaling 6 credits)
    a) Negotiation and Conflict Management (B66 OB 561, Fall; 1.5 credit)
    b) Leading Change (B66 OB 565, Fall, Spring; 1.5 credit)
    c) Management and Corporate Responsibility (B63 MGT 529; Fall, Spring, Summer; 1.5 credit)
    d) Managing the Innovation Process (B63 MGT 550B, Fall; 1.5 credit)
    e) Introduction to Entrepreneurship (B63 MGT 521, Fall, Spring; 3 credit)
    f) Basics of Bio-Entrepreneurship (B63 MGT 500U, Spring; 3 credit)
       (Course is crosslisted with home course of L41 5014 Biotech Industry Innovators, Spring; 3 credit)

  Interdisciplinary Environmental Clinic (L821 EnSt 539, Fall)

8/7/2015

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