



#### **A-4 MASTER OF SCIENCE, ENVIRONMENTAL QUALITY SYSEMS MANAGEMENT**

The curriculum consists of a 12 course, 36 credit, three semester program designed as an "integrated network" developed after extensive consultation with diverse focus groups of prospective employers, organizational leaders and environmental practitioners. A distinguishing feature of the program is the use of a team-based, work-related, project of significant result (the environmental quality systems project) which replaces the conventional master's thesis. In order for a student to graduate, the projects' supervisor or "champion" must validate and formally attest to the school that results have been achieved. In the tradition akin to a traditional oral defense of a thesis, students publicly defend their results before an audience of faculty and invited experts.

In the contemporary manner of programs for experienced, working adult professionals, The School emphasizes and monitors student study teams which routinely spend at least as much time outside of class as they do in class. In addition, each student is expected to spend approximately 400 out-of-class hours on the project, and will be monitored by designated faculty academic advisors.

The program is offered only in cohort group format, where courses are taken in sequential order, and the class members remain as a group in the program from start to finish. Class assignments will be both individual and team based, with a progression from individual to team requirements as the program progresses.



The purpose of the Master of Science in Environmental Quality Systems Management is to:

- to provide students, particularly working adults and other non-traditional students, with a business-related graduate education that will empower them to make rapid contributions to private, public and military sector organizations;
- to engage students in a rigorous, exciting, challenging, theoretical and practical learning experience in a specialized curriculum that is uniquely centered in both management sciences and environmental systems, predicated on a teamwork approach, and incorporating a business project that requires measurable results;
- to employ highly qualified faculty who possess quality-related work experience as well as appropriate educational credentials;
- to provide students with the resources needed to interact with others clearly and effectively;
- to impart and demonstrate to students the aligned relationship of a management quality systems theme to ethical behavior;
- to expose students to the actual and hypothetical situations, in policy and practice, that future environmental quality leaders are likely to encounter in the workplace.

#### **SEMESTER ONE**

##### **MGT501 – Environmental Quality Systems (3 credits)**

This course explores the issues in Environmental Quality Systems, and begins to set the frame work within which we operate. An examination of the history of Environmental Systems, and an exploration of key concepts, provides information to establish a baseline in this field. Basic concepts are introduced, as well as a selection of the most influential events on the environment, with their impact. We examine the



perspective of contemporary authors in the field as well as the platform they have chosen to support their assertions. The challenges of leading change are examined.

### **EQM547 – Continuous Improvement in Environment Quality (3 credits)**

Traditional environmental quality systems derive from a defect-management approach that waits until an incident and then repairs the damage. Using QSM principles, EQM 547 presents a continuous improvement system that includes NGS-emphasized elements, process diagrams and activity-based-metrics. Using our unique approach to Environmental Impact Mapping, students will establish a picture of the current state, and identify process inputs and controlling factors in their target environment.

### **EQM640 - Environmental Policy Analysis (3 credits)**

The policies and strategic framework which are exhibited in the target systems are critical to understanding its success, and the challenges of change. Students analyze the strategic and tactical framework in their potential project system. Generic models are compared to target policies, as is the connection to the current state.

### **EQM550 – Masters Environmental Quality Project Gate One (3 credits)**

This course supports the students integration of the principles and best practices discussed in previous courses into an intellectual whole. Specialized faculty support this course as a milestone for launching the balance of the student's learning. Under the guidance of faculty and a field supervisory team, students will select a champion, create a guiding coalition, and develop project outcome measures, thereby defining their project. Teams of up to three students are formed in this process to mutually support the successful execution of their project.

## **SEMESTER TWO**

### **EQM 554 - Case Studies in Environmental Quality Management (3 credits)**

This course develops the students understanding of the ethical, legal and social issues inherent in Environmental Quality Systems. Students will understand the various cultural challenges to creating change, and that which holds the current state in place. Topics include Biophilia and the Gaia theory, issues in Biodiversity and Animal Rights, the challenges of Environmental Economics, accounting for Externalities, and the effect of technology.

### **EQM 678 – Government Role in Environmental Regulation (3 credits)**

The basic framework of local, state and federal regulation is examined, with students also focusing on the project specific environment they must operate within. The applicable roles of local, state, and federal governments are discussed through examination of documents; on-line research is required. Thematic questions raised include: overlapping and conflicting responsibility; legal recourse to citizens and public-interest groups; and system implications.

### **EQM 576 – The Economics of Sustainable Development (3 credits)**

This course addresses issues of environmental and resource economics, and focuses on interaction between markets and environment; policy issues related to pricing; property rights in industry; and the economics of renewable resources. As potential improvements are developing, it is critical to create a framework that does more good than harm. Understanding sustainability, and applying it to the target process, is the focus.



### **EQM 562 - Masters Environmental Quality Project Gate Two (3 credits)**

The Gate Two course requires students to demonstrate that they have applied their learning to the improvement of a designated, work-related project. Under the guidance of faculty and a field supervisory team, student projects must demonstrate measurable process improvement. At this stage, most projects will be experiencing the effect of the process changes undertaken by student teams. Champion approval is required before student projects are considered complete and successful. This Gate ensures that students are effectively on track for successful completion of their project.

### **SEMESTER THREE**

#### **QSM 541 – Advanced Environmental Data Collection and Analysis (3 credits)**

The earlier current state analysis of systems, and the creation of measures of success, provided a framework in which to measure the project. The subsequent system improvement must be measured, and the data it produces should be analyzed to remove bias and confirm trends. Intermediate statistical analysis is applied to the key process outputs.

#### **QSM 578 - Financial Analysis & Budgeting (3 credits)**

This course explores the relationship between accurate financial analysis and the positive or negative impact on budgeting. Case studies are utilized to illustrate how decision-making, based on financial analysis, leads to allocation of resources. The target organization's financial system, and its affect on the project, is examined by students. Concepts of environmental economics are contrasted with GAAP principals. Students learn how to best define the value of the project they have undertaken.

#### **EQM 568 – Topics in EQM Field Experience (3 credits)**

The student's observations on the process and policy implications of the issues they faced, and the changes they have made, are compared to other organizational standards and practices. Students are invited to make policy recommendations, based on case studies illustrating alternative approaches, and the potential applicability to their project and system.

#### **EQM 562 - Masters Environmental Quality Project Gate Three - Capstone (3 credits)**

The program concludes with your demonstration of the improvements you've made, and the techniques you used to reach your goals. The Gate Three course requires students to confirm they have applied their learning and made the required improvement to their project. Under the guidance of faculty and a field supervisory team, student projects must demonstrate measurable process improvement has occurred, and system changes are in place to control the new process. Champion approval is required before student projects are considered complete and successful. This Gate ensures that students have met the requirements of this degree program, based on successful completion of their project.

~

In keeping with the NGS philosophy to continuously improve our program, faculty teams work with Academic Affairs to collaborate and enhance course flow and content on a systematic basis. Updated course program flow is noted on-line within each cohort academic calendar.