### Masters in Energy Science, Technology, and Policy: pathways

Spring 2016 Schedule - v.5.4 NS 10/30/2015

**CHE, MSE, & MEG disciplinary concentrations.**

Spring 2016 schedule published on the preliminary course offerings list & times are based on the preliminary Spring 2016 schedule published October 2015. **BOLD Courses** are required for the CHE, MSE, & MEG disciplinary concentrations.

#### BREADTH (36 units)

- Grad-level CIT courses
- or with prior permission of advisor: pre-approved CMU grad classes

#### ENERGY CORE (24 units)

- 39-610 Energy Conversion & Supply (6)
- 39-611 Energy Demand & Utilization (6)
- 39-612 Energy Storage & Transportation (6)
- 39-613 Energy Policy & Economics (6)

**TR 9:30-11:20  WEH 5415**

- 39-611 A3 mini (Prof. Samaras)
- 39-612 A4 mini (Prof. Whitacre)

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**CONCENTRATION (36 units: bold/required, underlined/Spring’16)**

#### Chemical Engineering

- 06-665 Process Systems Modelling (12 MW4-30-6:20)
- 06-625 Chemical & Reactive Systems (12)
- 06-663 Analysis & Modeling Transport (12 MW3-30-11:20)
- 06-713 Math Techniques in Chem. Engr. (12)
- 06-702 Advanced Reaction Kinetics (12 MW4-30-6:20)
- 06-703 Advanced Fluid Dynamics (12)
- 06-704 Heat and Mass Transfer (12 MW1-30-1:20)
- 06-720 Advanced Process Systems Engr (12 MW10-11:50)

#### Civil & Environmental Engineering

- 12-704 Prob & Estimation Methods for Engr Systems (12)
- 12-706 Civil Systems Investment Planning & Pricing (12)
- 12-702 Data Management (12)
- 12-740 Data Acquisition (12)
- 12-743 Comp. Search & Decision in Civil Infrastructure (12)

#### Electrical & Computer Engineering

- 18-618 Smart Grids & Future Elec. Sys (12)
- 18-771 Linear Systems (12)
- 18-8198 Solar: Model, Analysis, Design (12)
- 18-879M Opt. in Energy Networks (12)

#### Engineering & Public Policy

- 19-612 Int. Life Cycle Assessment (12)
- 19-638 (18-618) Smart Grids & F. Elec. (12)
- 19-706 S.T. Sustainability & Innovation (9)
- 19-717 (12-712) Intro to Sustainable Engr (12)
- 19-740 (24-740) Combust & Air Pollut Ctrl (12)
- 19-882 (1881) S.T. Elec. Power/Low Carbon (12)

#### Materials Science and Engineering

- 27-798 Thermodynamics I (6)
- 27-705 Nanostructured Materials (12 TR3-30-3:20)
- 27-724 Materials Energy Storage (6A3 MW1-30-3:20)
- 27-728 Materials for Future Energy Sys (6)
- 27-729 Solid State Dev. for Energy Conv (6)
- 27-765 St. Materials & Society (6)
- 27-770 Electr., Mag. & Optical Prop. (12 TR3-30-3:20)

#### Mechanical Engineering

- 24-722 Energy System Modelling (12)
- 24-616 Tribology (12)
- 24-718 Fluid Dynamics (12 MW11:30-1:20)
- 24-721 Advanced Thermodynamics (12)
- 24-731/733 Cond./Radi. Heat Trans (6/6)
- 24-736 Two-Phase Flow & Heat Transfer (12)
- 24-642 Fuel Cell Systems (12)
- 24-629 S.T. Direct Solar & Thermal Energy Conv (12)

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**4xx-5xx prerequisite**

- CMU grad coursework with prior approval

- upper level (4xx-5xx) undergrad coursework can be applied if prerequisite for grad course

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**Note:**

- inter-disciplinary options

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**Coursework pathways:**

- Energy Science Technology & Policy
- Carnegie Mellon University
- College of Engineering