

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

**Spring 2020 Schedule** -- v1.0 NS 10/28/2019  
Underlined Courses are available based on the preliminary published schedule information for Spring 2020. **BOLD Courses** are required for the CHE, MSE, & MEG disciplinary concentrations.

## ENERGY CORE (24 units)

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

- POS 151 & Wean 5403 (TR 9:30-11:20)
- 39-611 A3-mini (Prof. Samaras)
- 39-612 A4-mini (Prof. Muller)

## CONCENTRATION (36 units: bold/required, underlined/Spring '20)

### Chemical Engineering

<b>06-665 Process Systems Modeling (12)</b> MWF 8:30-10:20	06-705 Adv. Chem. Eng. Thermo (12)
06-623 Math. Mod. Chem.E. Process(12)	<b>06-702 Advanced Reaction Kinetics(12)</b> MW 12:30-2:20
06-625 Chemical & Reactive Systems (12)	06-703 Advanced Fluid Dynamics (12)
<b>06-663 Analysis &amp; Modeling Trans. Phenom (12)</b> MW 4:30-6:20	<b>06-704 Adv Heat &amp; Mass Transfer (12)</b> MW 2:30-4:20
06-713 Math Techniques in Chem. Engr.(12)	<b>06-720 Adv Process Systems Engr(12)</b> MW 10:30-12:20

### Civil & Environmental Engineering

12-704 Prob & Est Methods for Engr Sys (12)	12-745 Adv Infra Systems Project (12)
12-706 Civil Systems Invest. Plan & Pricing (12)	12-747 Sustainable Buildings (6)
12-712 Intro to Sustainable Engineering (12)	<b>12-714 Environ. Life Cycle Asst. (12)</b> MW 1:30-2:50
12-740 Data Acquisition (6)	<b>12-749 S.T. Climate Change Adapt. (6A4)</b> TR 12-1:20
12-741 Data Management (6)	<b>12-750 Infrastructure Management (12)</b> TR 3-4:20
12-751/651 Air Quality Engr. (12)	<b>12-752ST Data Drv Bldg Energy Mang(6A4)</b> MW12-1:20
<b>12-761ST Sense &amp; Data Mine Smart Structures (12)</b> TR4:30-5:50	12-766 S.T. Climate Change Sci & Adapt. (12)

### Electrical & Computer Engineering

18-418 El. Energy Processing: Fundamentals & App. (12)ug	18-631 Intro to Info Security (12)
18-618 Smart Grids & F. El. Eng. Sys (12)	18-771 Linear Systems (12)
18-743 Energy Aware Computing (12)	18-777 Complex Large-Scale Dynam Sys(12)
18-649 Distr. Embedded Systems (12)	<b>18-879M Optim in Energy Networks (12)</b> TR 4:30-5:50
18-730 Intro Computer Security (12)	18-879S Networked Control Systems (12)
<b>18-731 Network Security (12)</b> MW 12:30-2:20	<b>18-875 Econ &amp; Engr Electric Energy Sys (12)</b> TR 1:30-2:50
18-882A S.T. Power Electronics (12)	

### Engineering & Public Policy

19-881 Sem. Elec. Markt Restruct (6)	<b>19-882 Sem. Low Carbon Elec. Power (6A4)</b> TR 3:30-5:20
<b>19-617(12-750) Infrastructure Mgmt (12)</b> TR 3-4:20	19-626 Climate Science & Policy (12)
19-624 S.T. Emerging Energy Policy (12)	19-653 (24-640) S.T. Climate Change Mit (12)
<b>19-625 Sust Energy for Dev World(12)</b> MW 10:30-11:50	19-656 S.T. CO2 Capture & Sequestration (6A3)
19-683 S.T. Sci, Tech, & Innov. Policy (6)	19-655 S.T. Climate Change Sci & Adapt. (12)
19-696 S.T. Sus Dev & Innovation (9)	<b>19-714 (12-714) Env. Life Cycle Assmt. (12)</b> MW 1:30-2:50
19-717 (12-712) Intro Sustainable Engr (12)	19-724 (27-724) Materials Energy Storage (6)
19-736 (27-726) Energy & Materials in Policy (6)	<b>19-739(18-875) Engr&amp;Econ Elec Eng Sys(12)</b> TR 1:30-2:50
19-740 (24-740) Cmbstn & Air Pollut Ctrl (12)	19-751 (12-751) Air Quality Engr. (12)
19-638 (18-618) Smart Grids & F. Elec. (12)	19-424 (24-424) Energy & Environment (9ug)
19-655 S.T. Design, Innov & Strat (12)	19-472 Fund. Electric Pwr Sys (12ug)

### Materials Science and Engineering

<b>27-705 Nanostructured Mat. (12)</b> TR 1:30-3:20	27-752 Fnd. of Semicond. Nanostructures (12)
27-718 Soft Materials (12)	27-765 Special Topics: Materials & Society (6)
27-721 Processing Design (6)	27-766 Diffusions in Materials (6)
27-724 Materials for Energy Storage (6)	27-788 Defects in Materials (6)
27-725 Materials in Nuclear Systems(6A3)	27-794 Chem. Stab. Materials Extr. Env. (6)
<b>27-727 Mech Behavior in Extreme Env(6A4)</b> MW1:30-3:20	27-796 Structure of Materials
27-728 Materials for Future Energy Sys (6)	<b>27-798 Thermodynamics I (6A1)</b>
27-729 Solid State Dev. Energy Conv.(6)	<b>27-799 Thermodynamics II (6A2)</b>
<b>27-770 Electronic,Magnetic&amp;Optical Prop(12)</b> MW11:30-1:20	27-722 Basics &Apps Power Magnetic Devices

### Mechanical Engineering

<b>24-722 Energy System Modeling (12)</b>	24-640 Climate Change Mitigation (12)
24-616 Tribology-Fric. Lubric. & Wear (12)	24-711 Fluid Dynamics I (12)
<b>24-628 Energy Trans&amp;Conv Nano-scale (12)</b> MW 11:30-1:20	24-718 Computational Fluid Dynamics (12)
24-721 Advanced Thermodynamics (12)	24-730 Advanced Heat Transfer (12)
24-731/733 Conductive/Radiative Heat Transfer (6)	24-736 Two-Phase Flow & Heat Transfer
24-740 Combustion & Air Pollution (12)	<b>24-642 Fuel Cell Systems (12)</b> MW 9:30-11:20
24-643 S.T. Electrochem. Energy Storage Sys (12)	24-629 Dir Solar & Therm Energy Conv (12)
24-618 Comp. Trans Phen (12)MW 4:30-6:20	

## BREADTH ELECTIVES

**EST&P and EST&P-AS Degrees:**  
**36 units** of relevant grad-level engineering courses,  
 including up to 18 units of pre-approved energy related courses from outside the college of engineering

M.S. EST&P

**also for the EST&P-AS Degree (3 semesters):**  
 additional **24 units** of faculty-supervised master's project, independent study, internship, and/or specific pre-approved engineering project courses

M.S. EST&P-AS (Applied Studies)

