Level 7

- **CSI 411 Artificial Intelligence**

The course provides an introduction to the types of problems and techniques in Artificial Intelligence. Problem-Solving methods and major structures used in Artificial Intelligence programs, constraint satisfaction problems. Study of knowledge representation techniques such as predicate logic, non-monotonic logic, and probabilistic reasoning. Application areas of AI such as game playing, expert systems, Machine learning, natural language processing, Neural Network, agents – multi-agents systems, and robotics. Project: cover some course areas using a logic programming tool (Prolog language for example).

- **CSI 412 Operating Systems**

Fundamental concepts of operating-systems, principles of modern operating systems, including operating systems structures, system performance and models, systems with multiprogramming, process and thread management, processor scheduling, synchronization, basic concepts of deadlock, memory management, File-System Interface ,Storage Structure ,Data Storage on Disks ,File-Systems : Fat ، Fat32 ، NTFS, Hardware Protection.

- **CSI 413 Compiler Design**

This course introduces the student to the design and implementation of compilers. Topics include: compiler organization, algorithms for lexical, syntactic and semantic analysis, top-down and bottom-up parsing (e.g., recursive descent, LL, LR, LALR parsing), symbol table organization, error detection and recovery, intermediate and object code generation, and code optimization. Student has to implement a compiler for a simple high level language (like mini C) as a project .