



Syllabus



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COURSE SYLLABUS

CMPL 618: Visual Programming II - 4 Credits

Online

Fall, 2008

September 13 - December 12;

(Holidays: Veteran's Day, November 11 & Thanksgiving Break: November 22-28)

Last Updated: July 30, 2008



Instructor: Instructor: Alan LaPenn, BS

Contact Info: alan_lapenn@comcast.net *(after the course begins please use Blackboard private Messages)*

Course Description

Overview

This course introduces learners to advanced programming techniques in the Visual Studio.NET environment. Topics include object-oriented implementation through class development, ADO.NET interaction with multiple database sources, XML, ASP.NET, and application deployment. Upon completion learners will be able to develop complex programs using advanced tools available in the Visual Studio.NET framework. The central theme of this course is mastery of object-oriented concepts in the .NET framework. The functional components of such an effort include application of database interaction, utilizing XML and developing for cross-platform portability.

Prerequisites

CMPL 518: Visual Programming I

Learning Outcomes

At the completion of the course, learners will be able to:

- Develop applications and components using Visual Studio .NET (Modules 1-12)
 - Apply object-oriented concepts and tools when designing applications (Module 3-4)
 - Use structured error-handling (Module 5)
 - Access data using ADO.NET and bind controls to the underlying data sources (Module 7-8)
 - Create windows applications and custom Windows controls (Module 6)
 - Understand the basics of APS.NET and Web services (Module 9-10)
 - Apply advanced data structure concepts and tools (Module 11)
 - Understand and apply multithreading techniques (Module 12)
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Course Resources

Textbook(s):

- **Microsoft Visual Basic 2005 Reloaded: Advanced, Tompson Course Technology**, Richard Johnson and Diane Zak, Course Technology, ISBN: 1-4188-3643

Textbooks are available via GSC's online bookstore, MBS Direct at:

<http://bookstore.mbsdirect.net/gsc.htm> (The course-CRN number for ordering this textbook is: 10104). Textbooks can also be purchased from MBS via phone, mail or fax. For additional information, visit the [Online Bookstore](#) section of the college web site.

Software:

The following Software will be provided to you at nominal cost under the terms of the Microsoft Developers Network Academic Alliance program. Licensing requirements and distribution methodologies will be detailed in the course. A course link will be provided to students in order to order the software prior to the start of the course.

- **Microsoft Visual Studio 2005 Professional Edition**
- **XP Professional OS with Service Pack 2**
- **Microsoft Visio Professional 2007**
- **DVD DRIVE TO INSTALL SOFTWARE**
- **MINIMUM SYSTEM REQUIREMENTS** see link below
<http://msdn2.microsoft.com/en-us/express/aa718403.aspx#exall>

NOTE: The ZAK text is certified only for use with MS XP PROFESSIONAL OS and some of the programs are not certified to run on VISTA OS. However, every effort will be made to assist Vista users in the class.

NOTE: VISTA OS USERS: If you have VISTA OS – using Visual Studio 2005 then you will need to install [Visual Studio 2005 Service Pack 1](#) and the [Service Pack 1 Update for Windows Vista Visual Studio 2005](#).

<http://windowsupdate.microsoft.com/> service pack 2 required

<http://www.microsoft.com/windowsxp/sp2/default.mspx>

Note: <http://www.microsoft.com/express/2005/>

Visual Studio 2005 .NET system requirements are quite precise and can be found on the link above. You can also download a FREE version of Visual Basic 2005 Express. Please review the requirements before attempting to install Visual Studio 2005.

Also note the limitations of Windows XP Home for development. To develop ASP.NET applications (which we will begin in Visual Programming I and continue in Visual Programming II) on the Windows XP platform, Windows XP Professional is required. This software can be obtained through the MSDN-AA in order to upgrade from Windows XP Home to Windows XP Professional.

Additional Software:

In order to complete some of the database activities for this course it may be necessary for you to install additional software. While having this software is required, you may already have the software installed. The necessary diagnostic instructions and software downloads will be available from the Blackboard course.

Microsoft SQL Server 2005 Express Edition (Free Version).

Additional Resources:

The additional resources you need for this course are:

- A Zip program (WinZip, PKZip) available via www.downloads.com or you may use the

Windows XP compression utility

- Data files included with the textbook. (See page xviii of your textbook for download instructions)

You need to have a sound card and speakers to hear the multimedia presentations that will be part of this course I recommend you test your sound card and speakers before you try to run any of the multimedia slideshows or viewlets. Textbooks can also be purchased from MBS via phone, mail or fax. For additional information, visit the [Online Bookstore](#) section of the college web site.

Blackboard Orientations

There are no face-to-face sessions for this course. If you have never taken an Online Interactive Course (OIC) at the college, we highly recommend that you attend one of the [2-hour Blackboard Orientation sessions](#) available throughout the state. If you choose not to attend a face-to-face session, you are encouraged to complete the [Online Orientation with audio](#) at your own convenience.

Course Policies

Late Work to Instructor: Because the success of our course is partly dependant upon the ability of the Instructor to provide feedback on student work in a timely fashion, it is the student's responsibility to meet all due dates for submitting work to the Instructor. Any quizzes or programming projects that are not submitted to the instructor by their initial due date will automatically be subject to a full letter grade reduction when. Any assignments submitted to the Instructor more than 2 days (48 hours after the initial due date will not receive more than a "C" grade when. Lastly, any work submitted to the instructor more than a week after it's initial due date will receive an automatic F.

Computer Problems and Saving Work: Computers are known to break down and do other unpredictable things. You are responsible to take all precautions and have contingency plans in place in case of such mishap. Computer problems are NOT valid excuses for late work. It is recommended that you create and save back up files to either a CD, or another electronic storage devise for every piece of work you complete for this class. Saving duplicate copies of your work to an external source will ensure that a computer glitch or a glitch in cyberspace won't erase your efforts. If you have a computer malfunction, please be prepared to use another computer i.e. at on of the GSC centers, or a public library etc.

Feedback Wanted: I am interested in your feedback on how I can make this course better. Students are encouraged to send me a private message with suggestions on how I can make this a better course. Please don't wait until evaluation time because I won't see those comments until the term is over.

Extended Sickness and Personal Tragedy: Success in this course requires regular and consistent participation. If you find yourself in a situation in which this is a problem, you will be encouraged to withdraw the course and retake it when you are in better health/circumstances. Students are expected to contact the professor if such a situation arises as early as possible.

Purchasing Course Materials: It is the learner's responsibility to have purchased all required course materials before the start of the course. Learners are expected to meet all course expectations even if the shipment of a required textbook or other learning resource is delayed. Be sure to choose the shipping option that will get your text/resource delivered in a timely manner.

Description of Course Activities and Requirements

Evidence of Accomplishment

Participation

Participation is evidenced by active involvement in discussion sessions and deliverables, providing feedback on to your peers when appropriate, responding to questions and posting your required materials on time. Assessment details are provided in the participation rubric available to registered students.

Collaborative Discussion Questions

The strategies and approaches to problems in this complex environment are challenging. While practice in applying these strategies and approaches is necessary, having the opportunity to discuss the framework for development and spend time considering the nuances of various approaches is important. Given the compressed schedule of the summer, collaboration will come in the form of ongoing conversation, rather than program review. The genesis of this conversation will be discussion questions I will post. Assessment details are provided in the participation rubric available to registered students.

Programming Problems

Each of the twelve modules of this course will have a concluding programming problem assigned. Together these problems will provide you an opportunity to demonstrate your learning in the seven broad areas of the course. Submission and assessment details of this assignment are available to registered students.

Self-Assessment

At the beginning of the term you will spell out your personal goals and objectives for your work in this class. At the end of the term you will submit your assessment of your personal progress toward meeting those goals, and you will assign yourself an outcome-based grade. Submission and assessment details are available to registered students.

NOTE: Students must receive a grade of "C" or better for all courses in their major.

Grading Percentages

Your final grade for the course will be calculated as follows:

Activity	% of Final Grade
General Participation	10%
Collaborative Discussions	20%
Self-Assessment	20%
Programming Problems	50%
Total	100%

Grades in this class will follow the scale of Granite State College, where A/4.0 is awarded for Excellent work and F/0.0 is awarded for Failure/ No credit.

Granite State College Standard Grading Scale

Grade	Percent	Grade Points	Level of Achievement
A	95-100	4.0	Excellent
A ⁻	90-94	3.67	
B ⁺	87-89	3.33	Good
B	84-86	3.0	
B ⁻	80-83	2.67	
C ⁺	77-79	2.33	*Acceptable
C	74-76	2.0	
C ⁻	70-73	1.67	†
D ⁺	67-69	1.33	Poor
D	64-66	1.00	
D ⁻	60-63	0.67	
F	≤59	0	Failure, no credit
*A grade of C or better is required to fulfill requirements in the major, minor, or general education core at GSC. Please consult the GSC catalog for details.			
† A grade of C ⁻ or below generally does not transfer to other academic institutions.			

Course Schedule & Topics

Module	Assignments/Activities
Module 1: Intro to Visual Basic part 1 Sept. 13 - 19 (1 Week)	<ul style="list-style-type: none"> • Creating a User Interface • Variables, Constants, Methods, and Calculations • Making Decisions in Programs • Repeating Program Instructions • Discussion question(s) • Programming Problem #1 • Goals and Objectives
Module 2: Intro to Visual Basic part 2 Sept 20 – Sept 26 (1 Week)	<ul style="list-style-type: none"> • String Manipulation and More Controls • Sub and Function Procedures • Arrays • Structures and Sequential Access Files • Discussion question(s) • Programming Problem #2
Module 3: Objects and Classes Sept 27 – Oct 3 (1 Week)	<ul style="list-style-type: none"> • Understanding Objects and Classes • Implementing Classes • Instantiating and Using Objects • Exploring Class Relationships • Discussion question(s) • Programming Problem #3
Module 4: Inheritance and Polymorphism Oct 4 – Oct 10 (1 Week)	<ul style="list-style-type: none"> • Inheritance among Visual Basic Predefined Classes • Inheritance among Programmer-Defined Classes • Inheritance: Overloading and Overriding • Using Inheritance in Applications • Abstract Classes and Methods • Polymorphism and Overtyping • Discussion question(s) • Programming Problem #4

Module 5: Input Validation, Error Handling Oct 11 – Oct 17 (1 Week)	<ul style="list-style-type: none"> • Input Validation • Runtime Errors and Exceptions • Class Error Handling in Visual Basic • Exception Classes in the .NET Framework • Structured Exception Handling in Visual Basic .NET • Programmer-Defined Exceptions • Discussion question(s) • Programming Problem #5
Module 6: More about Windows Forms Oct 18 – Oct 24 (1 Week)	<ul style="list-style-type: none"> • Enhancing a GUI's Appearance and Functionality • Menus • Multiple-Document-Interface Windows • Discussion question(s) • Programming Problem #6
Module 7: Relational Databases and SQL Oct 25 – Oct 31 (1 Week)	<ul style="list-style-type: none"> • The Relational Database Model • SQL (Structured Query Language) • Using Microsoft SQL Server 2005 • Discussion question(s) • Programming Problem #7
Module 8: Accessing Data with ADO.net Nov 1 – Nov 7 (1 Week)	<ul style="list-style-type: none"> • Linking a Database and an Application • Adding Database Functionality to an Application • Using SQL in Applications • Discussion question(s) • Programming Problem #8
Module 9: An Intro to ASP.NET Nov 8 – Nov 14 (1 Week)	<ul style="list-style-type: none"> • Introduction to Web Applications • Scripting and ASP.NET • Creating a Web Site with ASP.NET • Using Web Server Controls • Using Tables for Form Layout • Discussion question(s) • Programming Problem #9
Module 10: ASP.NET: Database, XML Web Services Nov 15 – Nov 21 (1 Week)	<ul style="list-style-type: none"> • Accessing Data in a Web Application • Introduction to XML • Introduction to Web Services • Discussion question(s) • Programming Problem #10
Thanksgiving Break: November 22-28	
Module 11: Arrays, Collections and generics Nov 30 – Dec 5 (1 Week)	<ul style="list-style-type: none"> • More about Arrays • Collections • Generics • Discussion question(s) • Programming Problem #11
Module 12: Multithreading in Visual Basic Dec 6 – Dec 12 (1 Week)	<ul style="list-style-type: none"> • Overview of Multithreading • Thread States, Priority, and Synchronization • Multithreading in a Console Application • Multithreading with Windows Forms • Discussion question(s) • Programming Problem #12

Note: The schedule above may change at the instructor's discretion.

Library Resources

Granite State College has a Virtual Library (<http://www.granite.edu/current-students/virtual-library/>) available 24/7 with access to the full-text of thousands of journals and professional periodicals, an

online Reference Room, selected Internet resources, writer's resources, research and citation help, and a collection of tutorials. The databases are password protected.

See GSC Library tab in MyGranite for username and password. In addition, the **Library Info** link in the course menu provides direct links to research databases, *Research FAQs* and more.

Academic Resources and Information Services

Academic assistance to students is available at GSC Centers at no additional charge in such areas as basic skills preparation in reading, writing and math; study skills and research and citation help. Academic Resources staff members work closely with faculty and students toward academic success. A whole range of tools is available, including study and time management tips, APA and MLA citation assistance, access to learning resources online, and feedback on course writing projects. To contact an Academic Resource and Information Coordinator, see the Academic Resource Link on the Resources page in the course menu or go directly to http://bbresources.granite.edu/course_docs/acad_resources.htm.

Technical Assistance

For assistance with issues related to accessing the MyGranite portal, GSC email, Webrock, online courses or other technical issues related to any of the Blackboard tools, please visit the GSC Technical Assistance Center (<http://bbresources.granite.edu/techassist/help.htm>) for answers to the most frequently asked questions or to submit an online help request form. Or call **1-888-372-4270** (Hours: M-F, 8:30-5:00, messages checked twice daily on weekends. Extended hours for the week before start of the term and first week of the term: M-Th, 8:00-7:00.)

Documented Disabilities / Americans with Disabilities Act

Granite State College will provide qualified individuals with disabilities the same educational opportunities available to persons without disabilities. When an individual's documented disability creates a barrier to educational opportunities, the College will attempt reasonable accommodation to remove the barrier. If you need assistance, we recommend that you make contact early to ensure that your requests can be reviewed prior to the start of each term. If you wish to apply for accommodations, contact your academic advisor or the Dean of Learner Services in Concord. See the complete Granite State College policy in the current college catalog for further details.

Academic Honesty

An academic community is based on honesty and integrity. Plagiarism, cheating, or other forms of academic dishonesty are not acceptable at Granite State College. Faculty and students have a joint responsibility to ensure the integrity of learning.

All work that you submit must be your own except in those instances when your instructor gives specific permission to collaborate. When quoting, summarizing or explaining ideas that are based on another's work, whether in print or online, make sure to cite references appropriately. Plagiarism is using another's words or even paraphrasing another's work without giving proper credit through the use of citations.

For Granite State College's complete [academic honesty policy](#), see the current college catalog.

Conduct in the Online Classroom

Membership in society implies minimal norms for civil behavior towards one another. It is Granite State College's expectation that all members of our college community treat faculty, staff, and fellow learners with respect. Learners need to be knowledgeable of and comply with college policies. Each individual is accountable for his/her actions and for the consequences of any behavior that is inconsistent with these values and expectations.

Institutional Assessment

Assessment is an ongoing process that enables the College to improve its programs, courses, and teaching methods. Institutional evaluation may be embedded in tests, exams, and other measurements of student learning. As members of a learning community, students, faculty, and staff will be expected to participate in the important process of assessment on occasion. Confidentiality of any data that identify participants is maintained.

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