

BIOL 586 (3) Field-Based Teaching Methods & Materials

A lecture/laboratory course that provides opportunity for prospective junior and senior high life science teachers to observe, practice, and refine their teaching skills. Students will work in a school setting and experience actual classroom.

Prerequisite: BIOL 485/585

BIOL 590 (1-4) Workshop

A variable topic course designed for a selected topic in Biology. Workshops provide an intensive learning experience on a new topic in the biological sciences and/or hands-on experiences in a current area not covered by other course offerings. The course involves background reading, demonstrations, and laboratory or field experiences.

(F,S)

BIOL 591 (1-4) In-Service

(F, S)

BIOL 601 (2) Biometrics

This course will focus on the application of biometric principles to the planning and analysis of biological research similar to the student's thesis research. Completion of this course will aid the student in planning and completing her/his thesis.

(F)

BIOL 602 (2) Research Methods

The design, planning, and writing of a research proposal will be discussed in terms of problem selection, objectives, and appropriate methods. The students will apply information from the class to prepare their thesis proposals.

(S)

BIOL 603 (2) Research in the Biological Sciences I**BIOL 604 (2) Research in the Biological Sciences II****BIOL 605 (2) Ethical Issues in Biological Research**

What does it mean to do biological research ethically? This course will discuss scientific integrity and misconduct, human and animal research, conflicts of interest and the ethical dimension of other topics in modern biological and biomedical research.

BIOL 612 (3) Practicum in Electron Microscopy

A laboratory course of basic training in the instrumentation and methodology use in scanning and transmission electron microscopy. With a hands-on approach, students will learn instrument operation and techniques necessary to process and examine a variety of samples, and whenever possible, to examine specimens related to their own research interests.

(S) Prerequisite: BIOL 418/518

BIOL 618 (2) Biological Monitoring**BIOL 619 (2-3) Selected Topics in Biology**

Selected study of graduate level topics. May be repeated for different titled topic.

(F,S)

BIOL 677 (1-5) Individual Study

Prerequisite: consent

BIOL 681 (1-2) Laboratory Supervision

Practical experience in preparing and teaching laboratory courses.

(F,S) Prerequisite: consent

BIOL 685 (2) Teaching Assistant Methods

This course is design to provide teaching assistants (TA) with the knowledge and skills needed to prepare and teach college-level science courses. Special emphasis will be placed on the attainment of skills that maximize the effectiveness of material that will be presented to students.

(F)

BIOL 691 (1-5) In-Service

(F,S)

BIOL 694 (1-2) Alternate Plan Paper

(F,S)

BIOL 695 (1) Seminar

Students will attend and critique seminars presented by other students, faculty, and by people from external agencies and institutions.

Prerequisite: none (F,S)

BIOL 697 (1-12) Internship

(F, S)

BIOL 699 (1-6) Thesis

(F,S)

BUSINESS ADMINISTRATION

College of Business

150 Morris Hall • 507-389-5426

Although graduate courses are occasionally offered, the College of Business currently offers no graduate program.

ACCOUNTING AND BUSINESS LAW**ACCOUNTING****ACCT 500 (3) Advanced Financial Accounting**

A study of accounting principles and concepts for mergers, acquisitions, consolidated statements, foreign currency translation, and partnerships.

Prerequisite: ACCT 301

ACCT 510 (3) Business Income Tax

The course examines the principles and procedures relating to the determination and computation of federal income taxes for various business entities including sole proprietorships, C corporations, S corporations, partnerships, and tax-exempt entities. The course also covers tax research procedures.

S Prerequisite: ACCT 160

ACCT 511 (3) Individual Income Tax

The course examines the principles and procedures relating to the determination and computation of federal income taxes for an individual. Federal estate tax, gift tax, and income taxation of estates and trusts are also examined. The course does not require any accounting or business background.

S

ACCT 520 (3) Auditing

This course provides a basic introduction to financial statement (external) auditing, internal auditing, and governmental auditing. Topics include an overview of the external audit process, current audit issues, auditing standards, ethical standards, auditors' legal liability, external audit reports, other common reports prepared by auditors, and operational auditing.

Prerequisite: ACCT 320

ACCT 521 (3) External Auditing

This course is designed for students planning to take the CPA exam and/or pursue an auditing career in public accounting. Topics include statistical sampling methods, compliance testing, and detailed substantive audit procedures for all transaction cycles.

Prerequisite: ACCT 420

ACCT 522 (3) Internal Auditing

This course is primarily for students interested in careers in internal audit, management accounting, or governmental accounting. Topics include internal control structure reviews, operational audits addressing effectiveness and efficiency of business operations, internal audit reports, human relations issues in internal auditing, sampling, statistical methods, computer system audits, and fraud audits.

Prerequisite: ACCT 420

ACCT 570 (3) Advanced Topics

A study of accounting principles and concepts for governmental and not-for-profit organizations. It also includes an introduction to the Securities and Exchange Commission and a study of the Financial Accounting Standards Board's official pronouncements.

Prerequisite: ACCT 301

ACCT 577 (3) International Accounting**ACCT 579 (3) Executive Lectures****ACCT 677 (1-4) Individual Study****ACCT 690 (2) Seminar: Accounting****ACCT 694 (1-2) Alternate Plan Paper****ACCT 699 (3-6) Thesis****BUSINESS LAW****BLAW 552 (3) Employment & Labor Law**

Rights and duties of employer and employee, including the right to organize and bargain collectively. Federal employment discrimination laws, harassment and the duty to investigate, employee benefit laws, employee safety and worker compensation. Email privacy, drug testing, employer surveillance, ESOPS, and emerging employment issues.

Prerequisite: BLAW 200

BLAW 553 (3) International Legal Environment of Business

Legal aspects of United States global trade policies, regulation of imports, contracting in the global marketplace, international marketing concerns, and structure of various international organizations and treaties. Legal aspects of international licensing and technology transfers risks of nationalization and expropriation, international dispute resolution, comity, the Act of State, and sovereign immunity doctrines.
Prerequisite: BLAW 200

BLAW 574 (3) Environmental Regulation & Land Use

Legal aspects of land use planning, drainage, surface water rights and boundaries, mining and land reclamation, clean air, clean water, waste disposal, noise control, and environmental permit processes. Discussion of legal aspects of Historic Landmark Preservation, National Environmental Policy, CERCLA, the Superfund, liability for environmental contamination, and emerging environmental issues.
Prerequisite: BLAW 200

BLAW 576 (3) Construction & Design Law

Legal responsibilities of architects, engineers, and contractors in dealing with each other, the project's owner, sureties, and subcontractors. Special emphasis on performance problems, forms of business association, legal relationships with independent contractors, the AIA contract documents, mechanics liens, AAA Construction Arbitration Rules, dispute avoidance, claims management, and collection strategies.
Prerequisite: BLAW 200

BLAW 577 (3) Negotiation & Conflict Resolution

Negotiation theory and techniques, mediation theory and techniques, use of neutrals, limits of confidentiality, and ethical duties. Rule 114 and laws governing arbitration and management of the arbitration process. Extensive use of cases and role play.
Prerequisite: BLAW 200

BLAW 583 (1-3) Special Topics

Seminar topics may include legal aspects of entrepreneurship, mergers and acquisitions, legal rights in computer software, investigating sexual harassment claims, copyright on the Internet, immigration law, steps to become an IPO, privacy rights on computer networks, case studies in deregulation, legal aspects of leveraged buyouts, corporate takeover and ESOPs, and complying with NAFTA.

BLAW 591 (1-3) Inservice**BLAW 600 (3) Global & Ethical Perspectives in Business****BLAW 677 (1-4) Individual Study****BLAW 694 (1-2) Alternate Plan Paper****BLAW 698 (1-6) Internship****BLAW 699 (1-4) Thesis****FINANCE****FINA 559 (3) Personal Financial Planning**

Fundamental concepts of personal financial management: insurance, budgeting, credit, savings, investments, retirement and estate planning, and consumer debt managements.
S

FINA 560 (3) Investments

Formulation of investment policy of individuals and institutions, factors influencing the values of securities, and techniques of portfolio selection and management.
Prerequisite: FINA 362

FINA 561 (3) Short-Term Financial Management

This course describes the nature and types of credit, instrument, and agencies. It deals with the management and analysis of consumer and commercial credit and control.
Prerequisite: FINA 362

FINA 562 (3) Strategic Financial Management

Applications of financial principles and analytical tools through the use of case studies and problems from local businesses.
S Prerequisite: FINA 362

FINA 563 (3) Security Analysis

Tools and techniques to aid in individual and institutional portfolio management.
Prerequisite: FINA 362 and FINA 460

FINA 564 (3) Financial Institutions & Markets

Introduction to money and capital markets, instruments, and institutions. Consideration of the management problems of financial institutions.
Prerequisite: FINA 362

FINA 566 (3) Employee Benefit Plan

Fundamental concepts of employee benefits in relation to pertinent legislation, modern management techniques, and financial constraints that affect the formulation and implementation of a benefit plan.
Prerequisite: FINA 362

FINA 567 (3) Insurance & Risk Management

Principles and practices of risk management in the recognition and treatment of exposure to potential financial loss and with primary emphasis on property and liability insurance for individuals and families.

FINA 568 (3) Commercial Property/Liability Insurance

Principles and practices of risk management in the recognition and treatment of exposure to potential financial loss and with primary emphasis on property and liability insurance for business firms.
Prerequisite: FINA 467

FINA 569 (3) International Business Finance

Financing investments and working capital management problems in multinational environments.
Prerequisite: FINA 362

FINA 570 (3) Life and Health Insurance

Nature and uses of various economic security devices in protecting and/or replacing the earning power of the human life at the personal, family, and business levels.

FINA 576 (3) Real Estate Appraisal

Principles and techniques of real estate valuation. The market, cost, and income methods for the basic structure of the course. A professional appraisal report is required.

FINA 577 (3) Real Estate

Fundamental principles: valuation, brokerage, financing, law, property management, land descriptions, and basic investment.
Prerequisite: FINA 362

FINA 578 (3) Real Estate Investment

Property productivity analysis utilizing discount cash flow methodology, urban growth and taxation factors, and economic base analysis.
Prerequisite: FINA 362

FINA 579 (3) Executive Lectures

Guest lecturers and discussions with students by visiting senior executives of major companies coordinated by faculty. The course will include analysis of several individual companies. May be repeated.

FINA 580 (3) Options and Futures

Trading practices and procedures utilizing these contracts in hedging and risk management policies for business.

FINA 582 (3) Commercial Bank Management

Fundamental concepts of commercial bank management: banking trends and performance evaluations, managing the balance sheet, and evaluating loan requests.

FINA 591 (1-4) In-Service**FINA 599 (3) Personal Financial Plan****FINA 631 (3) Financial Management****FINA 677 (1-4) Individual Study****FINA 694 (1-2) Alternate Plan Paper****FINA 695 (3) Seminar: Finance**

This course is provided on demand to interested graduate students who want to pursue further study in investigating the empirical and theoretical issues in the financial literature.

FINA 699 (3-6) Thesis**MANAGEMENT****MGMT 540 (3) Human Resource Management**

This course examines management of human resources in organizations. Topics include analyzing jobs and writing job descriptions; recruiting and hiring of applicants; complying with employment law; managing promotions, quits, and layoffs; employee training and development; evaluating job performance; determining compensation; and managing human resources in a unionized environment.
F,S

MGMT 541 (3) Staffing

Students learn how to hire the best talent available using sound professional methods.

Students design and present legally defensible recruiting and screening techniques for jobs they have analyzed.

S

MGMT 542 (3) Compensation Management

The focus of this course is operating an effective, efficient, legal, and responsible system for compensating one's employees. Includes the workings of labor markets, analyzing jobs, finding the market value for jobs, designing a pay structure, appraising performance, setting individual pay, determining benefits, and occupations requiring special pay programs.

F,S

MGMT 543 (3) Entrepreneurship

The course focuses on providing the knowledge and experience regarding the important aspects of new business ownership and management and covers the distinctive issues associated with start-ups and acquisitions to help entrepreneurs, managers, and those preparing for such roles to understand better the similarities and differences between new ventures and established firms.

F

MGMT 544 (3) Organization Design

This course provides an understanding of the processes that cause organizations to be structured in various forms. The impact on size, technology, strategy, culture, and environmental conditions on structure are examined. The internal processes of power, conflict, culture, and organizational transformation are also emphasized.

MGMT 545 (3) Training & Development

Students design and deliver training by assessing client needs, defining learning outcomes, choosing effective methods, training, and evaluating results.

F,S

MGMT 547 (3) Management: Special Topics

Special topics as requested by students.

S

MGMT 548 (3) Operations Planning & Control

This course covers the needs of managers in profit or non-profit organizations who are engaged in planning and control functions. The course also focuses on the use and application of emerging technologies in a global, competitive environment.

MGMT 549 (3) Quality Management

This course covers essential topics in modern quality management within manufacturing and service organizations from a managerial perspective, including quality planning, culture, customer focus, leadership, vendor relations, the use of statistical quality control tools, and software, as well as behavioral issues in the improvement of process and product/service quality.

S

MGMT 551 (3) Advanced Topics POM

This course covers recent developments and trends in operations management. The emphasis is on such issues as JIT, GT, FMS, CIM, Concurrent Engineering, DFM, and Optimized Technology. Case studies and industrial projects will be used to illustrate the implementation aspects of the subjects covered. POM software applications are also emphasized.

MGMT 552 (3) Operations Strategy

Capstone course covering strategic issues in Operations Management, and their practical consequences for policy making. The emphasis is one (a) understanding how manufacturing interacts with other business functions, e.g. marketing, accounting, and finance, and (b) determining how the manufacturing function can contribute to the success of the firm.

MGMT 559 (3) Management Information Systems

This course is designed to prepare students to design and develop personal computer based information systems for management control and decision making using end-user software including spreadsheets and data base management systems. Students will design and develop several information systems as group projects.

F

MGMT 580 (3) Human Behavior in Organization

Concepts, theories, and empirical research on organizational behavior are studied. Models and tools for diagnosing situations, individual behavior, group behavior, intergroup conflicts, supervisory problems, and organizational change are analyzed.

F,S

MGMT 582 (3) Business, Society & Ethics

This course examines business organizations as one part of a complex socioeconomic system. It analyzes the ways in which businesses and societies interact with each

other. It examines how managers can more effectively deal with issues that arise in society that may affect the organization. Business ethics is one thread that runs throughout the course.

S

MGMT 585 (3) Introduction to Management Science

This course introduces a scientific approach to modeling and solving managerial decision problems. It includes such topics as linear and integer programming, network models, waiting-line models, simulation analysis, and decision theory.

MGMT 600 (3) Techniques of Research

This course explores the research process as an aid to making decisions and examines the role of research in decision-making, problem identification and formulation, assessment of the value of research, research proposals, literature reviews, research designs, sampling, measurement, scaling, questionnaires, data collection, data preparation, and the purposes of major data analysis methods.

MGMT 607 (3) Statistical Analysis for Business

Advanced concepts, data analysis, with emphasis on Chi square, analyses of variance and multiple correlation, and regression.

MGMT 641 (3) Total Quality Management

Concepts of TQM including employee involvement, leadership, competition, internal time, cost, and workplace.

MGMT 651 (3) Human Behavior in Organizations

MGMT 677 (1-4) Individual Study

MGMT 685 (3) Introduction to Operations Research

Quantitative methods of operations research/management sciences used for managerial decision making are explored. Topics covered include: resource allocation problems (linear programming, integer programming), network flow problems (PERT/CPM), and queuing models.

MGMT 691 (1-3) In-Service

MGMT 693 (3) Management of Human Resources

This course examines managing the human resources of an organization. It covers assigning the work to be done to jobs; recruiting, hiring and training employees; managing promotions, transfers, layoffs, and terminations; evaluating employee performance; and determining employee compensation. Attention is given to managing a diverse work force in a global marketplace.

MGMT 694 (1-2) Alternate Plan Paper

MGMT 696 (3) Seminar: Management

MGMT 698 (1-6) Internship

MGMT 699 (3-6) Thesis

MARKETING AND INTERNATIONAL BUSINESS

MARKETING

MRKT 510 (3) Principles of Marketing Management

An introductory course for graduate students without undergraduate business degrees: basic marketing concepts and analysis.

MRKT 513 (3) Industrial Marketing

A broad examination of the techniques employed in business-to-business marketing. Topics include organizational buying, buyer-seller relationships, and industrial marketing mix development.

Prerequisite: MRKT 310

MRKT 515 (3) Retailing Management

The study of marketing at the retail level, including the organization, operations, methods, policies, and problems of retail establishments in satisfying consumers.

Prerequisite: MRKT 310, 316

MRKT 520 (3) Sales Management

This course involves studying the role of the general sales manager, the functions of sales management within overall marketing strategy, and the development of analytical decision skills necessary to plan, manage, and control the sales force.

Prerequisite: MRKT 310, 412

MRKT 528 (3) International Marketing

This course takes a managerial approach to analyzing marketing decision making in multinational market situations.

F Prerequisite: MRKT 310 and IBUS 380

CHEMISTRY

MRKT 541 (3) Consulting for Small Business

Student teams assist businesses with problems by conferring with clients, conducting analyses, and recommending solutions. Problems may encompass accounting, finance, personnel procedures, production, or marketing.

Prerequisite: consent of instructor

MRKT 591 (1-4) In-Service

Topics will vary across various hands-on practical experience.

Prerequisite: consent of instructor

MRKT 602 (4) Basic Business Functions

MRKT 677 (1-4) Individual Study

S Prerequisite: consent of instructor

MRKT 694 (1-2) Alternate Plan Paper

Independent research related to topic proposal for alternate plan paper.

F Prerequisite: consent of instructor

MRKT 697 (3) Seminar: Marketing

Prerequisite: consent of instructor

MRKT 698 (1-6) Internship

F Prerequisite: consent of instructor

MRKT 699 (3-6) Thesis

Prerequisite: consent of instructor

INTERNATIONAL BUSINESS

IBUS 519 (3) International Business Seminar

Topics on current developments in international trade and legislation.

Prerequisite: IBUS 380

IBUS 528 (3) International Marketing

Managerial approach to marketing decision making in multicultural market situations.

F Prerequisite: MRKT 310, IBUS 380

IBUS 548 (3) International Business Management

Comparison of the major management systems within their differing cultural environments. Analysis of differing value systems, group behaviors, conflicts, and supervisory problems.

Prerequisite: MGMT 330 and IBUS 380

IBUS 549 (3) International Business Policy

A capstone course for students majoring in international business designed to analyze and integrate the various international business management decisions.

Prerequisite: IBUS 380, business foundation courses

IBUS 569 (3) International Business Finance

Financing investments and working capital management problems in multinational environments.

Prerequisite: FIRE 362, IBUS 380.

IBUS 575 (3) International Business Law

Comparison of the two major systems of law: code and common, and their effects on commercial transaction between firms in different countries.

IBUS 585 (3) Export Administration

Provides knowledge and documentary skills in managing and implementing the export operations of firms engaged in international trade.

Prerequisite: IBUS 380

IBUS 586 (3) Consulting for Export Business

Student teams under faculty supervision assist area firms interested in developing or expanding international business.

Prerequisite: senior standing/consent of instructor

IBUS 591 (1-4) In-Service

Topics will vary across various hands-on practical experiences.

Prerequisite: consent of instructor

IBUS 677 (1-4) Individual Study

S Prerequisite: consent of instructor

IBUS 692 (3) Multinational Business Management

Organization, finance, production, personnel, executive development, and nationalistic conflict problems of multinational business environment.

Prerequisite: consent of instructor

IBUS 694 (1-2) Alternate Plan Paper

F Prerequisite: consent of instructor

IBUS 696 (1-3) Seminar in International Business

Prerequisite: consent of instructor

IBUS 698 (1-6) Internship

F Prerequisite: consent of instructor

IBUS 699 (3-6) Thesis

Prerequisite: consent of instructor

CHEMISTRY MA

CHEMISTRY MS

College of Science, Engineering & Technology

Department of Chemistry and Geology

242 Trafton Science Center N • 507-389-1963

<http://cset.mnsu.edu/chemgeol/>

Chair: Jeffrey Pribyl, Ph.D.

Graduate Coordinator: James Rife, Ph.D.

Brian Groh, Ph.D.; Bryce Hoppie, Ph.D.; S. Dean Moosavi, Ph.D.; Marie Pomije, Ph.D.; James Rife, Ph.D.; Theresa Salerno, Ph.D.; John Thoenke, Ph.D.; Trent Vorlicek, Ph.D.

The Department of Chemistry and Geology offers programs that lead to Master of Arts and Master of Science degrees in chemistry. The MS is a professional degree leading to employment in industrial research or advancement to Ph.D. programs. The MA is designed to strengthen and broaden the academic and professional preparation of those students who qualify for teacher licensure.

The Graduate Program in the Department of Chemistry and Geology offers students an opportunity to strengthen their academic education in the field of chemistry and to develop the necessary research skills for future careers.

Housed in Trafton Science Center, the Department of Chemistry and Geology offers an experienced faculty with diverse research interests and exceptional teaching skills. The instruments which are available to graduate students in the Department of Chemistry include a 200 MHz Fourier Transform nuclear magnetic resonance spectrometer, gas chromatographs, high pressure liquid chromatograph, Fourier Transform infrared spectrometer, atomic absorption and ultraviolet-visible spectrophotometers, centrifuges, and a scintillation counter.

Admission. In addition to meeting the general requirements for admission to the College of Graduate Studies and Research, students must meet the following admission requirements for the department. Information should be sent to the Graduate Coordinator.

1. Three letters of recommendation from individuals familiar with the applicant's academic background, training, and abilities.
2. A minimum GPA of 2.75/4.0 for the last two years of the baccalaureate degree.
3. A minimum GPA of 2.50/4.0 in undergraduate math and science courses or a minimum score of 600 on the Chemistry Graduate Record Exam.
4. A core of undergraduate chemistry courses must have been completed, including one year of general chemistry, one year of organic chemistry, one course in analytical chemistry, one course in inorganic chemistry (beyond the freshman year), and one semester (two quarters) of physical chemistry.
5. International students must have a minimum TOEFL score of 500 if they have not received a bachelor's degree from an educational institution whose language of instruction is English. A score of 550 or more is recommended.

Provisional admission of students with lesser qualifications will be at the discretion of the Chemistry Graduate Committee.

CHEMISTRY MS

(Thesis Plan - 30 credits)

Required Core (10-14 credits)

CHEM 692 Research (4 minimum)

CHEM 695 Graduate Seminar (2) (may be repeated)

CHEM 699 Thesis (4 maximum)

Required Chemistry Electives (14-16 credits)

Choose a maximum of 10 credits of 500 level courses:

CHEM 513 CHEM 515 CHEM 523 CHEM 524 CHEM 534

CHEM 541 CHEM 551 CHEM 560 CHEM 561 CHEM 565

CHEM 566 CHEM 574 CHEM 577 CHEM 585