University of Michigan-Flint
Office of the Senior Associate Provost

Professional Theme: Business/Economics

Business (BUS) 110, **Business Concepts & Careers**, 3 credits. Comprehensive overview of basic business concepts and business protocol. Foundations of general business management, human resources management, operations management, marketing, accounting, finance, and their interdependent nature. Job search techniques, writing resumes, job interviewing, establishing personal relationships.

Business (BUS) 115, **Introduction to Business Applications**, 3 credits. Focus on development of skills in the use of business technology, including spreadsheets, database management, and presentation software; financial computing; web-based business data sources and their ethical use.

Economics (ECN) 201, **Principles of Economics – Macroeconomics**, 3 credits. Introduction to the principles of economic organization and national income determination and stabilization. Topics include inflation, unemployment, money and banking, and the economic role of government.

Economics (ECN) 202, **Principles of Economics – Microeconomics**, 3 credits. Introduction to the economic theories of production, consumption, and exchange. Topics include applications of supply and demand, production and cost analysis, market structure, market failure, resource markets, and regulation.

Technical/physical requirements for these courses:

- BUS 115: computer lab w/access to latest versions of Microsoft Excel, Access, PowerPoint.

Skill expectations for these courses:

- An interest in post-secondary study of Business and/or Economics; ability and motivation to undertake successfully the rigor of college-level coursework; strong achievement in a college preparation program of studies including successful completion of 3+ years of English with strong writing skills and other similar characteristics.

Professional Theme: Law/Criminal Justice

Political Science (POL) 120, **American National Government & Politics**, 3 credits. Theory and practice of democratic government in the United States and the institutions and processes of

American government as manifestations of democratic values. Representative democracy, federalism, the Presidency, Congress, the Courts, political parties, interest groups, and voting as an expression of, and at times contradictions to, democratic values.

Communication (COM) 204, **Argumentation and Debate**, 3 credits. Basic instruction in public argumentation and debate. Students develop research skills and learn to construct and deconstruct arguments. Includes participation in debates.

Political Science (POL) 329, **Civil Liberties & the Constitution**, 3 credits. Civil liberty issues confronting American society. Rights of freedom of speech, assembly, and press; the religion clauses of the First Amendment; the equal protection clause of the Fourteenth Amendment as it is concerned with rights of minorities. Students deliver oral arguments and prepare briefs of pending and simulated court cases. Prerequisite: POL 120 or consent of instructor.

Criminal Justice (CRJ) 128, **Introduction to the Criminal Justice System**, 3 credits. Overview of the criminal justice system, examining key roles, goals and issues of law formation, policing courts and corrections, as well as working relationships among these organizations in the administration of justice.

Alternate Course: Political Science (POL) 303, Politics & Public Policy

Technical/physical requirements for these courses:

- Normal classroom setting with SmartCart and internet connectivity.

Skill expectations for these courses:

- An interest in post-secondary study of Law/Criminal Justice; ability and motivation to undertake successfully the rigor of college-level coursework; strong achievement in a college preparation program of studies including successful completion of 3+ years of English with strong writing skills and other similar characteristics.

Professional Theme: Pre-Engineering

Engineering (EGR) 165, **Computer Aided Design**, 3 credits. The goal of this course is to familiarize engineering students with fundamental principles of computer aided design and perform basic engineering analysis, such as stress and deflection using solid modeling and parametric design using Pro-Engineer software.

Engineering (EGR) 102, **Introduction to Engineering**, 3 credits. This course introduces students to various engineering disciplines, and common engineering science foundations of all branches, teaming ethics, and communication. Fundamental principles of various engineering disciplines will be taught using one central problem from each discipline.

Computer Science (CSC) 101, **Fluency with Informational Technology & Computing**, 3 credits. Development of fluency in Information Technology (IT) for productive use, designed to

complement the student's areas of study. The relevance of IT and computing in daily life, emphasized through collaborative learning about such topics as image representations, high definition video transmission, digital voice encoding, MP3 files, identity protection for online shopping, data security in social networks, robotics, games and animation creation, virtual worlds. Introduction to programming using non-traditional, intuitive programming environments such as smartphones and LEGO Mindstorms.

Computer Science (CSC) 175, **Problem Solving & Programming I**, 4 credits. This course introduces students to the structured programming language C++ which is essential for engineering applications and problem solving. Programming language concepts, arrays, structures, and subprograms will be included.

Alternate Course: Mathematics (MTH) 121, **Calculus I**, 4 credits. (Prerequisite: completion of MTH 120 (Pre-Calculus) with a grade of 2.0+, or qualifying score on departmental placement test.) Differentiation and its applications; limits; introduction to integration.

Technical/physical requirements for these courses:

- EGR 165: computer lab w/Pro-Engineer software

Skill expectations for these courses:

- Students interested in the Pre-Engineering program should be interested in post-secondary study of engineering. In addition, these students are expected to (1) be enrolled in Calculus or AP Calculus in their home high schools, and (2) to have either completed or be enrolled in high school physics.

Professional Theme: Pre-Medical Science

Biology (BIO) 113, **Principles of Biology**, 4 credits. Introduction to the basic principles of biology relating to cell structure and function, cell reproduction, and mechanisms underlying patterns of inheritance, ecology and evolution, emphasizing guided discovery and critical thinking.

Biology (BIO) 328, **Genetics**, 4 credits. Principles of inheritance from molecular through population levels. Gene action, cytoplasmic inheritance, parthenogenesis, mutation, and homeostasis.

Health Care (HCR) 206, **Health Sciences Applications**, 2 credits. Introduction to a wide range of topics in health science with demonstrations of how basic scientific concepts can be applied to solving problems in the field. Hypothetical thought experiments stimulate students' interest in pursuing health careers.

Philosophy (PHL) 168, **Philosophy of Bioethics**, 3 credits. Introduction to classical ethical theories and their application to contemporary bioethical issues, such as neuroethics, ethics of nanotechnology, stem-cell research, bioterrorism, cloning as well as a broad range of health

care issues such as health system reform, international health research, social inequities in health, and the allocation of scarce resources.

Alternate Course: Biology (BIO) 167, Anatomy & Physiology I, 4 credits. (Non-science majors require consent of instructor.) Study of the structure and function of cells, tissues and four human body systems; emphasis on the integumentary, skeletal, muscular, and nervous systems. *Lecture and laboratory.*

Technical/physical requirements for these courses:

- BIO 113: can be taught in a lab or a nonlab format.
- BIO 167: requires a lab space; and anatomical models

Skill expectations for these courses:

- Students interested in this program should be interested in post-secondary study in a medical profession. In addition, required academic preparation includes: (1) successful completion of 3 years of HS English with strong writing skills; (2) successful completion of one year of HS Biology (AP or Honors or close equivalent course); (3) successful completion of one year of HS Chemistry or one year of HS Physics (AP or Honors level preferred), one of which may be taken concurrently with enrollment in the Pre-Medical Science Program; (4) concurrent enrollment in mathematics coursework beyond Algebra II; and (5) a record of excellent attendance in high school courses.

Professional Theme: Graphic Design *(Note: 5 courses listed as options here)*

Communication (COM)126, **Introduction to Digital Photography**, 3 credits. Introduction to technical and creative use of digital cameras and computer-aided imagery. Utilization of digital cameras, computers and sophisticated imaging software as a tool for individual expression. *Also listed as Art 126.*

Communication (COM)160, **Introduction to Graphic Design**, 3credits. Introduction to contemporary graphic design. Theory, professional practices, creative workflow, career paths, digital graphics hardware and software usage, copyright, ethics. *Also listed as ART 160, Visual Communications Theory & Process.*

Art History (ARH) 140, **History of Graphic Design**, 3 credits. Chronological history of graphic design through slide lectures. The course will study how graphic design responded to international, social, political, and technological developments since 1450. Emphasis will be on printed work from 1880 to present and the relationship of that work to other visual arts and design disciplines. *Also listed as COM 140.*

Art (ART) 131, **Drawing**, 3 credits. Prerequisite: Freehand drawing using basic drawing materials. Exploration of the figure, still life, other traditional and non-traditional sources for visual imagery. Emphasis on the visual concept and its relationship to techniques and materials.

Art (ART) 141, **Basic Two-Dimensional Design**, 3 credits. Introduction to underlying concepts for making and analyzing two-dimensional art. Use of design elements and principles with basic color theory to achieve specific goals for visual communication.

Technical/physical requirements for these courses:

- ART 126: Apple MAC lab required.
- ARH 140: regular classroom w/media projection equipment.
- ART 160: regular classroom w/media projection equipment; also, ART 160 has been offered as an online course at UM-Flint, and perhaps would be conducive to a mixed mode format.
- ART 131: studio-like space; enrollment generally limited to 15-20 students.
- ART 141: studio-like space; enrollment generally limited to 15-20 students.

Skill expectations for these courses:

- Interest in a career in visual arts
- Previous experience (TBD) in art classwork
- Other expectations TBD