Environmental Engineering – Air Quality Focus

In order to graduate with a Master of Science degree in Environmental Engineering with an Air Quality Focus, the student has to successfully complete 21+ cr hr of courses plus 10 cr hr of research including the following:

Air Quality requirement – choose both of the following:
- ENVE6064: Air Resources Management (Fall, 3 cr hr)
- ENVE6022C: Atmospheric Chemistry and Modeling (Fall odd years, 3 cr hr)

Hydrosystems requirement – choose one of the following:
- CVE6090: Engineering Hydrology (Spring, 3 cr hr)
- ENVE6026: Environmental Hydraulic Systems Analysis (Fall, 3 cr hr)

Water Quality requirement – choose one of the following:
- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)

Math requirement – choose the following:
- ENVE6094: Probability/Estimation Methods for Engr Systems (Spring, 3 cr hr)

Lab requirement – choose the following:
- ENVE6058: Environmental Instrumentation (Spring, 3 cr hr)

Seminar requirement – choose the following:
- ENVE7005: Safety, Resources and Facilities (Fall, 1/0 cr hr)
- 2x ENVE6076: Advanced Graduate Seminar (Fall and Spring, 1/0 cr hr)

Focus Area Electives - choose one of the following with advisor approval:
- ENVE6071C: Aerosol Science, Engineering and Control (Fall even years, 4 cr hr)
- ENVE6075: Air Quality Modeling (Spring, 3 cr hr)
- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)
- GEOG6071C or PLAN6071: Introduction to GIS (Fall, 3 cr hr)
- Or any appropriate ≥6000 level course with advisor approval

Research Credit Hours – register for 10 cr hr under advisor’s section of ENVE8099

Students pursuing the PhD degree need a minimum of 12 cr hr of course work beyond the MS degree and 48 cr hr research (total 60 cr hr). In contrast to the tightly defined MS program, the PhD track has greater flexibility. PhD students should consult with their faculty advisor to select a sequence of courses that will complement their research area and satisfy any requirements imposed.
by the PhD qualifying exam committee. The **Ph.D. qualifying exam** for **Environmental Engineering** with an **Air Quality Focus** will require completion of test questions from ENVE6094 and ENVE6064 and one of the following with advisor approval: ENVE6047, ENVE6053, ENVE6071C or ENVE6022C

**Environmental Science – Air Quality Focus**

In order to graduate with a **Master of Science** degree in **Environmental Science** with an **Air Quality Focus**, the student has to successfully complete 21+ cr hr of courses plus 10 cr hr of research including the following:

**Air Quality requirement – choose both of the following:**

- ENVE6064: Air Resources Management (Fall, 3 cr hr)
- ENVE6022C: Atmospheric Chemistry and Modeling (Fall odd years, 3 cr hr)

**Hydrosystems requirement – choose one of the following:**

- CVE6090: Engineering Hydrology (Spring, 3 cr hr)
- ENVE6026: Environmental Hydraulic Systems Analysis (Fall, 3 cr hr)

**Water Quality requirement – choose one of the following:**

- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)

**Math requirement – choose one of the following:**

- ENVE6094: Probability/Estimation Methods for Engr Systems (Spring, 3 cr hr)
- BE7022: Intro to Biostatistics (Fall, 3 cr hr)

**Lab requirement – choose the following:**

- ENVE6058: Environmental Instrumentation (Spring, 3 cr hr)

**Seminar requirement – choose the following:**

- ENVE7005: Safety, Resources and Facilities (Fall, 1/0 cr hr)
- 2x ENVE6076: Advanced Graduate Seminar (Fall and Spring, 1/0 cr hr)

**Focus Area Electives - choose one of the following with advisor approval:**

- ENVE6071C: Aerosol Science, Engineering and Control (Fall even years, 4 cr hr)
- ENVE6075: Air Quality Modeling (Spring, 3 cr hr)
- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)
- GEOG6071C or PLAN6071: Introduction to GIS (Fall, 3 cr hr)

**Or any appropriate ≥6000 level course with advisor approval**
Research Credit Hours – register for 10 cr hr under advisor’s section of ENVE8099

Students pursuing the PhD degree need a minimum of 12 cr hr of course work beyond the MS degree and 48 cr hr research (total 60 cr hr). In contrast to the tightly defined MS program, the PhD track has greater flexibility. PhD students should consult with their faculty advisor to select a sequence of courses that will complement their research area and satisfy any requirements imposed by the PhD qualifying exam committee. The PhD qualifying exam for Environmental Science with an Air Quality Focus will require completion of test questions from ENVE6094 (or BE7022) and ENVE6064 and one of the following with advisor approval: ENVE6047, ENVE6053, ENVE6071C or ENVE6022C.

Environmental Engineering or Science – Hydrosystems Focus

In order to graduate with a Master of Science degree in Environmental Engineering or Environmental Science with a Hydrosystems Focus, the student has to successfully complete 21+ cr hr of courses plus 10 cr hr of research including the following:

Hydrosystems requirement – choose both of the following:
- CVE6090: Engineering Hydrology (Spring, 3 cr hr)
- ENVE6026: Environmental Hydraulic Systems Analysis (Fall, 3 cr hr)

Air Quality requirement – choose the following:
- ENVE6064: Air Resources Management (Fall, 3 cr hr)

Water Quality requirement – choose one of the following:
- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)

Math requirement – choose the following:
- ENVE6094: Probability/Estimation Methods for Engr Systems (Spring, 3 cr hr)

Lab requirement – choose the following:
- GEOG6071C or PLAN6071: Introduction to GIS (Fall, 3 cr hr)

Seminar requirement – choose the following:
- ENVE7005: Safety, Resources and Facilities (Fall, 1/0 cr hr)
- 2x ENVE6076: Advanced Graduate Seminar (Fall and Spring, 1/0 cr hr)

Focus Area Electives - choose one of the following with advisor approval:
- ENVE6050: Infrastructure System Planning Uncertainty (Fall, 3 cr hr)
- STAT6041: Time Series Analysis (Fall, 3 cr hr)
- STAT6043: Applied Bayesian Statistics (Spring, 3 cr hr)

Or any appropriate ≥6000 level course with advisor approval
Research Credit Hours – register for 10 cr hr under advisor’s section of ENVE8099

Students pursuing the **PhD degree** need a minimum of **12 cr hr** of course work beyond the MS degree and **48 cr hr** research (total **60 cr hr**). In contrast to the tightly defined MS program, the PhD track has greater flexibility. PhD students should consult with their faculty advisor to select a sequence of courses that will complement their research area and satisfy any requirements imposed by the PhD qualifying exam committee. The **Ph.D. qualifying exam** for **Environmental Engineering** with an **Hydrosystems Focus** will require completion of test questions from ENVE6026, ENVE6094 and CVE6090.

**Environmental Engineering – Water Quality Focus**

In order to graduate with a **Master of Science** degree in **Environmental Engineering** with an **Water Quality Focus**, the student has to successfully complete **22+ cr hr** of courses plus **10 cr hr** of research including the following:

**Water Quality requirement – choose both of the following:**

- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6053: Physical Principles of Environmental Systems (Fall, 3 cr hr)

**Air Quality requirement – choose the following:**

- ENVE6064: Air Resources Management (Fall, 3 cr hr)

**Hydrosystems requirement – choose one of the following:**

- CVE6090: Engineering Hydrology (Spring, 3 cr hr)
- ENVE6026: Environmental Hydraulic Systems Analysis (Fall, 3 cr hr)

**Math requirement – choose the following:**

- ENVE6094: Probability/Estimation Methods for Engr Systems (Spring, 3 cr hr)

**Lab requirement – choose the following:**

- ENVE6058: Environmental Instrumentation (Spring, 3 cr hr)

**Seminar requirement – choose the following:**

- ENVE7005: Safety, Resources and Facilities (Fall, 1/0 cr hr)
- 2x ENVE6076: Advanced Graduate Seminar (Fall and Spring, 1/0 cr hr)

**Focus Area Electives - choose one of the following with advisor approval:**

- ENVE6054: Phys/Chem Processes for Water Quality Control (Spring, 3 cr hr)
- ENVE6055: Biological Processes for Water Quality Control (Spring, 3 cr hr)

Or any appropriate ≥6000 level course with advisor approval

Research Credit Hours – register for 10 cr hr under advisor’s section of ENVE8099

Students pursuing the **PhD degree** need a minimum of **12 cr hr** of course work beyond the MS degree and **48 cr hr** research (total **60 cr hr**). In contrast to the tightly defined MS program, the PhD track has greater flexibility. PhD students should consult with their faculty advisor to select a
sequence of courses that will complement their research area and satisfy any requirements imposed by the PhD qualifying exam committee. The **Ph.D. qualifying exam** for **Environmental Engineering** with an **Water Quality Focus** will require completion of test questions from ENVE6047, ENVE6053, and ENVE6094.

**Environmental Science – Water Quality Focus**

In order to graduate with a **Master of Science** degree in **Environmental Engineering** with an **Water Quality Focus**, the student has to successfully complete 22+ cr hr of courses plus 10 cr hr of research including the following:

**Water Quality requirement – chose both of the following:**
- ENVE6047: Chemical Principles of Environmental Systems (Fall, 4 cr hr)
- ENVE6000: Applied Biology for Engineers (Fall, 3 cr hr)

**Air Quality requirement – choose the following:**
- ENVE6064: Air Resources Management (Fall, 3 cr hr)

**Hydrosystems requirement – choose one of the following:**
- CVE6090: Engineering Hydrology (Spring, 3 cr hr)
- ENVE6026: Environmental Hydraulic Systems Analysis (Fall, 3 cr hr)

**Math requirement – choose one of the following:**
- ENVE6094: Probability/Estimation Methods for Engr Systems (Spring, 3 cr hr)
- BE7033: Intro to Biostatistics (Fall, 3 cr hr)

**Lab requirement – choose the following:**
- ENVE6058: Environmental Instrumentation (Spring, 3 cr hr)

**Seminar requirement – choose the following:**
- ENVE7005: Safety, Resources and Facilities (Fall, 1/0 cr hr)
- 2x ENVE6076: Advanced Graduate Seminar (Fall and Spring, 1/0 cr hr)

**Focus Area Electives - choose one of the following with advisor approval:**
- ENVE6046: Biological/Microbial Principles of Env Systems (Spring, 4 cr hr)
- ENVE6054: Phys/Chem Processes for Water Quality Control (Spring, 3 cr hr)*
- ENVE6055: Biological Processes for Water Quality Control (Spring, 3 cr hr)

*strongly recommended prerequisite is ENVE6053: Physical Principles of Environmental Systems

**Research Credit Hours** – register for 10 cr hr under advisor’s section of ENVE8099

Students pursuing the **PhD degree** need a minimum of **12 cr hr** of course work beyond the MS degree and **48 cr hr** research (total 60 cr hr). In contrast to the tightly defined MS program, the PhD
track has greater flexibility. PhD students should consult with their faculty advisor to select a sequence of courses that will complement their research area and satisfy any requirements imposed by the PhD qualifying exam committee. The **Ph.D. qualifying exam** for **Environmental Science** with an **Water Quality Focus** will require completion of test questions from ENVE6047, ENVE6000, and ENVE6094 (or BE7022).

mjk
07/25/18