MGT 4220 Small Business Management 3(3) Study of management of the small independently owned and operated business. Emphasizes analyzing new business opportunities, planning and establishing a growing concern, and managing the contemporary small business. Field experience in consulting with small businesses enhances students' understanding of the unique opportunities and problems of small business organizations. Preq: MKT 3010.

MGT 4230 International Business Management 3(3) Survey of theoretical and institutional complexities of international business operations. Topics include exporting, importing, foreign investment, multinational corporations, and international payment systems. Preq: Junior standing.

MGT 4240 Global Supply Chain Management 3(3) Design, planning, control, and improvement of supply chains for competing effectively in the context of global operations. Topics include supply chain structure and configuration, approaches to internationalization and interfirm integration, and complexities of material, information, and cash flows across international borders. Preq: MGT 3900.

MGT 4250 Compensation Management 3(3) Examination of compensation employees seek in exchange for their efforts and contributions. Topics include government and union influences, job content analysis, description, and evaluation; developing pay structures; measuring and paying for performance; employee benefits; administration of the compensation plan; executive, managerial, professional, and sales. Preq: MGT 3070 and MGT 4000.

MGT 4270 Managing Continuous Improvement 3(3) Examination of issues related to continuous improvement, including a systematic approach to selecting improvement areas, determining how to improve, plan, and manage the improvement process. Topics include selecting performance measurements, using teams to achieve breakthrough changes, identifying root causes of problems, and developing and implementing solutions to problems. Preq: MGT 3900.

MGT 4300 Senior Seminar in Management 3(3) In-depth study of current business topics; allows senior management students to relate their academic studies to real-world problems. Senior paper is required. May be repeated for a maximum of six credits, but only if different topics are covered. Preq: Senior standing.

MGT 4310 Employee Diversity, Rights, and Responsibilities 3(3) Focuses on employee and organizational rights and responsibilities. Topics include various types of discrimination (race, sex, religion, national origin, age, and disability status); drug and alcohol testing; AIDS in the workplace; employee discipline and termination issues; privacy and safety concerns; and union organizing campaigns. Preq: MGT 3070 or MGT 4000.

MGT 4350 Personnel Interviewing 3(3) Helps students understand current interviewing theory, conduct an employment interview, and advise their future employers how to improve interviewing programs. Topics include job analysis, legal issues, types of interviews, and evaluating applicants. Preq: MGT 3070 or MGT 4000.

MGT 4360 White-Collar Crime 3(3) White-collar crime and corruption are examined from a managerial perspective. Topics include financial crimes, crimes against consumers, environmental crimes, acts of institutional corruption, the impact of organized crime on legitimate businesses, and computer crime. Preq: Senior standing. Preq or concurrent enrollment: FIN 3060.

MGT 4400 Negotiations 3(3) Focuses on principles and practice in business negotiations. Topics include negotiating concepts, strategies, situational applications, and practice in applied techniques. Situations include negotiation in sales, customer relations, global nuances in negotiation situations, employee management, and career development. Preq: Senior standing.

MGT 4440 International Perspectives in Industrial Management 1-6(1-6) Provides an international perspective to industrial management via organized plant visits to businesses in a foreign country and lectures by and discussions with senior operations managers. Cultural visits and lectures are also organized to provide a holistic perspective to cover cultural and economic environment of the host country. Students are responsible for travel costs. May be repeated for a maximum of six credits. May also be offered as IE 4440. Preq: Consent of instructor.

MGT 4500 Advanced Business Analytics 3(3) Students' understanding of how to manage and analyze business data to gain competitive advantages is deepened. Case studies, projects, and real-world business problems are utilized to give opportunity for students to apply business and analytics skills and use business analytics software applications. Preq: MGT 3500.

MGT 4520 Business Analysis 3(3) Follows the traditional systems development life cycle (SDLC), although alternative methodologies are also discussed. Focuses on earlier phases of the SDLC, from IS planning through specification of structured requirements and on the methods, techniques, and tools used to determine information requirements and their unambiguous documentation. Preq: MGT 3180; or MGT 2010 and ACCT 3220; or MGT 2010 and CPSC 2150 and CPSC 2310.

MGT 4540 Systems Implementation 3(3) Builds upon skills of programming, database, and systems analysis and design by involving students with the later phases of the systems development life cycle (SDLC). Students design and develop a system using various platforms. Focus is on the logical and physical system design. Preq: MGT 3180.

MGT 4550 Emerging Information Technology Trends in Business 3(3) In-depth study, through case studies, readings, and hands-on experience, of emerging information technologies in and across business organizations. Focuses on understanding, effective deployment, and impact of these technologies on business outcomes. Preq: MGT 3180; or MGT 2010 and ACCT 3220; or MGT 2010 and CPSC 2150 and CPSC 2310.
MICR 3050 General Microbiology 4(3) Morphology, physiology, classification, distribution, and cultivation of microorganisms. Preq: CH 1010 and CH 1020; and one of the following combinations: (BIOL 1030 and BIOL 1040 and BIOL 1050 and BIOL 1060) or (BIOL 1100 and BIOL 1110). Coreq: MICR 3050.

MICR 3051 General Microbiology Laboratory 0(3) Non-credit laboratory to accompany MICR 3050. Coreq: MICR 3050.

MICR 3940 Selected Topics in Creative Inquiry I 2-3(1) Disciplinary and multidisciplinary group project research projects with the goal of developing the students' ability to discover, analyze, and evaluate data. May be repeated for a maximum of six credits. Honors students must take at least six credits over a two-semester period with the same research advisor and write an honors thesis. These credits may include MICR 3940, MCR 4940 or both. Includes Honors sections. Preq: Consent of instructor. Coreq: MICR 3941.

MICR 3941 Selected Topics in Creative Inquiry I Laboratory 0(3-6) Non-credit laboratory to accompany MICR 3940. Coreq: MICR 3940.

MICR 4000* Public Health Microbiology 3(3) Epidemiology of transmissible diseases including pathogenic characteristics of the infectious organism, modes of transmission, mechanism of infection, diagnostic aids, effective treatments, immunizing procedures, and methods of preventing infection. Includes Honors sections. Preq: MICR 3050.

MICR 4010* Microbial Diversity and Ecology 3(3) In-depth survey of microbial morphology, ecology, and diversity. Study of the interaction and adaptation of microbes in a wide range of environmental conditions, including consideration of their metabolism, nutrition, growth and the use of microbiological assays. Includes Honors sections. Preq: CH 2010 or CH 2230; and CH 2270; and MICR 3050.

MICR 4020* Environmental Microbiology 3(3) Discussion of microorganisms in air, terrestrial, and aquatic environments and how they are used for environmental restoration activities. Topics include the nature of biofilms, interactions of microbes with inorganic and organic constituents, processes to implement bioremediation in surface/subsurface environments, and treatment of solid, liquid, and gaseous waste streams. Preq: MICR 3050 and MICR 4010; and either CH 2010; or both CH 2230 and CH 2270.

MICR 4030* Marine Microbiology 3(3) Discussion of the microbes that inhabit the marine environment, their peculiar physiological traits, and contributions to the ecology of oceans. Preq: MICR 3050; and either CH 2010; or both CH 2230 and CH 2270.

MICR 4050* Advanced Microbial Ecology of Humans 3(3) Investigation of the complex ecological relationships between microbes and their human hosts, including investigation of the normal microbial community in various body systems, factors that change the microbiota, and the role of the microbiota in normal development, health and disease of the host. Preq: MICR 4010 with a C or better.

MICR 4070* Food and Dairy Microbiology 4(3) Physical-chemical factors limiting survival and growth of microorganisms during processing and manufacturing of food and dairy products. Standard methods for enumerating and identifying indicator bacteria, yeasts, molds, and microbes producing food and food-borne illness. Starter cultures, fungal toxins, microbial cell injury and standards for food and dairy products. Includes Honors sections. Preq: MICR 3050; and one of BCHM 3050 or CH 2010 or CH 2270. Coreq: MICR 4071.

MICR 4071* Food and Dairy Microbiology Laboratory 0(3) Non-credit laboratory to accompany MICR 4070. Coreq: MICR 4070.

MICR 4100* Soil Microbiology 3(3) Role of microorganisms in the decomposition of organic substances, transformation of nitrogen and mineral substances in the soil; interrelationships between higher plants and microorganisms; importance of microorganisms in soil fertility. Includes Honors sections. Preq: MICR 3050; and MICR 4010 or PES 4900.

MICR 4110* Pathogenic Bacteriology 3(3) Study of pathogenic bacteria and their virulence mechanisms. Emphasizes host-microbe interactions, responses to infection and treatment, and research strategies for various topics of bacterial pathogenesis. Includes Honors sections. Preq: MICR 3050 and MICR 4120 and MICR 4140.

MICR 4120* Bacterial Physiology 3(3) Consideration of the cytology, physiology, metabolism, and genetics of bacteria. Includes studies of growth and death, reproduction and mutation, nutrition and metabolic pathways, regulatory mechanisms, and effects of environment. Includes Honors sections. Preq: CH 2240 and MICR 3050; and either BCHM 3010 or BCHM 3050.

MICR 4130* Industrial Microbiology 3(2) Microbial aspects of largescale processes for the production of foods, antibiotics, enzymes, fine chemicals, and beverages. Topics include strain selection, culture maintenance, biosynthetic pathways, continuous cultivation and production of single cell protein. Includes Honors sections. Coreq: MICR 4131.

MICR 4131* Industrial Microbiology Laboratory 0(3) Non-credit laboratory to accompany MICR 4130. Coreq: MICR 4130.

MICR (AVS, BIOL) 4140* Immunology Laboratory 1(3) Immunology laboratory are designed to study both the innate and acquired immune systems. Laboratory topics corresponding to MICR 4140. Preq or concurrent enrollment: MICR 4140.

MICR (AVS, BIOL) 4140* Immunology Laboratory 1(3) Immunology laboratory are designed to study both the innate and acquired immune systems. Laboratory topics corresponding to MICR 4140. Preq or concurrent enrollment: MICR 4140.

MICR 4140* Introductory Virology 3(3) Introduction to the field of virology, including animal, bacterial, and plant viruses. Topics include nomenclature and classification, biochemical and biophysical characteristics, mechanisms of replication, chemotherapy, and techniques for isolation, assay, and purification. Includes Honors sections. Preq: MICR 3050; and either BCHM 3010 or BCHM 3050.

MICR 4170* Cancer and Aging Laboratory 3(3) Discusses alterations that occur at cellular, tissue and tissue levels during cell transformation and aging. Topics include the cell division cycle, signal transduction pathways, oncogenes and tumor suppressors, cell death and cell aging. Includes Honors sections. Preq: MICR 3050 and BIOL 4610; and either BCHM 3010 or 3050.

MICR 4190* Selected Topics in Molecular Medicine 3(3) Introduction to various areas of molecular medicine. Examines the latest research and developments in molecular medicine. Designed for students interested in medicine and biomedical research. Graduate students may repeat for a maximum of six credits. Preq: MICR 3050 and MICR 4010 or PES 4900.

MICR 4200 Bacterial Physiology Laboratory 1(3) Laboratory topics corresponding to MICR 4210 lecture. The course will train students in the proper handling of bacteria and will teach techniques for growing and maintaining bacterial cultures while avoiding contamination. Preq or concurrent enrollment: MICR 4210.

MICR (AVS, BIOL) 4240* Immunology Laboratory 1(3) This course is designed to apply the knowledge gained in MICR 4140, Immunology lecture, in an applied setting. The experiments in this beginning immunology laboratory are designed to study both the innate and acquired immune systems. Experimentation into the formation, function and detection of antibodies provides students with skills in basic immunologic techniques. May also be offered as AVS 4240 or BIOL 4240. Preq or concurrent enrollment: MICR 4140.

MICR 4250* Microbial Genetics Laboratory 1(3) Complements the genetics topics covered in the Microbial Genetics lecture. These topics are important at practical levels for prevention and treatment of bacterial diseases. Laboratory is used to teach pathogen handling, basic identification techniques, and modern molecular protocols for pathogen identification. Preq: MICR 4140. Preq or concurrent enrollment: MICR 4110.

MICR 4270* Cancer and Aging Laboratory 1(3) The laboratory is used to teach the basic molecular protocols for cancer and aging research, and will help students to understand the mechanisms of cancer and aging discussed in lecture. Preq or concurrent enrollment: MICR 4170.
MIRC 4300* Soil Microbiology Laboratory 1(3)
Examines microbes residing in the soil and their effects on the soil substratum and resident plant communities. Topics include biogeochemistry, microbial isolation, microcosm development, and characterization of soil microbial communities. Prereq or concurrent enrollment: MIRC 4100.

MIRC 4310 Microbial Diversity and Ecology Laboratory 1(3)
Provides a laboratory experience to complement topics covered in the Microbial Diversity and Ecology lecture. These topics are important at practical levels to better understand the diversity of microbes in various ecosystems. The laboratory is used to learn sampling techniques, preparation of microbial media, basic identification techniques, and modern molecular protocols for microbe identification, such as PCR and 16S rDNA gene sequencing. Prereq or concurrent enrollment: MIRC 4010.

MIRC 4500 Advanced Microbiology Laboratory I 2(1)
Application of knowledge and techniques learned in the Introductory Microbiology Lab with new topics on microbial ecology, diversity and physiology. Experiments in soil, marine and environmental microbiology will be conducted. Prereq: MIRC 4100. Coreq: MIRC 4501.

MIRC 4501 Advanced Microbiology Laboratory I Laboratory 0(3)
Non-credit laboratory to accompany MIRC 4500. Coreq: MIRC 4500.

MIRC 4510 Advanced Microbiology Laboratory II 2(1)
Application of knowledge and techniques learned in the Advanced Microbiology Lab I with new topics in microbial cell biology and microbiology. Prereq: MIRC 4120 and MIRC 4500. Coreq: MIRC 4511.

MIRC 4511 Advanced Microbiology Laboratory II Laboratory 0(3)
Non-credit laboratory to accompany MIRC 4510. Coreq: MIRC 4510.

MIRC 4520 Advanced Microbiology Laboratory III 2(1)
Application of knowledge and techniques learned in the Advanced Microbiology Labs I and II with new topics on pathogenic bacteriology, parasitology, virology and immunology. Prereq: MIRC 4150. Coreq: MIRC 4521.

MIRC 4521 Advanced Microbiology Laboratory III Laboratory 0(3)
Non-credit laboratory to accompany MIRC 4520. Coreq: MIRC 4520.

MIRC (BIOL) 4560* Medical and Veterinary Parasitology 3(3)
Introduction to parasitism in the animal kingdom. Emphasizes basic and applied principles related to economically and medically important diseases. Classical and experimental approaches to the study of parasitism are examined in reference to protozoa, helminths, and arthropods. Includes Honors sections. May also be offered as BIOL 4560. Prereq: BIOL 1040 and BIOL 1060; or BIOL 1110. Coreq: MIRC 4560.

MIRC (BIOL) 4570* Medical and Veterinary Parasitology Laboratory 2(1)
Laboratory to reinforce material presented in BIOL 4560. Introduces students to both live and preserved human/animal parasites. Also introduces techniques used in collection, preservation, and examination of animal parasites. Includes Honors sections. Coreq: MIRC 4560 and MIRC 4571.

MIRC (BIOL) 4571* Medical and Veterinary Parasitology Laboratory 0(2)
Non-credit laboratory to accompany MIRC 4570. Coreq: MIRC 4570.

MIRC 4910 Undergraduate Research in Microbiology 1(4-12)
Individually mentored research projects in various areas of microbiology that introduce undergraduate students to the planning and execution of research experimentation and the presentation of research findings. May be repeated for a maximum of eight credits with consent of instructor. Honors students must take at least six hours under a single research advisor over two semesters. Honors thesis is required. Includes Honors sections. Prereq: Consent of instructor.

MIRC 4920 Internship in Microbiology 0(3-12)
Preplanned internship at an advisor-approved facility to give students learning opportunities beyond their classroom experiences. Students submit a Student Internship Contract and a two-page study plan before the internship and a comprehensive report within one week of the end of the internship. May be repeated for a maximum of six credits. To be taken Pass/No Pass only. Prereq: Consent of instructor.

MIRC 4930 Senior Seminar 2(2)
Capstone course engaging students in analysis and discussion of publications from the technical and non-technical literature in biological sciences and from current topics of biology appearing in other media. Emphasis is placed on ethical issues that arise as a result of biological research. Prereq: Senior standing and COM 1500 or COM 2500 or ENGL 3150.

MIRC (BIOL) 4940 Selected Topics in Creative Inquiry II 2(1) Disciplinary and multidisciplinary group research projects with the goal of developing the students' ability to discover, analyze, and evaluate data. May be repeated for a maximum of six credits. Honors students must take at least six credits over a two-semester period with the same research advisor and write an honors thesis. These credits may include BIOL 3940, BIOL 4940 or both. Includes Honors sections. May also be offered as BIOL 4940. Prereq: Consent of instructor. Coreq: MIRC 4941.

MIRC (BIOL) 4941 Selected Topics in Creative Inquiry I Laboratory 0(3-6) Non-credit laboratory to accompany MIRC 4940. May also be offered as BIOL 4941. Coreq: MIRC 4940.

MIRC 4950 Service Learning in Biology 2(1)
Combines service and academic learning while helping precollege or college students learn about the fundamentals of science. Provides lecture and laboratory experiences as students learn to prepare and participate in supervised laboratory teaching for precollege or college students. May be repeated for a maximum of six credits. Prereq: Consent of instructor. Coreq: MIRC 4951.

MIRC 4951 Service Learning in Biology Laboratory 0(3-9) Non-credit laboratory to accompany MIRC 4950. Coreq: MIRC 4950.

MARKETING

MKT 2980 Creative Inquiry–Marketing 1(4-12)
In consultation with and under the direction of a faculty member, students pursue scholarly activities individually or in teams. These creative inquiry projects may be interdisciplinary. Arrangements with mentors must be established prior to registration. May be repeated for a maximum of six credits. Prereq: Consent of faculty member/mentor.

MKT 3010 Principles of Marketing 3(3)
Principles and concepts involved in planning, pricing, promoting, and distributing of goods and services. Includes Honors sections. Prereq: ECON 2000 or ECON 2110 or ECON 2210 or any 2000-level AGRB course; and sophomore standing.

MKT 3020 Consumer Behavior 3(3)
Examination of selected individual and group behavioral science concepts and their application to the understanding of consumer decision making. Prereq: MKT 3010.

MKT (ELE) 3140 New Venture Creation I 3(3)
First in a two-part series that continues with MKT (ELE) 3150 assessing entrepreneurial opportunities. Focuses on creativity, idea generation, market opportunity analysis, strategy, and methods of entry. Opportunity analysis may be developed into a full new venture plan in ELE 3150 or MKT 3150. May also be offered as ELE 3140. Prereq: Junior standing.

MKT 3210 Sports Marketing 3(3)
Exploration of the essentials of effective sports marketing. Topics include application of marketing principles in the sports area, licensing issues, sponsorships and endorsements, stadium and arena marketing, broadcasting and media considerations, public policy and sports, and unique marketing challenges for sport specific products (football, basketball, baseball, motorsports, etc.) Prereq: MKT 3010.

MKT 3310 Marketing Metrics and Analytics 3(3)
Examines the derivation, meaning, use and communication of marketing metrics used to facilitate decision making in various areas, including but not limited to, online and social media strategy, advertising, pricing, branding and product development. Students are also introduced to database management, including the use of Microsoft Excel. Prereq: MKT 3010 and STAT 3090.

MKT 3900 Junior Honors Research 1(1)
Students select and complete a research project approved by a faculty advisor, in conjunction with an approved three-credit marketing course (other than MKT 3010 or 4310). Students are expected to display a command of marketing theory and an ability to apply theory to their research. Prereq: MKT 3010 and membership in C a houn Honors College and consent of faculty member supervising research.