

UNIVERSITY OF GUELPH, RIDGETOWN CAMPUS
ENVIRONMENTAL MANAGEMENT DIPLOMA SEMESTER 1 (FALL) COURSE DESCRIPTIONS

DAGR*1300 SOIL PRINCIPLES (3-2) (Core)

This course includes origin and classification of soils, identification and importance of major soil types, identification of primary and secondary nutrients and how they are supplied, composition of soil including minerals, water, air, organic matter and biological organisms and how they interact and the importance of soil as a resource.

DAGR*1600 APPLIED MATHEMATICS (3-2) (Core)

This course is designed to augment mathematics skills necessary to compete in today's business environments. Typical applications are chemical rate conversions, solutions and mixtures, elementary algebra and financial topics. The aim is to teach how to solve actual mathematical problems encountered in the day-to-day operation of agricultural/horticultural business.

DAGR*1620 COMPUTER APPLICATIONS Part I (1-2) (Core)

Students will become acquainted with a computer and its operating systems and applications, such as word processing and spreadsheets. Students will also learn about basic Internet access hardware, such as modems, and how to use computer communications applications such as electronic mail, and World Wide Web browsers to access information relevant to the agricultural and horticultural industries.

DAGR*1720 COMMUNICATION SKILLS Part I (1-1) (Core)

Students will develop their command of language skills and learn and/or practice practical applications such as letter, memo, and report writing, resume writing and revision. Students will also learn how to present persuasive and informative oral presentations and how to incorporate audio-visual aids in effective communications.

DENM*1000 ENVIRONMENTAL SCIENCE AND ISSUES (3-2) (Core)

This course will expose the student to a broad range of environmental issues facing society today. The course will present the student with issues such as environmental quality and protection, the effects of industrialization and the need for conservation, global warming and the production and politics of food and its effect on the global, national, regional and local environmental quality.

DENM*1050 FUNDAMENTALS OF GOVERNMENT AND ORGANIZATIONS (3-2) (Core)

Students will be introduced to all levels of government in Canada, the legislative process, civil administration, and election processes. It will also include a brief comparison of the Canadian application of the English Parliamentary system and the United States Congressional System. The organization of government administration and the regulatory system, quasi government agencies and how the public is involved in government decision making regarding environmental issues and legislation will be discussed. Finally, a discussion of aboriginal issues and their role in the various levels of government in Canada will be covered.

DENM*2050 SITE ASSESSMENT (3-2) (Core)

Environmental site assessments are now required by lenders for mortgage purposes prior to the purchase of industrial, commercial, institutional, agricultural and residential properties. This course will provide a detailed understanding of the site assessment process and students will complete a Level 1 Site Assessment study and report as part of the course. Risk assessment, environmental auditing and the decommissioning of contaminated sites will also be explored and discussed. Case studies will provide an overview of specific site assessments and subsequent large scale Level 2, 3 and 4 site remediation.

UNIVERSITY OF GUELPH, RIDGETOWN CAMPUS
ENVIRONMENTAL MANAGEMENT DIPLOMA SEMESTER 2 (WINTER) COURSE DESCRIPTIONS

DAGR*2620 COMPUTER APPLICATIONS (Part II) (1-1) (Core)

Students will become acquainted with a computer and its operating systems and applications, such as word processing and spreadsheets. Students will also learn about basic Internet access hardware, such as modems, and how to use computer communications applications such as electronic mail, and World Wide Web browsers to access information relevant to the agricultural and horticultural industries.

DAGR*2720 COMMUNICATION SKILLS (Part II) (1-2) (Core)

Students will develop their command of language skills and learn and/or practice practical applications such as letter, memo, and report writing, resume writing and revision. Students will also learn how to present persuasive and informative oral presentations and how to incorporate audio-visual aids in effective communications.

DENM*2150 WATER RESOURCE MANAGEMENT (3-2) (Core)

Water is a precious resource that is all-too-often taken for granted. This course will demonstrate the significance of the various elements of the hydrologic cycle (e.g. precipitation, runoff, infiltration, groundwater recharge and discharge, etc.). It will focus on water supply systems, water wastewater perspective with other jurisdictions and the world. The students will learn of common water quality problems, including causes and pathways that contaminants follow to reach water and groundwater.

DENM*2200 ENVIRONMENTAL MONITORING (3-2) (Core)

This course will introduce the Environmental Management students to the various methods used to measure environmental impact. Students will achieve a summary understanding of the various government and other agency threshold limits and guidelines of environmental parameters such as water quality, vegetarian, terrestrial and social impact analysis.

DENM*3000 DATA ANALYSIS AND STATISTICS (3-2) (Core)

This course is an introduction to the use of statistics in the field of environmental management. Basic concepts include probability, observations, generalization of means, normal distribution, standard deviation, standard error, sampling, principles of experimental design, use of correlation and regression, index numbers.

DENM*3100 INTRODUCTION TO MICROBIOLOGY (1-4) (Core)

This course is designed for students in environmental studies. The importance from an environmental point of view, including water systems and soils as well as their importance in disease, nutrition, food and food processing will be emphasized.

DENM*4000 BUSINESS PRACTICES & ETHICS (3-2) (Core)

Students will be introduced to a basic understanding of entrepreneurship and business ethics. They will learn how a business is formed and various legal structures, marketing, book keeping, public presentation skills and how to write a resume. The Student will become acquainted with business planning, budgets and financial planning, proposal writing and delivery. The students will study the advantages of professional designation and the rights and responsibilities that come with it.

UNIVERSITY OF GULEPH, RIDGETOWN CAMPUS
ENVIRONMENTAL MANAGEMENT DIPLOMA SEMESTER 3 (FALL) COURSE DESCRIPTIONS

DENM*1100 SURVEYING AND GIS (1-4) (Core)

This course is designed to introduce the student to the basic principles of surveying, map reading and production. They will learn how to read maps, take precise measurements, use basic survey instruments and create their own maps and site plans. Later in the course the student will be exposed to Geographic Information Systems (GIS), the Global Positioning System (and how they are used to organize and store spatial data. Finally, Remote Sensing techniques will be examined reviewing the range of technology from basic air photo interpretation to the full range of current electronic sensors utilized by the land management professionals.

DENM*2000 OCCUPATIONAL HEALTH AND SAFETY (3-2) - CORE

This course provides an introduction to the topic of occupational health and safety. Topics to be covered include current Ministry of Labour Statutes and Regulations that pertain to the workplace. Students will become informed and conversant with topics including hazardous materials, hazardous chemicals, material safety data sheets, the Workplace Hazardous Materials Information System and health and safety planning.

DENM*2100 ECOLOGY(3-2). [0.50] - CORE

This is an introduction to the science of ecology, the study of interactions between organisms and their environments. Major topics include adaptation, populations, communities, biodiversity, ecosystems and competitions. The effects of climate and human activities on ecological processes are also considered. Ecological principles are used to explain the issues associated with several environmental problems.

DENM*3050 ENVIRONMENTAL LAW (3-2) - CORE

The Environmental Law course will introduce the student to the Canadian legal process and how new laws are drafted and passed and regulations developed and administered in Ontario and across Canada. The course will focus on the development of environmental legislation at both the federal and provincial levels of government and how they are administered and implemented.

SELECTIVES

DENM*3150 AGRICULTURAL AND ENVIRONMENTAL STEWARDSHIP (3-2)

This course examines the impact and role of farming in the agro-ecosystem. Lectures and case studies will be used to explore potential pathways of soil degradation and environmental contamination from agriculture, site assessment of environmental risk associated with specific farm operations and the utilization of best management practices for the conservation of soil, water and other natural resources.

DENM*3200 WATER TREATMENT (3-2)

This course provides the student with the basic design concepts and operational techniques of industrial and municipal water treatment systems. Several treatment processes for ground and surface supplies will be discussed including optimization and testing methodologies as well as the legal requirements of water taking in Ontario. Analytical calculations pertaining to water treatment will be examined. The participants in the course will be given the opportunity to write Provincial Certification Examination for the Water Operator-In-Training classification.

DENM*3210 SEWAGE AND WASTE WATER TREATMENT (3-2)

This course covers the introductory concepts of sewage and some related industrial waste treatment. Topics covered encompass the various unit treatment mechanisms currently utilized such as the biological, chemical and physical processes, legislation, different plant configurations, solids handling and disposal, process optimization and applicable testing methodologies. Analytical calculations pertaining to sewage treatment will be examined. The participants in the course will be given the opportunity to write the Provincial Certification Examination for the Sewage Operator-In-Training classification.

DENM*4200 WATERSHED MANAGEMENT AND CONSERVATION (3-2)

Students will learn to appreciate water issues on a watershed scale. They will see the impacts of various land uses on the quantity and quality of water leaving a watershed. The course will examine not only the impacts of human habitation on a watershed but will consider the impact of the forces of nature. The dynamics of various elements of a watershed (ie. wetlands, dams, reservoirs, riparian zones, land cover, etc) will be studied in order to understand the importance of each in the entire system.

UNIVERSITY OF GUELPH, RIDGETOWN CAMPUS
ENVIRONMENTAL MANAGEMENT DIPLOMA SEMESTER 4 (WINTER) COURSE DESCRIPTIONS

DAGR*4600 HUMAN RESOURCE MANAGEMENT (3-2) (Core)

Students will learn the theoretical and practical skills of management and interacting with people. Topics will include recruiting, supervising, motivation, training employees, effective listening, dealing with difficult people, group dynamics and leadership skills.

DENM*4050 ENVIRONMENTAL PROJECT (3-2) (Core)

This course is designed to give the student an opportunity to thoroughly review the environmental systems of an industry, municipality, agribusiness and/or agricultural enterprise. The student will complete an Environmental Management System using GAP analysis and create environmental policies and action plans.

DENM*4100 LAND USE PLANNING (3-2) (Core)

Students will become familiar with land use planning legislation and controls used in Ontario and across Canada. They will begin with the study of settlement theory and how land development effects the natural environment. The various legislative tools used to measure and control the development of land and how to understand the public's role in the process. The students will also be introduced to the higher levels of land use planning including the provincial and federal environmental assessment processes.

DENM*4500 ENVIRONMENTAL MANAGEMENT EXTERNSHIP (0-5) (Core)

This course will offer the student the opportunity to gain practical experience in actual work placements. The student will experience daily facility or agency operations, allowing them to further develop their knowledge and skills in sampling and analysis practices associated with a specific type of work placement. Report-writing and data documentation skills will be honed. Oral and written presentations will be required.

SELECTIVES (ANY TWO OF THE FOLLOWING MAY BE CHOSEN)

DENM* 3160 AGRICULTURAL CHEMICALS IN THE ENVIRONMENT (3-2)

An introduction to the environmental, human health, and economic issues associated with the use of chemicals, especially pesticides, in the agricultural and landscape environments. Students will become informed and conversant on the benefits and possible risks of pests, pesticides, bio-control agents, and transgenic organisms that are used for pest management.

DENM*4210 NUTRIENT MANAGEMENT (3-2)

This course will examine the best management practices associated with nutrient management on farms. Emphasis will be placed on the components and development of a nutrient management plan and the safe utilization of manures and bio-solids in agricultural production systems.

DENM*4250 INDUSTRIAL WASTE MANAGEMENT (3-2)

This course is designed to give the student a thorough understanding of the field of industrial wastes from a regulatory perspective. Topics include current Federal and Ontario hazardous waste statutes and regulations. The registration and manifesting of a variety of hazardous and non-hazardous industrial wastes will be explored. Waste minimization and pollution prevention strategies and methodologies will also be discussed.

DENM*4260 SPILLS RESPONSE PLANNING (3-2)

The purpose of this course is to acquaint the student with the legislation and rules surrounding spills and emergency planning. The student will demonstrate the technology and techniques available and how and when it is used. The process of contingency planning and the need for Environmental Management Systems will also be covered.