# COMPUTER SCIENCE (COMPUTER)

**COMPUTER 5520 Programming Language Structures 3 Credits**
A study of programming language topics which include data objects, data types, storage management, syntax, BNF descriptions, semantics, lexical analysis and parsing. Examples taken from traditional languages as well as more modern languages. P. COMPUTER 2630, Object-oriented Programming and Data Structures II.
**Components:** Class

**COMPUTER 6830 Special Topics in Computer Science 1-3 Credits**
The subject matter and instructor for each instance of this class will be listed in the class schedule. Students should check with the instructor for details.
**Components:** Class

**COMPUTER 7640 Machine Learning 3 Credits**
This course is designed to give graduate-level students a thorough foundation in methodologies and technologies needed for conducting research in machine learning and solving real-world problems using machine learning knowledge. The topics include general machine learning concepts and techniques such as expectation-maximization, maximum likelihood estimation, gradient descent as well as specific supervised, unsupervised and reinforcement learning methods such as inductive inference, artificial neural network, support vector machines, clustering, Markov decision processes, etc. Students will have the opportunity to experiment with machine learning techniques and apply them to selected problems in projects.
**Components:** Class

**COMPUTER 7920 Seminar Paper Research 1-3 Credits**
The student will be required to carry out a project and write a technical paper in computer science. The student must demonstrate the ability to survey a field of knowledge and assemble, organize, evaluate, interpret, and present evidence in a logical and intelligent manner. P. Completion of at least 15 credits of computer science graduate courses.
**Components:** Seminar