EC512 – Enterprise Client/Server Software
Spring 2016

Instructor

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Reference Materials

- Numerous online resources, especially the World Wide Web Consortium (w3c.org).
- MSDN Library, Microsoft Developer Network. (http://msdn.microsoft.com or from Visual Studio 2015 help)
- Slides and other material provided on the course web site. See links on home page as well.
- Books of your choice if you need additional resources.

Prerequisites

Students must be fully competent in an object oriented programming language (C++, C#, or Java preferred). Familiarity with web technologies such as HTML, scripting, XML, etc. is helpful. Programming experience with a graphical user environment, MFC, .NET, AWT, X Toolkit, etc. is also very desirable.

Senior or graduate student status is required.

Course Goals

- To explore and use cutting edge technology for enterprise software development in the modern distributed environment afforded by the World Wide Web (WWW).
- To understand the implementation of these technologies.
- Integrate basic knowledge of computer networks with software design.
- Learn modern rapid application development (RAD) techniques.
- Develop experience in working with current and developing standards, e.g., W3C
- Gain an understanding of the issues of interoperability, cross platform migration and backward compatibility.
Grading

- 40% Attendance
- 60% Programming assignments

Attendance

Attendance is an imperative for success in this course. Much of the knowledge is gained through in class examples and discussion. Attendance is **required** and constitutes 40 percent of your grade. You will receive 2 points for every class attended up to the 40 points. There are more than 20 possible classes allowing extra classes beyond the 20 necessary for a perfect attendance score. You will receive a 0.5 point bonus for every class attended beyond 20. Bonus points apply directly to your average and are not required for achieving a perfect 100 points for the course. They will instead be used to compensate for lost points elsewhere in the course. There will be no excused absences including illness. The extra classes beyond the required 20 should be adequate for absences due to illness etc. You are strongly advised to attend all classes to achieve the best possible course grade. Do not rely on the total number of classes on the academic calendar as the university may have closures due to weather etc. Skip class only when you have no other choice.

Late Assignments

Late assignments will be accepted up to one week after the original due date with a 50% penalty. Assignments will not be accepted beyond one week late without extreme mitigating circumstances. Should a situation arise you must contact me in advance and I will decide if an extension is warranted. **There is no free late policy in this course.**

Software

The college is a member of the Microsoft DreamSpark program. As a student in this course you will be able to obtain the software and legally install it on your own system for academic and personal use only. You must abide by the special end user license agreement the college has agreed to.

You can download the software from ELMS, an online site under the DreamSpark program. Details about accessing DreamSpark via the Internet will be provided in class. A link is on the course web site. DreamSpark is now administered by ENG IT and I can't provide support.
Cheating

Any form of copying of any part of another student’s program or other source is plagiarism and will result in a grade of F. Students may assist one another in understanding the concepts of the course. I urge cooperation among students in helping each other with the concepts only. The line is drawn at the program code. Program code must be an individual effort. In addition to failing the course I will report all such academic misconduct to the student conduct review board. The easiest way to guarantee you are not crossing the line is to never look at anyone else’s code and do not show your code to anyone else.

Do not place code on public sites such as source control. You do not want to be involved in contributing to plagiarism.

Class Decorum

Please try to be on time. If you arrive late please enter the room discretely and close the door quietly. Reading newspapers or other non-course material during class is distracting to your classmates and extremely discourteous to everyone. Bring a cup of coffee if you can’t keep awake. Return from class break promptly. I have often delayed starting the class after the break waiting for students who are late. This denies your classmates of adequate lecture time. Please have the courtesy to inform me if you are unable to return for some reason.

The use of laptops, notebooks, tablets, and smart phones in class is not permitted. All computer lids must remain closed during class. This policy is a result of chronic student abuse. You get credit for attentiveness in class and not fooling with Facebook or Twitter. Take notes in a notebook.

Course Web Site

This course has a web site. Lab assignments and other material that is relevant to this course will be posted there. The web site will also contain copies of all course overheads. These can be viewed and/or printed as you prefer. The course web site is located at http://tomcat.bu.edu/ec512. Visit this site on a regular basis.
Weather Cancellations

During bad weather I sometimes have difficulty getting in because of where I live. In the event I can’t get in I will prepare a video of the lecture that will be posted on the course web site. This way we do not lose class time. I have used this in the past quite successfully. In the event of cancellation I will e-mail the class by 10 AM or earlier. If the university closes then this takes precedence. You will get attendance credit by viewing the video within a designated period of time and submitting a secret phrase embedded in the video.

Topics

This is a tentative list of topics. Not all topics will necessarily be covered and some not listed may be added. This is not meant to be a week by week listing but is the general order we will cover the topics.

1. Downloading and installing tools and resources from DreamSpark and the web.
2. Review of basic TCP/IP networking
3. HTML, HTTP, servers and other basic concepts
4. Using Visual Studio 2015 and for HTML authoring
5. Legacy server side technologies, CGI, ISAPI etc.
6. .NET technology overview, ASP.NET.
7. Important C# concepts (probably will be left up to you to learn)
8. An introduction to the framework class library (brief).
9. Web forms using ASP.NET and C#
10. Scripting on the client, JavaScript and jQuery, debugging script with VS2015
11. Dynamic HTML (DHTML), HTML5, document object models, styles and other advanced client side techniques
12. Web controls and user controls
13. Database access with ADO.NET and Visual Studio tools (including LINQ)
14. Use of SQL Server and Microsoft Access
15. Web applications, session state, dynamic content, etc.
16. AJAX
17. Encryption and authentication, login and roles

Optional topics

1. LightSwitch, Silverlight, and Azure (cloud)
2. XML/SOAP web services
3. XML support in .NET (brief)
4. Writing multithreaded applications
5. Mobile technologies (probably only very brief discussion of the limitations)
6. Content Management Systems (CMS), portals etc.