



## Syllabus

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# COURSE SYLLABUS

## CMPL 515: Programming Fundamentals 4

### Credits

Online

Fall Term 2008

September 13 – December 12; *(Thanksgiving Break: November 22-28)*

Last Updated: July 28, 2008



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**Instructor: Instructor: Jay Partlan, BA**  
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### Course Description

This course is designed to provide you with a sound background in structured programming logic and design. While individual programming languages differ, the concepts and principals covered in this course will apply to virtually any language. The demonstration language for programming concepts will be a Windows implementation of standard Basic. The course covers the key mathematical and logical constructs that are the basis of much programming. Topics include the software development life cycle, particularly the programming phase; structured programming software development life cycle, particularly the programming phase; structured programming techniques; problem-solving and algorithm development; decision control structures, including selection (IF/CASE) and repetition (looping) structures; variables and arrays; and data structures.

### Guiding Principles

This course is structured to foster learning from your peers as well as from your instructor. In the somewhat self-directed learning environment of an online course, it is important that we are all attentive to supporting the learning community. Community members help everyone grow by contributing materials and comments. You each have much to offer, by your questions, your contributions and your presence. While you aren't graded, per se, on your community-building efforts, experience shows that the learning experience is significantly enhanced by this activity.

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### Prerequisites

- Math 502, Introduction to College Math AND
  - CMPL 511, Software Tools
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### Learning Outcomes

At the conclusion of this course, students will be able to:

1. Demonstrate an understanding of the classification of programming languages,
2. Explain the software development life cycle, with focus on the programming phase,
3. Demonstrate an understanding of the mathematical and logical constructs that influence programming languages and their implementations,
4. Demonstrate mastery of structured programming techniques,
5. Demonstrate mastery of programming sequence, selection and repetition structures,
6. Develop moderately complex algorithms and implement them using Basic,
7. Develop algorithms containing basic selection and repetition structures and applying mathematical and logical concepts,
8. Read, understand and develop flowcharts and pseudocode,
9. Develop complex expressions, managing different data structures,
10. Use, explain and manage variables, constants and arrays,
11. Demonstrate mastery of the use of the procedures and functions within programming, along with the purpose and efficacy of modularization,
12. Explain error-trapping and debugging techniques,
13. Design and develop programs using standard structured programming techniques,
14. Discuss the importance of naming conventions, comments, documentation and other good programming practices,
15. Use and understand the value of external data sources (specifically sequential and random access files) in managing complex business tasks.

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## Course Resources

### Textbook:

- **Programming Logic and Design, Introductory**, Fifth Edition, Joyce Farrell, Course Technologies, 2008 (ISBN: 1-4239-0195-9)
- **Teach Yourself Beginning Programming**, Greg Perry, Sams Publishing, 2002 (ISBN:0-672-32307-9)

**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: 10130). 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.

### Other Class Materials:

### Software:

- **Element K:** 1-year subscription to online self-paced tutorials: Office Productivity & Design & Media Libraries. Please see course software page on course menu.
- **Microsoft Visio Professional 2007**  
**NOTE:** Visio 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. Instructions for acquiring this software are made available to enrolled students via the course web site.
- **Liberty Basic Programming Language.** Included in the **Teach Yourself Beginning Programming** text.

### 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 view our new [Online Orientation with audio](#) at your own convenience.

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## Course Policies

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.

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## Description of Course Activities and Requirements

Three types of assessment are planned for this course:

1. **Class and Group discussions:** as we work through various concepts and problems in this course, you will be expected to participate in class discussions. Depending on the size of the class, these discussions may take place in small groups rather than involving the full class.
  2. **Programming and design problems and exercises:** programming concepts are mastered by practice, practice and more practice. You will have the opportunity to work in small groups to work through many problems and exercises, submitting some of your individual work for assessment and feedback.
  3. **Quizzes and Exams:** we will have frequent quizzes and short exams that will provide you with an opportunity to assess your progress in mastering the concepts involved. In addition there will be a midterm exam designed to measure your performance against the outcomes in this course.
  4. **Self Assessment:** 10% of your grade is a grade that you assign yourself. To be complete, and to achieve the full value of the self-assigned grade, three components must be provided.
    - First is a statement of your personal goals and objectives for this course, with an assessment of your present skill or knowledge level.
    - Second is a journal recording your progress toward meeting your personal goals and objectives.
    - Third is a final self-assessment detailing the status of your goals and objectives, and a grade that represents your personal assessment of your work.
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## Grading Percentages

Activity	% of Final Grade
Participation in Class and Group Discussions	20%
Programming and Design Problems and Exercises	35%
Quizzes and Exams	35%
Self-Assessment	10%
<b>Total</b>	<b>100%</b>

## Granite State College Standard Grading Scale

Grade	Percent	Grade Points	Level of Achievement
A	95-100	4.0	Excellent
A <sup>-</sup>	90-94	3.67	
B <sup>+</sup>	87-89	3.33	Good
B	84-86	3.0	
B <sup>-</sup>	80-83	2.67	
C <sup>+</sup>	77-79	2.33	*Acceptable
C	74-76	2.0	
C <sup>-</sup>	70-73	1.67	†
D <sup>+</sup>	67-69	1.33	Poor
D	64-66	1.00	
D <sup>-</sup>	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<sup>-</sup> or below generally does not transfer to other academic institutions.

## Course Schedule & Topics

There are no face-to-face sessions scheduled for this course. You will have access to the course beginning **Wednesday, September 10, 2008** (by 5:00 PM.)

- **Log in** to the course no later than **September 14, 2008** and **respond to the questions** in the Introduction topic on the Discussion Board.
- Please **read FAQ's** and other **required readings** on the Course Kick-off Instructions page.

The material covered in this class is laid out in weeks. Most topics are integrated in your reading and activities, but are the focus of your work in the specified weeks.

Module	Dates	Topic
<b>Module 1</b>	<b>Week 1</b> <b>September 13 - 19</b>	Overview of Computers and Logic
<b>Module 2</b>	<b>Week 2</b> <b>September 20 - 26</b>	Understanding Structured Programming and Design
<b>Module 3</b>	<b>Week 3</b> <b>September 27 – October 3</b>	Algorithm Development Input, Output and Variables
<b>Module 4</b> <b>(2 weeks)</b>	<b>Weeks 4-5</b> <b>October 4 - October 17</b>	Working with Liberty Basic Arrays and Array Variables
<b>Module 5</b>	<b>Week 6</b> <b>October 18 - 24</b>	Decision Control Structures
<b>Module 6</b>	<b>Week 7</b> <b>October 25 - 31</b>	Repetition (Looping) Structures
<b>Module 7</b>	<b>Week 8</b> <b>November 1 – November 7</b>	Best Practices in Programming Mid-term Exam

<b>Module 8</b>	<b>Week 9</b> November 8 – November 14	Error Handling
<b>Module 9</b>	<b>Week 10</b> November 15 - 21  <b>November 22 - 28: Thanksgiving Break</b>	Program Design
<b>Module 10</b>	<b>Week 11</b> November 29 – December 5	File Management
<b>Module 11</b>	<b>Week 12</b> December 5 - 12	Other Programming Languages Course Wrap Up

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

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## 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.

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## 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](http://bbresources.granite.edu/course_docs/acad_resources.htm).

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## 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.)

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## 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.

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## 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.

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## 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.

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## 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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