

# DUAL M.S. ENVIRONMENTAL SCIENCE/MASTER OF BUSINESS ADMINISTRATION

The mission of the Dual Degree MS in Environmental Science/MBA program is to educate working engineers and scientists in the engineering and business disciplines that will make them leaders of highly complex technical endeavors within their sponsoring organizations.

The dual degree MS/MBA program will confer two degrees upon its graduates: an MBA and an MS in Environmental Science. Pursuing the dual degree program saves the student several courses compared to pursuing the two degrees separately.

The dual degree MS in Environmental Science/MBA program is designed to be completed in approximately three years. Typically, the Environmental Science classes are completed first, followed by taking the required classes in the MBA program.

## Learning Outcomes

### For the Environmental Science M.S.

1. Apply scientific, mathematical, and sustainability principles to analyze and develop solutions to problems in environmental science and engineering;
2. Critically assess, evaluate, and understand sustainability, ethics, and social justice in environmental science and engineering; and
3. Effectively communicate scientific and engineering principles related to the environment and sustainability.

### For the M.B.A.

- Graduates will possess the knowledge and skills to be able to apply key business concepts in organizational settings.
- Graduates will possess the knowledge and skills to manage in a global economy
- Graduates will possess critical thinking skills and the ability to integrate concepts.
- Graduates will have the ability to communicate effectively.
- Graduates will have the knowledge and skills to function effectively as members, managers, and leaders in the organizations in which they are employed.
- Graduates will be able to incorporate ethical reasoning, social responsibility, and sustainability in making decisions in their organizations.

## Admissions

Both the MBA Program in the College of Business Administration and the MS in Environmental Science Program in the Frank R. Seaver College of Science and Engineering must accept students applying to the dual degree program for admission. Prospective dual degree students should apply first to the MS in Environmental Science degree program. After receiving admission to the MS in Environmental Science degree program and completing 12 semester hours towards the MS degree, students interested in the MS/MBA Dual Degree program should email Katie Lorick (Katie.Lorick@lmu.edu) for admission to the MBA portion of the Dual Degree. Eligibility for the dual degree program is based upon good academic standing (minimum GPA 3.0) in the MS in Environmental

Science program and approval from their respective Seaver College academic advisor. The preferred start term for the MBA portion of the Dual Degree program is the fall term.

The MS in Environmental Science degree program application is online at <https://graduatestudies.lmu.edu/apply> (<https://graduatestudies.lmu.edu/apply/>). Applicants must submit:

- Official transcripts from all colleges and universities attended
- Statement of Intent (approximately 1.5 pages) describing the candidate's background, career goals, and interest in the program
- Two letters of recommendation
- Resume
- Essay discussing how the two degrees fit into applicant's career development

## Graduation Requirements

Students enrolled in the Dual Degree MS/MBA Program are jointly advised by their academic advisor for Environmental Science in Seaver College and the MBA Program Director in the College of Business Administration. It is recommended that incoming students take 12 semester hours of Environmental Science courses per fall and spring semester and complete the MS in year one of the dual-degree program, then begin the MBA curriculum in year two.

Dual degree students will take a total of 24 semester hours of Environmental Science courses and 36 semester hours of MBA courses. 15 semester hours from the Environmental Science courses will also count towards the emphasis/concentration requirement for the MBA degree. 6 semester hours of the MBA courses that are taken as part of the MBA coursework will also count toward the MS in Environmental Science. Separately, the MS degree requires 30 semester hours and the MBA degree requires 51 semester hours, for a total of 81 semester hours. The Dual Degree program lessens the load by 21 (15+6) semester hours.

## Suggested Curriculum Flowchart for the MS in Environmental Science/MBA Dual Degree Program

| Code                                     | Title  | Semester Hours |
|--|--|----------------|
| <b>Year 1 (Summer, Fall, and Spring)</b> |  |                |
| <b>Core Requirements</b>                 |  |                |
| CIVL 601                                 | Sustainable Water Quality and Resources                                      | 3              |
| CIVL 605                                 | Aquatic Chemistry  | 3              |
| ENVS 606                                 | Applied Environmental Microbiology   | 3              |
| Select one of the following:             |  | 0              |
| <b>Thesis Students</b>                   |  |                |
| ENVS 696                                 | Thesis Defense   |                |
| CIVL 696                                 | Thesis Defense   |                |
| <b>Non-Thesis Students</b>               |  |                |
| ENVS 690                                 | Comprehensive Oral Exam  |                |
| CIVL 690                                 | Comprehensive Oral Exam  |                |
| <b>Electives</b>                         |  |                |
| ENVS 607                                 | Environmental Engineering and Science Lab                                    |                |
| ENVS 651                                 | Remote Sensing with Civil Engineering and Environmental Science Applications |                |

|          |  |  |
|----------|--|--|
| ENVS 652 | Spatial Data Analysis and Geographical Information Systems |  |
| ENVS 680 | Engineering Geology  |  |
| ENVS 681 | Ecosystem Services in Urban Landscapes                     |  |
| ENVS 682 | Urban Coasts: Habitats, Stressors, and Resilience          |  |
| ENVS 683 | Environmental Toxicology and Health Risk                   |  |
| ENVS 684 | Climate Change and Impacts                                 |  |
| ENVS 686 | Climate Change Mitigation                                  |  |
| ENVS 687 | Climate Change Adaptation and Resilience                   |  |
| ENVS 688 | Environmental Health                                       |  |
| ENVS 689 | Sustainability, Health, and Equity                         |  |
| CIVL 608 | Contaminant Fate, Transport, and Remediation               |  |
| CIVL 617 | Water Treatment Processes                                  |  |
| CIVL 618 | Water Reuse and Desalination                               |  |
| CIVL 619 | Advanced Integrated Water Treatment Systems                |  |
| CIVL 625 | Applied Fluid Mechanics                                    |  |
| CIVL 626 | Surface Water Hydrology                                    |  |
| CIVL 627 | Urban Water Systems and Stormwater Management              |  |
| CIVL 629 | Groundwater Contaminant Transport and Remediation          |  |
| CIVL 637 | Building Information Modeling                              |  |
| CIVL 653 | Modeling Environmental and Water Resources Systems         |  |
| CIVL 671 | Air Quality, Control, and Management                       |  |
| CIVL 672 | Sustainable Waste Management                               |  |
| CIVL 673 | Economics of Water and the Environment                     |  |
| CIVL 674 | Sustainable Engineering                                    |  |
| CIVL 636 | Nonlinear Structural Analysis                              |  |
| CIVL 639 | Design of Masonry Structures                               |  |
| CIVL 655 | Computational Fluid Dynamics                               |  |
| CIVL 657 | Finite Element Methods                                     |  |
| CIVL 675 | Renewable Energy Systems                                   |  |
| CIVL 676 | Project Management   |  |
| CIVL 678 | Research in Civil Engineering & Environmental Science      |  |

Total MS Degree Requirement: 24 semester hours + 6 semester hours from MBA, satisfying the MS degree requirement of 30 semester hours

**Subtotal** 9

## Year 2

### Fall Semester

|           |   |     |
|-----------|---|-----|
| MBAW 6400 | MBA Orientation                             | 2   |
| MBAA 6020 | Financial and Managerial Accounting         | 3   |
| MBAA 6030 | Global Economic Structures and Systems      | 1.5 |
| MBAA 6040 | Managing Markets and Customer Relationships | 3   |
| MBAA 6050 | Managing Operations                         | 1.5 |
| MBAA 6090 | Managing Information Systems                | 3   |

### Spring Semester

|           |                                   |   |
|-----------|-----------------------------------|---|
| MBAA 6010 | Managing People and Organizations | 3 |
| MBAA 6060 | Strategic Management              | 3 |
| MBAA 6070 | Managing Financial Resources      | 3 |
| MBAA 6080 | Data, Models, and Decisions       | 3 |

|  |  |           |
|--|--|-----------|
| MBAW 6402  | The Elements of Becoming A Strategic Leader          | 0         |
| <i>Summer Session</i>  |  |           |
| Business & Society Core  |  | 3         |
| MBA Elective   |  | 3         |
| <i>Spring Semester</i>   |  |           |
| MBAA 6100  | Managing International Business                      | 3         |
| MBAW 6307  | Management Leadership Workshop: Planning Your Future | 0         |
| <i>Summer Session</i>  |  |           |
| MBAI 691   | Comparative Management Systems (CMS)                 | 3         |
| Total MBA Degree Requirement: 36 semester hours + 15 semester hours from MS in Environmental Science, satisfying the MBA degree requirement of 51 semester hours |  |           |
| <b>Subtotal</b>  |  | <b>38</b> |
| <b>Total Semester Hours</b>  |  | <b>47</b> |

### Notes:

- Students may enroll in up to two CIVL 695 Master Thesis
- Students may enroll in up to one CIVL 699 Independent Studies/ENVS 699 Independent Studies with consent of academic advisor (up to 3 semester hours)
- Students may enroll in up to one 500- or 600-level course in another graduate program with consent of academic advisor

The Graduate Program Director for the MS in Environmental Science has the discretion to substitute other Environmental Science coursework based on availability and Frank R. Seaver College of Science and Engineering Dean's office approval.

Note: When the course requirements outlined above are completed, the student should submit an application for degree to be awarded both the MBA and the MS in Environmental Science.