

NRM Curriculum of Study
CIVIL ENGINEERING

Graduate Program: Natural Resources Management
Specialty Area (Option): Pollution Control
Participating Academic Unit: Civil Engineering
Contact: Dr. G. Padmanabhan, 701-231-7043
 Email: g.padmanabhan@ndsu.edu

Requirements

- **Background:**
 - A bachelor's degree having major emphasis in physical sciences (engineering background desired).
 - Participating academic unit may require applicants to submit GRE scores. Check with the Civil Engineering department.
- **Coursework:** 30 semester units (minimum). Complete *Master's Degree Plan of Study and Supervisory Committee* form no later than the first week of second semester.
- **Oral exam:** Student must be enrolled during the semester of the oral examination (usually the last semester.)
- **Additional:** Refer to the section titled *Degree Requirements Checklist* in these Guidelines (pages 5-6).

Required Units		Approved Courses/Disciplines*	Units	Approved Courses/Disciplines*	Units
Specialty Area	18	ABEN 664 Resource Conservation and Irrigation Engr	3	GEOL 612 Geomorphology	3
		ABEN 765 Small Watershed Hydrology	3	GEOL 614 Hydrogeology	3
		CE 672 Solid Waste Management	3	GEOL 628 Geochemistry	3
		CE 677 Applied Hydrology	3	GEOG 655 Introduction to Geographic Information Systems	3
		CE 678 Water Quality Management	3	SOIL 610 Soils and Land Use	3
		CE 770 Hazardous Waste Site Remediation	3	SOIL 633 Soil Physics	3
		CE 776 Groundwater Seepage	3	SOIL 647 Microclimatology	3
Supporting Area: Biological Resources Science	3	Adviser- approved courses			
Supporting Area: Social Sciences	3	ECON 681 Natural Resource Economics	3	ECS 770 Environmental Law and Policy	3
		NRM 631 NEPA and Environmental Impact Assessment	2	HIST 634 History of Environmental Science	3
		NRM 632 Environmental Impact Statement	2	SOC 631 Environmental Sociology	3
Resource Analysis	3	IME 640 Engineering Economy	2-4	Statistics/Operation Research (appropriate courses at the 600-700 level)	
		IME 660 Evaluation of Engineering Data	3		
Research <i>Select paper or thesis</i>	2-4	NRM 797 Master's Paper			
	6-10	NRM 798 Master's Thesis			
Seminar	2	NRM 690 Graduate Seminar			

*Approved courses from the various disciplines are listed on pages 27-28.