Master of Software Engineering

Year 1, Semester 1

Title	Description	Credits
Requirements Engineering	Theory and applications of requirements elicitation, analysis, modeling, validation, testing, and writing for hardware and software systems.	3 credits Term 1
Software System Design	Best practices in the requirements, analysis, and design of large software systems including the Unified Modeling Language and the Unified Process.	3 credits Term 2

Year 1, Semester 2

Title	Description	Credits
Pattern Oriented Design	This class examines well-known heuristics, principles, and patterns in the design and construction of reusable frameworks, packages, and components.	3 credits Term 1
Database Design Concepts	The requirements capture, design, and development of relational database applications; analysis of business requirements and development of appropriate database systems.	3 credits Term 2

Year 1, Semester 3

Title	Description	Credits
Software Systems Architecture	Software systems architecture; architectural design principles/patterns; documentation/evaluation of software architectures; reuse of architectural assets through frameworks/software product lines.	3 credits Term 1
Enterprise Integration	Advances in design, development, and deployment of control and management software for enterprise and production information systems.	3 credits Term 2

Year 2, Semester 1

Title	Description	Credits
Applied Human Computer Interaction	This course introduces the student to the broad area of human-computer interaction. Emphasis is placed on applying theories and techniques to the evaluation and design of software-based products that are both useful and usable. Students will gain an understanding of these concepts primarily by analyzing existing interfaces and developing prototypes. Students will be exposed to the challenges of usability testing through review of published studies and by developing a usability study design.	3 credits Term 1
Software Construction	Students will learn and practice the elements of constructing a large-scale distributed software system using current technologies.	3 credits Term 2

Year 2, Semester 2

Title	Description	Credits
Web Security and Privacy	A Web-centric look at the latest techniques and practices in computer security as they apply to the Internet.	3 credits Term 1
Software Testing	This course provides a rigorous formal framework and practical information on the testing of software throughout its life cycle.	3 credits Term 2

Year 2, Semester 3

Title	Description	Credits
Software Project Management	Analysis and construction of project plans for the development of complex software products; how to manage change and cost control.	3 credits Term 1
Software Engineering Studio	The 500-level studio provides an opportunity for students to undertake a substantial software project	3 credits Term 1 and 2