



**DUAL  
ENROLLMENT**  
**EDUCATIONAL PARTNERSHIP**  
UTICA COMMUNITY SCHOOLS HIGH SCHOOL STUDENTS

## **2014-2015 DEEP PROGRAMS AVAILABLE FOR UTICA COMMUNITY SCHOOLS HIGH SCHOOL STUDENTS**

**UM-Flint faculty and DEEP Program officials will host an informational session at the Academic Blitz on February 6, 2014, 6:30 p.m., at Henry Ford II High School, 11911 Clinton River Rd., Sterling Heights in order to describe the courses & programs listed in this flyer and answer questions you may have about this academic opportunity.**

The Utica Community Schools is collaborating with the University of Michigan-Flint to offer the Dual Enrollment Educational Partnership. The DEEP initiative allows motivated students to earn college credit by taking accredited courses taught by UM-Flint faculty on-site at a Utica Community Schools facility, the Magahay Elementary Site, 44700 Oleander Drive, Sterling Heights. DEEP will do exactly what its name implies: deepen the students' knowledge and understanding of course material, while providing in-depth college courses that will prepare students for college and university academic expectations.

### **PRE-ENGINEERING PROGRAM (13 CREDITS)**

*Note: the course titles and descriptions listed below are accurate at the time of printing of this flyer. Occasionally, if instructional staffing issues arise, a UM-Flint department may opt to replace a listed course with an alternative course which will be appropriate for DEEP students.*

#### **FALL SEMESTER 2014 COURSES**

**Engineering (EGR) 165, Computer Aided Design, 3 credits.** Computer-Aided Design using parametric design and modeling. Creation of two- and three-dimensional drawings with geometric and dimensional tolerance. Constraint- and feature-based modeling based on concepts from theoretical computer graphics and related standards. Students exiting the course have increased ability to apply creativity along with constraint-based modeling to develop design and solution of problems. Lecture/laboratory with hands-on exercises using pro/ENGINEER software for creation of models and drawings. This course fulfills the Technology (T) General Education requirement at UM-Flint.

**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. This course fulfills the Technology (T) General Education requirement at UM-Flint.

#### **WINTER SEMESTER 2015 COURSES**

**Engineering (EGR) 102, Introduction to Engineering, 3 credits.** Introduction to engineering problem solving using scientific and mathematical principles, concepts, methods, modeling, design and analysis. Introduction to various engineering disciplines and career opportunities in each discipline and to communicate skills, ethics and professional responsibilities, and engineering analysis tools and techniques such as computer aided design (CAD) and computer aided engineering, etc. This course fulfills the Technology (T) General Education requirement at UM-Flint.

**Computer Science (CSC) 175, Problem Solving & Programming I, 4 credits.** Introduction to problem solving and programming principles appropriate for scientific and technical applications. Development of step-wise refinement and program decomposition methods. Programming language concepts including iteration, selection, input-output protocols, arrays, structures and subprograms. Programming language used is C++. This course fulfills the Technology (T) General Education requirement at UM-Flint.

### **MEDICAL SCIENCES PROGRAM (13 CREDITS)**

#### **FALL SEMESTER 2014 COURSES**

**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.

**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.

## WINTER SEMESTER 2015 COURSES

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

**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 inequalities in health, and the allocation of scarce resources. This course fulfills the Humanities (H) General Education requirement at UM-Flint.

## UNIVERSITY CREDIT

Students who participate in this program will be dual-enrolled in their home high schools and UM-Flint. Credit earned will be recorded on official UM-Flint transcripts as regular UM-Flint courses. These credits are applicable to four-year degree programs at UM-Flint and potentially to other institutions.

Students who intend to transfer these credits to another institution are advised that their intended/preferred transfer institution determines which credits will transfer. In this way, they are similar to Advanced Placement Program credits. The UM-Flint courses selected for inclusion in the Utica Community Schools DEEP program are considered by faculty as desirable because they will (a) help students develop a stronger academic foundation in the profession being studied, and (b) familiarize students with the rigors of college-level work. It should also be noted that highly competitive universities view with favor those applications "which demonstrate the applicant has consistently challenged him/herself academically by performing well in Honors, AP, IB, and college courses."

## PROGRAM QUALIFICATIONS

Selected high-ability, highly motivated senior students from the Utica Community Schools high schools will be eligible to enroll in the DEEP program. A selection process and criteria has been developed by the school district in cooperation with the Utica Community Schools and UM-Flint.

UM-Flint has established the following general expectations for DEEP program enrollees:

- An overall grade point average of 3.0+
- An interest in post-secondary study in the appropriate professional field
- The ability and motivation to undertake successfully the rigor of college-level coursework
- A favorable recommendation from the school principal or counselor addressing the strength of the applicant's preparation in a college preparatory high school curriculum, including successful completion of 3+ years of HS English with strong writing skills, and other similar characteristics

In addition, applicants for the Medical Sciences and the Pre-Engineering programs are expected to meet the following criteria:

- Pre-Engineering academic expectations: (1) completion or concurrent enrollment in Calculus or AP Calculus; and (2) completion or concurrent enrollment in high school physics
- Medical Sciences academic expectations: (1) successful completion of one year of HS biology (AP or Honors or close equivalent course); (2) successful completion of one year of HS chemistry or one year of HS physics (AP or Honors preferred), one of which may be taken concurrently with enrollment in the Medical Sciences DEEP program; (3) concurrent enrollment in mathematics coursework beyond Algebra II; (4) a record of excellent attendance in high school courses

Exceptions to these qualifications may be considered by the appropriate UM-Flint faculty.

## COSTS

As part of the partnership arrangement with Utica Community Schools, UM-Flint will provide partial funding support for DEEP programs which will reduce tuition and fee costs to students/parents by 25+%.

Equally important, a portion of the per pupil state funding (foundation allowance) Utica Community Schools receives will be used to further defray tuition/fee costs for participating DEEP students. Utica school officials estimate that in 2014-2015, students participating in the full-year 13-credit DEEP program in Pre-Engineering or Medical Sciences programs will incur an approximate cost of \$250 - \$350. **In both programs, the purchase of textbooks will be the student's responsibility.** Textbooks are projected at \$400 for the year, presuming purchase of used texts or rental of texts when that option is available. Note also that DEEP students typically will reduce their high school schedules by three courses in order to accommodate the college course schedule and travel time.

For purposes of comparison regarding the relative value of the DEEP program, regular tuition, fees, and textbooks for on-campus UM-Flint freshmen enrolled in the 13-credit Pre-Engineering or Medical Sciences sequence, are expected to total approximately \$5800 - \$5900 in 2014 - 2015.

## ENROLLING IN SINGLE COURSES

Utica students may opt to enroll in single courses within either of the programs listed in this flyer, PROVIDED that space remains following enrollment of students opting for the full-year 4-course programs. Students enrolling in a 3-credit course will have a 1-course reduction in their high school schedules; students enrolling in a 4-credit course will have a 2-course reduction in their high school schedules.

**Student tuition/fee costs for enrolling in singleton courses are estimated as follows:**

- Any 3-credit course in Medical Sciences: Approximately \$225-\$250 per course + textbook(s)
- Any 3-credit course in Pre-Engineering: Approximately \$240-\$265 per course + textbook(s)
- The 4-credit course in Pre-Engineering: \$0 + textbook(s)

## SCHEDULE OF DUAL ENROLLMENT CLASSES

DEEP courses are usually taught on a Monday/Wednesday or Tuesday/Thursday schedule each week. Each class session is 75 - 100 minutes in length, depending on the number of credits. Academic tutoring is provided for students in Friday tutorial sessions during which attendance is expected. DEEP courses are taught during the regular high school academic day, approximately noon - 1:45 p.m. DEEP courses generally follow the UM-Flint academic calendar; in the Winter semester, classes are generally not held during the mid-winter and spring break periods for the Utica high schools.

## APPLICATION AND SUBMISSION DEADLINE

DEEP application/grade release forms are available in each high school guidance office. In order to receive full consideration, these documents must be completed and signed and submitted with updated high school transcripts to your high school guidance office by **Friday, February 14**. After February 14, applications can be submitted on a space available basis.

