Course Number: 3460:408/508
Course Name: Windows Programming
Course Credits: 3
Schedule: Spring (last offered Spring 2007)

Syllabus Date: October 28, 2007
Prepared By: Dr. Yingcai Xiao

Prerequisites: Completion of 3460:210 or 421/521 with a grade of C- or better.

Text: Programming Microsoft .NET, Jeff Prosise, Microsoft Press

Bulletin Description:
Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, using object libraries, component object model, object linking and embedding, client-server objects.

Detailed Description:
This course will expose the student to the latest concepts and techniques in Windows Programming, will teach the student how to design and implement enterprise applications. Microsoft .Net and C# will be used as the tools to implement the programs. The basic concepts and techniques will be covered in the following categories.

1. .NET and C#
   The framework, FCL, CIL, CLR, CTS, Managed Code, Garbage collection, managed module, contents of a managed module, Metadata, reflection, C# class, struct, interface, enum, delegate, field, method, property, event, stack object, heap object, value type, reference type, boxing, exception handling, HTTP, HTML, HTML Forms, CGI, ISAPI, ASP, ASP.NET, ASP.NET Forms, ASP.NET Controls, IIS, Web Forms Programming Model, Page-Level Events, Code Behind, user controls, custom controls.

2. Enterprise Applications
   Multi-Tier Applications, ASP.NET Web Applications and Their Structures, Application Cache, Session State, Deployment.

3. Security

4. Data Management
   ADO.NET, Data Providers (SQL Server .NET Provider, OLE DB .NET Provider), Connections, Commands, DataReaders, DataSets, DataAdapters, Transaction.

5. XML
   XML Schema Definitions, XMLPath, XSLT, Multithreading.

6. Web Services
Architecture, Web Methods, WSDL, SOAP, XML, DISCO, UDDI, Web Service
Clients (Stand Alone, Web Based), Web Service Proxies, For-Fee Web Services.

Course Goals:
After the completion of this course, the student should understand the basic concepts of
Windows programming and should be able to design and implement industrial-strength
Windows/Internet applications/services.

Topics:
7. Overview
8. .NET Architecture
9. C# and CTS
11. ASP.NET and Web Forms
13. Data Management
14. XML
15. Web Services

Computer Usage:
Five programming assignments and one term project.

References:
Understanding .NET, David Chappell, Pearson
Microsoft .NET for Programmers, Fergal Grimes, Manning
Pro C# with .NET 3.0, Andrew Troelsen, apress
Microsoft Visual C#.NET Step by Step, John Sharp, Microsoft Press
Programming C#: Building .NET Applications with C#, Jesse Liberty, O’Reilly