

Course Syllabus

PREFIX, NUMBER, AND TITLE: CIS 361 Advanced Programming for Business Applications

CREDIT HOURS: 3

UNIVERSITY NAME: Dakota State University

ACADEMIC TERM/YEAR: Spring 2009

COURSE MEETING TIME AND LOCATION:

Section D01 Internet

Section D02 Internet

INSTRUCTOR'S CONTACT INFORMATION:

Name: Christopher J. Olson

Office: East Hall Room 104B

Phone: 605-256-5688 (office)

605-256-5165 (secretary)

Office hours: Virtual **see Description of Instructional Methods*

Physical - please email for appointment

Email address: chris.olson@dsu.edu

COURSE DESCRIPTION:

Catalog Description: This course will emphasize advanced topics of business programming using contemporary development tools. Additional topics may include: objects, databases, multithreading, error trapping and web-based applications.

COURSE PREREQUISITES:

CIS 251 or permission from the instructor

Technology Skills: Word processing, Internet Desire2Learn, and electronic mail. Students will be required to use email for communication. Desire2Learn will be used to deliver course materials and weekly assignments, as well as serve as a communication tool between students and faculty.

***DESCRIPTION OF INSTRUCTIONAL METHODS:**

Students will be given lab assignments, quizzes, and exams through an online medium. Students should expect to login to the Desire2Learn site several times a week. Students must be motivated to stay on task and complete the coursework without benefit of lecture sessions. Keeping up on reading the assigned chapters and notes will be absolutely necessary for completing the labs (assignments) on time.

You are expected to use the steps in the textbook to complete the programs in the tutorials. Doing so should give you the skills you need in order to successfully complete the lab assignments. Looking the textbook over or reading it several times is not the same as actually using the code to create the desired programs.

Because this is an online class delivered through Desire2Learn, it is crucial that you have reliable access to the Internet on a regular basis. You should have a backup plan if needed, as the inability to connect to the Internet is **NOT** a valid excuse for missing a submission deadline.

I will be available most afternoons and evenings to answer questions. Email is my preferred form of communication and I check regularly throughout the day. While I cannot guarantee you an immediate answer to your inquiry, I will always do my best to reply in a timely manner. It is unlikely that you will ever have to wait more than a day for a response.

COURSE REQUIREMENTS:

Required Textbook And Other References:

Programming in Visual Basic 2008, 7th Edition
Julia Case Bradley, Anita C Millspaugh
McGraw-Hill Higher Education
Softcover, 704 pages
Copyright: 2009
ISBN:9780073517209

Required Software: You will need some version of Microsoft Visual Basic 2008 for this class. DSU Tablet PCs should have Visual Studio 2008 (which includes Visual Basic 2008) installed. If not, contact the instructor for directions on how it can be downloaded for free.

System Requirements: To run the software required for this class, you will need a computer with either Windows XP or Windows Vista. The table below lists the hardware requirements:

	CPU Processor Speed	Memory (RAM)	Display
Minimum	1.6 GHz or higher	192 MB or more	1024 x 768
Recommended	2.2 GHz or higher	384 MB or more	1280 x 1024
Windows Vista	2.4 GHz or higher	768 MB or more	1280 x 1024

As strongly as I can, I suggest having access to a high speed broadband Internet connection. Dial up is unreliable for tests and won't handle streaming Internet videos that should be extremely helpful.

Attendance Policy: Attendance is expected through Desire2Learn and the submission of assignments, quizzes, and tests. You will not be successful in this course without regular participation and attendance through Desire2Learn.

Academic Integrity Policy: Copying and cheating will be severely punished. Identical or nearly identical electronic submissions of any form will be closely scrutinized to detect cheating. While the free flow of ideas and information is essential to an education, the exchange of assignments and materials cannot be. Dakota State University pledges itself to continue its commitment to provide students with a quality education. To this end, the faculty of DSU will not tolerate academic dishonesty in any form. The Academic Integrity Policy clarifies the definition of academic dishonesty, the student's rights, and the faculty rights and responsibilities to prohibit, limit, and censure violations of academic integrity.

Please see the student handbook for penalties concerning student cheating. [DSU's Academic Integrity Policy is available online.](#)

All forms of academic dishonesty will result in a failing grade (as in absolutely no credit) on the assignment. If you copy from another or allow another to copy from you, you have cheated. Any student who does so will automatically be penalized so that a B will be the highest letter grade he or she may earn for an overall course grade. A formal acknowledgement that you violated academic integrity policies will be placed in your permanent academic records. If there is a second offense by the same student(s), they will fail the course.

Copying code - even a single line - from another past or present student and modifying a few variable names, comments, or whitespace is not doing your own work and is considered cheating. I've been around code long enough to know when it has been copied from another student. Don't cheat. You will get caught. I wouldn't think I would need to include these statements, but past experience has taught me otherwise.

Make-up Policy for Missed Submission Deadlines:

- **Tests:** Make-up examinations **will not be given unless prior approval is granted from the course instructor.** Tests will be given via Desire2Learn and only made available at certain times. I have tests available for a full week, so plan accordingly so you can take the test before the deadline passes.
- **Assignments:** Late labs will be penalized 5 points per school day and will not be accepted after 4 days. The deadlines for assignments will be followed. Exceptions may be granted in special situations, but this will be the exception rather than the rule. Those with extenuating circumstances should ask for an extension before the due date.
- **Quizzes:** Quizzes cannot be made up.

FREEDOM IN LEARNING STATEMENT:

Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. It has always been the policy of Dakota State University to allow students to appeal the decisions of faculty, administrative, and staff members and the decisions of institutional committees. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

ADA STATEMENT:

If you have a documented disability and/or anticipate needing accommodations (e.g., non-standard note taking, test modifications) in this course, please arrange to meet with the instructor. Also, please contact Dakota State University's ADA coordinator, Keith Bundy in the Student Development Office located in the Trojan Center Underground or at 256-5121, as soon as possible. The DSU website containing additional information, along with the form to request accommodations is http://www.departments.dsu.edu/disability_services/. You will need to provide documentation of your disability. The ADA coordinator must confirm the need for accommodations before officially authorizing them.

COURSE GOALS:

Chapter Topics

Chapter 1 - Introduction to Visual Basic 2008

- Describe the process of visual program design and development.
- Explain the term object-oriented programming.
- Explain the concepts of classes, objects, properties, methods, and events.
- List and describe the three steps for writing a Visual Basic project.
- Describe the various files that make up a Visual Basic project.
- Identify the elements in the Visual Studio environment.
- Define design time, run time, and debug time.
- Write, run, save, print, and modify your first Visual Basic project.
- Identify syntax errors, run-time errors, and logic errors.
- Use AutoCorrect to correct syntax errors.
- Look up Visual Basic topics in Help.

Chapter 2 - User Interface Design

- Use text boxes, masked text boxes, rich text boxes, group boxes, check boxes, radio buttons, and picture boxes effectively.
- Set the BorderStyle property to make controls appear flat or three-dimensional.
- Select multiple controls and move them, align them, and set common properties.
- Make your projects easy for the user to understand and operate by defining access keys, setting an Accept and a Cancel button, controlling the tab sequence, resetting the focus during program execution, and causing ToolTips to appear.
- Clear the contents of text boxes and labels.
- Make a control visible or invisible at run time by setting its Visible property.
- Disable and enable controls at design time and run time.
- Change text color during program execution.
- Code multiple statements for one control using the With and End With statements.
- Concatenate (join) strings of text.
- Download the line and shape controls, add them to the toolbox, and use the controls on your forms.

Chapter 3 - Variables, Constants, and Calculations

- Distinguish between variables, constants, and controls.
- Differentiate among the various data types.
- Apply naming conventions incorporating standards and indicating the data type.
- Declare variables and constants.
- Select the appropriate scope for a variable.
- Convert text input to numeric values.
- Perform calculations using variables and constants.
- Convert between numeric data types using implicit and explicit conversions.
- Round decimal values using the Decimal.Round method.

- Format values for output using the ToString method.
- Use Try/Catch blocks for error handling.
- Display message boxes with error messages.
- Accumulate sums and generate counts.

Chapter 4 - Decisions and Conditions

- Use If statements to control the flow of logic.
- Understand and use nested Ifs.
- Read and create action diagrams that illustrate the logic in a selection process.
- Combine conditions using And, Or, AndAlso, and OrElse.
- Test the Checked property of radio buttons and check boxes.
- Perform validation on numeric fields.
- Use a Case structure for multiple decisions.
- Use one event procedure to respond to the events for multiple controls and determine which control caused the event.
- Call an event procedure from another procedure.
- Create message boxes with multiple buttons and choose alternate actions based on the user response.
- Debug projects using breakpoints, stepping program execution, and displaying intermediate results.

Chapter 5 - Menus, Common Dialog Boxes, Sub Procedures, and Function Procedures

- Create menus and submenus for program control.
- Display and use the Windows common dialog boxes.
- Create context menus for controls and the form.
- Write reusable code in sub procedures and function procedures and call the procedures from other locations.

Chapter 7 - Lists, Loops, and Printing

- Create and use list boxes and combo boxes.
- Differentiate among the available types of combo boxes.
- Enter items into list boxes using the Items collection in the Properties window.
- Add and remove items in a list at run time.
- Determine which item in a list is selected.
- Use the Items.Count property to determine the number of items in a list.
- Display a selected item from a list.
- Use Do/Loops and For/Next statements to iterate through a loop.
- Terminate a loop with the Exit statement.
- Skip to the next iteration of a loop by using the Continue statement.
- Send information to the printer or the Print Preview window using the PrintDocument class.

Chapter 8 - Arrays

- Establish an array and refer to individual elements in the array with subscripts.
- Use the For Each/Next to traverse the elements of an array.
- Create a structure for multiple fields of related data.
- Accumulate totals using arrays.

- Distinguish between direct access and indirect access of a table.
- Write a table lookup for matching an array element.
- Combine the advantages of list box controls with arrays.
- Store and look up data in multidimensional arrays.

Chapter 10 - Database Applications

- Use database terminology correctly.
- Create Windows and Web projects that display database data.
- Display data in a DataGridView control.
- Bind data to text boxes and labels.
- Allow the user to select from a combo box or list box and display the corresponding record in data-bound controls.
- Query an object using LINQ.

Chapter 11 - Data Files

- Store and retrieve data in files using streams.
- Save the values from a list box and reload for the next program run.
- Check for the end of file.
- Test whether a file exists.
- Display the standard Open File and Save File dialog boxes to allow the user to choose or name the file.

Chapter 12 - OOP: Creating Object-Oriented Programs

- Use object-oriented terminology correctly.
- Create a two-tier application that separates the user interface from the business logic.
- Differentiate between a class and an object.
- Create a class that has properties and methods.
- Declare object variables and use property procedures to set and retrieve properties of a class.
- Assign values to the properties with a constructor.
- Instantiate an object in a project using your class.
- Differentiate between shared members and instance members.
- Understand the purpose of the constructor and destructor methods.
- Inherit a new class from your own class.
- Apply visual inheritance by deriving a form from another form.

Chapter 13 - Graphics, Animation, Sound, and Drag-and-Drop

- Use graphics methods to draw shapes, lines, and filled shapes.
- Create a drawing surface with a Graphics object.
- Instantiate Pen and Brush objects as needed for drawing.
- Create animation by changing pictures at run time.
- Create simple animation by moving images.
- Use the Timer control to automate animation.
- Use scroll bars to move an image.
- Add sounds to a project.
- Incorporate drag and drop events into your program.
- Draw a pie chart using the methods of the Graphics object.

Chapter 14 - Additional Topics in Visual Basic

- Validate user input in the Validating event and display messages using an ErrorProvider component.
- Use code snippets in the editor.
- Create a multiple document project with parent and child forms.
- Arrange the child forms vertically, horizontally, or cascaded.
- Add tool bars and status bars to your forms using tool strip and status strip controls.
- Use calendar controls and date functions.
- Display a Web page on a Windows form using a WebBrowser control.
- Capture and check an individual keypress from the user.
- Use WPF Interoperability to add Windows Presentation Framework controls to a Windows Form.
- Create a WPF application.

ACCREDITING AGENCY STANDARDS ADDRESSED IN THE COURSE:

NCATE: Standard #1 Candidate Knowledge, Skills, and dispositions. Candidates preparing to work in schools as teachers or other professional school personnel know and demonstrate the content, pedagogical, and professional knowledge, skills, and dispositions necessary to help all students learn. Assessments indicate that candidates meet professional, state, and institutional standards at professionally acceptable levels.

DECA: 24:16:08:23. 7-12 business education program. A 7-12 business education program shall comply with all standards in general education, professional education, and 7-12 secondary education program requirements, and require coursework sufficient to constitute a major, with at least 50 percent in upper division coursework, which includes the following:

1. Study of accounting, computation, and finance;
2. Study of economics and international business;
3. Study of business law, management, marketing, entrepreneurship education, and interrelationships of business functions, including national policies, ethics, and political thinking;
4. Study of communications and career development;
5. Study of information systems;
6. Study of office technology, including study related to 7-12 program planning and development; and
7. Business-related occupational work-based practicum or internship.

DECA: 24:16:08:35. K-12 educational technology program. A K-12 educational technology education program shall comply with all standards in general education, professional education, and K-12 education program requirements, and require course work sufficient to constitute a major, with 50 percent in upper division coursework, which includes the following:

1. Study in basic educational technology that builds a foundation for using computers and related technologies in educational setting. Content includes:
 - a. Basic computer/technology operations and concepts;
 - b. Personal and professional use of technology; and
 - c. Appropriate use of technology in instruction.

2. Study in basic educational technology that provides concepts and skills preparing teachers to teach applications and use technology to support other content areas. Topics include:
 - a. Social, ethical, and human issues;
 - b. Productivity tools;
 - c. Telecommunications and information access;
 - d. Research, problem solving, and product development;
3. Preparation in educational technology that prepares teachers for integrating teaching methodologies with knowledge about use of technology to support teaching and learning. Content includes:
 - a. Teaching methodology; and
 - b. Hardware/software selection, installation, and maintenance; and
4. Study in educational technology leadership that prepares teachers for exhibiting leadership in the identification, selection, installation, maintenance, and management of computing hardware and software and the uses of computers and related technologies throughout the curriculum. Content includes:
 - a. Research and theories;
 - b. Instructional design and product development;
 - c. Information access and delivery;
 - d. Operating systems; and
 - e. Software/hardware selection, installation, and maintenance.

EVALUATION PROCEDURES:

Grade Composition:

Submission	Quantity	Points per Submission	Total Points	% of Grade
Tests	3	50	150	30%
Assignments	12	25	300	60%
Quizzes	5	10	50	10%
TOTAL	-	-	500	100%

Grading Scale:

Total Points	% Equivalent	Letter Grade
450 to 500	90 - 100%	A
400 to 449	80 - 89.99%	B
350 to 399	70 - 79.99%	C
300 to 349	60 - 69.99%	D
0 to 299	below 60 %	F

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- **Quizzes:** Quizzes cannot be made up.

The class officially ends Friday, May 8, 2008 at 5 PM Central. The last test and all coursework must be completed before that time. No exceptions.

TENTATIVE COURSE OUTLINE:

The instructor reserves the right to make adjustments in the course outline to better meet the needs of the students.

Week	Chapter	Labs	Quizzes	Tests	Due Date
Week 1	Chapter 1 Introduction to Visual Basic 2008		Quiz 1		01/17/09
Week 2	Chapter 2 User Interface Design	Lab 1			01/24/09
Week 3	Chapter 3 Variables, Constants, and Calculations	Lab 2			01/31/09
Week 4	Chapter 4 Decisions and Conditions	Lab 3	Quiz 2		02/07/09
Week 5	Chapter 5 Menus, Sub and Function Procedures	Lab 4			02/14/09
Week 6	Chapter 7 Lists, Loops, and Printing	Lab 5		Test 1	02/21/09
Week 7	Chapter 8 Arrays		Quiz 3		02/28/09
Week 8	Chapter 8 Arrays	Lab 6			03/07/09
<i>*** Spring Break - March 9 to March 15 ***</i>					
Week 9	Chapter 10 Database Applications	Lab 7			03/21/09
Week 10	Chapter 10 Database Applications	Lab 8			03/28/09
Week 11	Chapter 11 Data Files	Lab 9		Test 2	04/04/09
Week 12	Chapter 12 OOP: Creating Object-Oriented Programs		Quiz 4		04/11/09
Week 13	Chapter 12 OOP: Creating Object-Oriented Programs	Lab 10			04/18/09
Week 14	Chapter 13 Graphics, Animation, and Drag-and-Drop	Lab 11	Quiz 5		04/25/09
Week 15	Chapter 14 Additional Topics in Visual Basic	Lab 12			05/02/09
Week 16	Chapter 14 Additional Topics in Visual Basic			Test 3	05/08/09

ADDITIONAL INFORMATION:

Modifications to the Course: The instructor reserves the right to make adjustments to this syllabus during the course of the semester in order to better meet the needs of the students.