**UNIVERSITY OF WINDSOR**

**PROGRAM DEVELOPMENT COMMITTEE**

**COURSE LEARNING OUTCOMES FORM**

**COURSE NUMBER AND TITLE: COMP-2650. Computer Architecture I: Digital Design**

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| *Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in “To Greater Heights” by listing them in the appropriate rows.*  *Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. Each University of Windsor program should produce graduates that are able to demonstrate each of the nine characteristics approved in To Greater Heights.*  *Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Office of the Vice-Provost, Teaching and Learning or the Centre for Teaching and Learning, for assistance with the articulation of learning outcomes.* |

| **Course Learning Outcomes**  *(see* [***Appendix A***](http://cronus.uwindsor.ca/units/vpacademic/5yearplan/pdc-main.nsf/831fc2c71873e46285256d6e006c367a/19675240b519b389852569ad005c3538/$FILE/Form%202%20-%20Appendix%20on%20LOs%20and%20UDLEs.pdf) *for more on learning outcomes)*  At the end of the course, the successful student will know and be able to: | **Characteristics of a University of Windsor Graduate**  A U of Windsor graduate will have the ability to demonstrate: |
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|  |
| * Analyze and design combinatorial & sequential circuits. * Explain how a computer system works. * Explain methods of Boolean algebra and how they relate to circuit design. * Express minimal combinational and synchronous circuits. * Describe memory, counters, and registers. | A. the acquisition, application and integration of knowledge |  |
| * Define and realize different digital logic circuits and evaluate their performances such as speed or size. | B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy) |  |
| * Analyze and design combinatorial & sequential circuits. * Design arithmetic circuits, logic circuits and shifting circuits, according to specifications. * Design Arithmetic Logic Unit for processors. | C. critical thinking and problem-solving skills |  |
| * Explain how a computer system works. | D. literacy and numeracy skills |  |
|  | E. responsible behaviour to self, others and society |  |
|  | F. interpersonal and communications skills |  |
|  | G. teamwork, and personal and group leadership skills |  |
|  | H. creativity and aesthetic appreciation |  |
|  | I. the ability and desire for continuous learning |  |

**Verbs to Write Learning Outcomes**

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| **Knowledge** | **Comprehension** | **Application** | **Analysis** | **Synthesis** | **Evaluation** |
| define | describe | apply | analyze | arrange | appraise |
| list | discuss | demonstrate | appraise | assemble | assess |
| name | explain | dramatize | calculate | collect | choose |
| recall | express | employ | categorize | compose | compare |
| record | depict | illustrate | criticize | construct | estimate |
| relate | locate | interpret | debate | create | evaluate |
| underline | recognize | operate | diagram | design | judge |
| label | report | practice | differentiate | formulate | measure |
| quote | restate | schedule | distinguish | manage | rate |
| locate | review | sketch | examine | organize | revise |
| match | translate | use | experiment | plan | score |
| cite |  |  | inspect | prepare | select |
| reproduce |  |  | question | propose | value |
| identify |  |  | relate | combine | defend |
| state |  |  | solve | integrate | justify |
|  |  |  | test |  |  |
|  |  |  | classify |  |  |