

## Computer Systems Department

### *Alexander Kasiukov - Spring 2026 - CRN 25878*

## BCS230: Foundations of Computer Programming II

# Course Syllabus

### Class Section

**Semester:** Spring 2026

**CRN:** 25878

**Modality:** In-person Lectures and Computer Laboratory

**Instructor:**

Name: Alexander Kasiukov

Office: **Computer Systems Department**

Email: [kasiuka@farmingdale.edu](mailto:kasiuka@farmingdale.edu)

Web Site: <http://kasiukov.com/farmingdale>

**Schedule:**

Time: Friday, 9:25 a.m. – 12:05 p.m.

Place: **Whitman Hall**, Room 216

Office Hours: after class, by appointment

First Class: Friday, January 30, 2026

Last Class: Friday, May 8, 2026

Last Day to Withdraw: Friday, April 3, 2026

Final Exam: Friday, May 15, 2026, 9:25 a.m. – 12:05 p.m. in **Whitman Hall** (Room TBD)

Final Exam Week: May 14 – May 20, 2026

Final Exam Schedule: <https://www.farmingdale.edu/registrar/final-exams.shtml>

### Course

**Statistics:**

Subject: Business and Computer Systems

Subject Code: BCS

Number: 230

Title: Foundations of Computer Programming II

Credits: 3.00

Prerequisites: **BCS 120** or **CSC 111** with a grade of C or higher

Note: Students completing this course may not receive credit for **CSC 211**

**Catalog Description:**

This course expands the knowledge and skills of **Foundations of Computer Programming I**. Among the topics covered are: arrays, pointers, strings, classes, data abstraction, inheritance, composition and overloading.

## Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. determine and apply the appropriate *array* structure in program development;
2. design and build classes to implement *abstract data types*;
3. develop programs using class *inheritance*;
4. develop programs using class *composition*;
5. determine the appropriate use of *pointers* and *dynamic memory allocation*;
6. apply *pointers* and *dynamic memory allocation* in programs;
7. implement operator *overloading*.

## Contents and Tentative Schedule:

Week	Topic	Learning Outcomes
1	Review <ul style="list-style-type: none"><li>▪ functions</li><li>▪ separate compilation</li><li>▪ project organization</li></ul>	<ul style="list-style-type: none"><li>▪ appreciate the necessity of structural programming</li><li>▪ use functions to modularize code</li><li>▪ use the file system in project organization</li><li>▪ write, compile, link, run and debug code in Visual Studio</li></ul>
2	Arrays <ul style="list-style-type: none"><li>▪ declaration and use</li><li>▪ memory location</li><li>▪ strings</li><li>▪ multi-dimensional and parallel arrays</li></ul>	<ul style="list-style-type: none"><li>▪ declare, initialize and use an array</li><li>▪ understand the trade offs between heap and stack and select the appropriate memory location for a given task</li><li>▪ understand the concept of the lifetime and ensure appropriate memory use</li></ul>
3–4	Array Algorithms <ul style="list-style-type: none"><li>▪ array and string copy</li><li>▪ search and sort</li><li>▪ assignment</li></ul>	<ul style="list-style-type: none"><li>▪ find maximum and minimum of an array</li><li>▪ sort an array of integers</li><li>▪ copy string to string</li><li>▪ find the total sum of the array elements</li><li>▪ etc.</li></ul>
5–6	Pointers <ul style="list-style-type: none"><li>▪ declaration</li><li>▪ <i>address-of</i> operator &amp;</li><li>▪ <i>dereference</i> operator *</li><li>▪ arithmetic</li></ul>	<ul style="list-style-type: none"><li>▪ use pointers as alternative to references for <i>pass-by-value</i></li><li>▪ understand the connection between arrays and pointers</li><li>▪ understand <i>array-to-pointer decay</i> phenomenon</li><li>▪ use basic pointer arithmetic</li></ul>

Week	Topic	Learning Outcomes
<b>7-9</b>	Classes and objects <ul style="list-style-type: none"> <li>▪ the concept of state and behavior</li> <li>▪ declaration and instantiation</li> <li>▪ memory location and lifetime</li> <li>▪ encapsulation and use of separate header and implementation files</li> </ul>	<ul style="list-style-type: none"> <li>▪ implement state and behavior using static and member fields and methods</li> <li>▪ define and use default, copy and casting constructors</li> <li>▪ define destructors</li> <li>▪ implement and use recursive data structures (lists and trees)</li> <li>▪ reduce coupling by means of encapsulation</li> <li>▪ reduce coupling by means of moving declarations to header files and implementation — to source files</li> </ul>
<b>10-11</b>	Inheritance and Composition <ul style="list-style-type: none"> <li>▪ inheritance</li> <li>▪ constructor initializer lists</li> <li>▪ abstract classes</li> <li>▪ virtual functions and method override</li> </ul>	<ul style="list-style-type: none"> <li>▪ reuse code with class inheritance and composition</li> <li>▪ encapsulate object and class implementation</li> <li>▪ use abstract methods and virtual functions to separate the implementation from the interface</li> </ul>
<b>12-13</b>	Polymorphism <ul style="list-style-type: none"> <li>▪ templates</li> <li>▪ operator overloading</li> </ul>	<ul style="list-style-type: none"> <li>▪ use function and class templates</li> <li>▪ overload functions and operators</li> </ul>
<b>14</b>	Review	<ul style="list-style-type: none"> <li>▪ prepare for the final exam</li> </ul>
<b>15</b>	Final Exam	<ul style="list-style-type: none"> <li>▪ take paper-based in-person final exam</li> </ul>

# General Requirements

## Methodology:

Mastery of the subject can be attained only through combination of theoretical understanding and practice. To that end, you must come to class; take and organize lecture notes; write, run and debug code on a computer; pass in-class quizzes and the final exam, and develop a portfolio of your own code.

## Textbook:

The following textbooks are recommended for the course:

1. *C++ Programming: From Problem Analysis to Program Design* by Davender S. Malik; ISBN-13: 978-1133626381
2. *Starting out with C++: Early Objects* by Tony Gaddis, Judy Walters, Godfrey Muganda; ISBN-13: 978-0134379319
3. *Anything* by Scott Meyers

## Attendance:

Attendance is mandatory. Please make every effort to attend every class.

# Grading

## Grade Computation:

The course grade will be based on the percentage score, computed as a weighted sum of:

- in-class pop quizzes (on paper and on computer), contributing 75% of the score;
- comprehensive final exam (on paper), contributing 25% of the score.

The scores will not be curved. There will be no extra credit projects. A missing quiz, final exam or homework assignment will be graded as 0. The percentage score will be converted into a letter grade according to the Official College Grading System:

Percentage Score	Grade	GPA Equivalent	Interpretation
93-100	A	4.00	Excellent
90-92	A-	3.67	
87-89	B+	3.33	
83-86	B	3.00	Good
80-82	B-	2.67	
77-79	C+	2.33	
73-76	C	2.00	Satisfactory
70-72	C-	1.67	
67-69	D+	1.33	
60-66	D	1.00	Minimum Passing
0-59	F	0.00	Failure
	I		Incomplete
	W		Withdrawal
	UW		Unofficial Withdrawal

## Make-ups:

Quizzes can be made up during **office hours** any time before the **final exam week**. There will be no make-ups for the final exam.

# Integrity

## Department Policy:

*Unless specifically indicated as group or team projects, all assignments are considered individual assignments for which the **instructor** expects original work submitted by each student.*

All assignments must comply with the following Computer Systems Department academic integrity policy.

We incorporate the definition of Academic Dishonesty given in the [Farmingdale State College Academic Integrity Policy](#). Specifically, the following actions are considered to be instances of academic dishonesty:

1. submitting another person's work with or without that person's knowledge;
2. copying a computer program or programming code from another source;
3. purchasing and then submitting programming code.

In addition, the following are also considered to be a breach of the academic integrity policy as it applies to individual assignments:

4. exchanging ideas, computer code, and documents electronically;
5. sharing storage media;
6. submitting a document file that has been duplicated electronically from another person's work;
7. collaborating with another person to produce identical or similar work;
8. intentionally or knowingly helping, attempting to help, or soliciting another to commit an act of academic dishonesty.

## INSTRUCTOR'S COURSE OF ACTION

### First Offense:

- The student (and collaborators, if any) will receive a grade of zero for the assignment and will have his or her final grade reduced by one full letter grade.
- The infraction will be reported to the [Department Chair](#).
- A letter regarding the infraction will be placed in the student's file.

### Second Offense:

- The student receives an "F" in the course and may no longer attend or participate in the course.
- The infraction will be reported to the [Department Chair](#), who will then notify the [Dean of Students](#) regarding the infraction.
- A letter regarding the infraction will be placed in the student's file.

A second offense can occur in the same course or in different courses in the same or different semesters.

*Student dishonesty on exams and/or a capstone project will automatically be treated as a second offense.*

If you are unclear about or have any questions regarding the academic integrity policy, it is the student's responsibility to ask the **instructor** for clarification of the policy.

Note: If you have a question about an assignment submission or evaluation, or if you have a question about an exam or a quiz grade, you must raise those questions *within one week* after the assignment evaluation or the exam or quiz was graded or returned.

**College Policy:**

Intellectual honesty is the cornerstone of all academic and scholarly work. Each member of the Farmingdale State College campus community is expected to maintain academic integrity. Farmingdale State College has developed the Academic Integrity Policy <https://www.farmingdale.edu/policies/?pid=214095> to maintain ethical academic environment. Please familiarize yourself with this document, as you will be expected to abide by the standards it sets.

**Plagiarism:**

Plagiarism is the intentional representation of someone else's work as one's own. Anyone caught plagiarizing will receive zero credit for the assignment and may be reported.

**Electronic Devices:**

Phones and other electronic devices (other than computers used for class purposes) should not be visible during class time. Their mere presence in the open during an examination (i.e. a quiz or final exam) — even if not used — is a sufficient reason for an immediate dismissal from that examination with a failing grade.

**Use of AI and other forms of external assistance:**

Artificial intelligence, such as ChatGPT, and online assignment help tools or services, such as Chegg®, can not be used for course assignments, except as explicitly authorized by the **instructor**. In particular, the following actions are prohibited in this course:

- submitting all or any part of an assignment to an online learning support platform;
- incorporating any part of an AI generated response in your submission;
- using AI to brainstorm, formulate arguments, or template ideas for assignments;
- using AI to summarize or contextualize source materials;
- submitting your own work for this class to an online learning support platform for iteration, verification or improvement.

If you are in doubt as to whether you are using an online learning support platform appropriately in this course, please discuss it with your **instructor**. Any content coming from any source other than yourself, regardless of whether that source is human or digital, must be attributed to the source through proper citation. *Unattributed use of online learning support platforms and unauthorized sharing of instructional property are forms of academic dishonesty and will be treated as such.*

On the other hand, you are permitted and encouraged to use AI outside of the class as a way to explore additional dimensions of the subject.

## Violations

**Copyright:**

Course material accessed through [Farmingdale website](#), [Brightspace](#), and the **textbook** platform is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the **instructor** and/or the copyright holder. Duplication of materials protected by copyright without permission of the copyright holder is a violation of the Federal [Copyright Law](#), as well as a violation of [SUNY copyright policy](#).

**Student Code of Conduct:**

The [President of the College](#) and the [College Council](#) recognize the rights of designees — including University Police — to enforce all regulations, policies, license agreements, laws and codes on campus. If any individual allegedly violates the laws, Student Code of Conduct or campus policies, a President's designee will institute proceedings against the offender(s). For more information, see the Student Code of Conduct at <https://www.farmingdale.edu/dean/pdf/fscstudentcodeofconduct20182019.pdf>

## Communication

### Official Means:

As per College policy, the [Farmingdale email](#) system will be the official means of communication between you and the [instructor](#).

### Class Announcements:

You are responsible for all class announcements made during the [lectures](#), emailed to your [Farmingdale email](#) address or posted on [Brightspace](#), regardless of whether or not you were in attendance, checked your email or opened the Announcements folder in Brightspace.

### Cancellation of Classes:

Excepting an emergency that could make timely notification impossible, you will be notified of class cancellations through [Farmingdale email](#). Campus-wide cancellations will be listed on Farmingdale's [home page](#), [Facebook](#) and [Twitter](#). You can also sign up for RAVE <https://www.getrave.com> (use your Farmingdale user ID and password to enter the site) or SUNY Emergency Alert (via Student Login at <https://oasis.farmingdale.edu/>) to receive announcements.

## Accommodations

### Diversity, Equity and Inclusion:

Farmingdale State College embraces the belief that our intellectual community is enriched and enhanced by the opportunity to learn from and appreciate diversity. We strive to have a curriculum and learning environment which respects, honors and incorporates the contributions of a diverse and inclusive teaching and learning community. Your person (identity) and voice are welcomed in this classroom environment because of your value as a member of FSC's inclusive and diverse culture. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

### Religious Observance:

As stipulated in [§224-a](#) of the New York State Education Law, absence from the class necessitated by religious observance will be deemed excused, and will incur no adverse academic consequences. You must notify the [instructor](#) at least one week prior to your absence. You are responsible for all class work and material missed due to a religious observance, and you will be provided with reasonable arrangements and time to make it up. Please discuss these arrangements with your [instructor](#) prior to your absence. Reasonable accommodation may be unavailable if your request results in a significant number of absences (greater than 5% of class time) or substantially impacts class participation.

### Classroom Recording:

Recording of classroom instruction for supporting the course learning objectives or documenting violations of college policy is permitted by the [instructor](#). Copying or sharing of these recordings is permitted, but only

1. within this class, and
2. with College administration, if the recording is used in support of a complaint.

Recordings may not be shared on any learning platform or internet site, including social media sites. If you make classroom recording, be especially mindful of the privacy rights of other class members.

### Academic Support:

For academic assistance, contact the [Center for Academic Success and Tutoring \(CAST\)](#).

### Disability:

If you have a disability for which you are — or may be — requesting an accommodation, please contact, as soon as possible, both your [instructor](#) and the Disability Services Center.

## Basic Needs Insecurity

Your well-being is crucial to your academic success at Farmingdale State College. If you are dealing with basic needs insecurity, please communicate with the Office of the [Dean of Students](#). We are here to ensure that your well-being is prioritized. Resources are available to support you if you face challenges such as unstable housing, insufficient food, financial difficulties or other personal hardships.

### Food Security:

The [Campus Food Pantry](#) provides free groceries to students in need. Many students are eligible for Supplemental Nutrition Assistance Program (SNAP), which provides funds for purchasing food. For more information and assistance with applying, please contact Jamie Hawkins, [Health and Wellness Center](#), [hawkinjk@farmingdale.edu](mailto:hawkinjk@farmingdale.edu), (934) 420-2690. You can apply online at <https://otda.ny.gov/programs/apply/#snap>. [Health and Welfare Counsel of Long Island](#) is available to help you complete the application.

### Housing Assistance:

- Homeless Liaison: Jamie Hawkins, your Campus Homeless Liaison, offers confidential support to students experience housing instability. They will connect you with campus and community resources.
- Emergency Housing: If you are experiencing housing instability or homelessness, the [Residence Life Office \(RLO\)](#) can assist with temporary housing solutions.
- Affordable Housing Resources: For long-term housing support, the [RLO](#) can connect you with affordable housing options in the community.

### Financial Assistance:

- Emergency Grants: Your campus offers emergency financial grants to assist students facing unexpected financial hardships. To apply, visit <https://www.farmingdale.edu/scholarships/>
- Financial Aid: Ensure that you have applied for all available financial aid, including scholarships, grants, and loans. The [Financial Aid Office](#) can provide personalized assistance.

### Mental Health:

Occasionally, students may experience problems related to excessive stress, anxiety, depression, and other mental health issues. All registered students at Farmingdale State College have access to [Campus Mental Health Services \(CMHS\)](#). There is no fee for services. CMHS provides both short and long-term treatment for anxiety, mood disorders, acute and chronic stress disorders, and other emotional or behavioral problems that may adversely impact students' functioning. Additionally, CMHS is available 24/7 for students who may be in crisis. You are encouraged to contact CMHS if you are having difficulties in the above areas. CMHS are also available for consultation to help you determine whether or not services may be helpful.

### Health and Wellness:

For health-related concerns, visit the [Health and Wellness Center](#).

## About this Document

### Implied Consent:

By staying in this class you are accepting this syllabus, and are agreeing to abide by the rules described here. None of the policies in this syllabus are negotiable. If you have any issues, questions or concerns, please contact your [instructor](#) as soon as possible.

### Disclaimer:

Due to unforeseen circumstances, the [instructor](#) reserves the right to make changes to this syllabus. Any such changes will be announced to the class.



## Contacts

### Computer Systems Department:

Phone: (934) 420-2190

Email: [cpis@farmingdale.edu](mailto:cpis@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/engineering/bcs/index.shtml>

Location: Whitman Hall, Room 112

### Center for Academic Success and Tutoring (CAST):

Phone: (934) 420-2066

Email: [tutoringcenter@farmingdale.edu](mailto:tutoringcenter@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/tutoring/>

Location: Greenley Hall, Room 302

### Disability Services Center (DSC):

Phone: (934) 420-5174

Email: [dsc@farmingdale.edu](mailto:dsc@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/disability-services-center/>

Location: Whitman Hall, Room 186D

### Health and Wellness Center:

Phone: (934) 420-2009

Email: [wellness@farmingdale.edu](mailto:wellness@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/health-wellness-center/>

Location: Health and Wellness Center Building

### Campus Mental Health Services (CMHS):

Phone: (934) 420-2006

Email: [cmhs@farmingdale.edu](mailto:cmhs@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/campus-mental-health-services/>

Location: Dewey Hall, Room 91

### Food Pantry:

Phone: (934) 420-5816

Email: [foodpantry@farmingdale.edu](mailto:foodpantry@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/foodpantry/>

Location: Greenley Hall, Room 114

### Residence Life Office (RLO):

Phone: (934) 420-2010

Email: [reslife@farmingdale.edu](mailto:reslife@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/residence-life/>

Location: Dewey Hall

### Financial Aid Office:

Phone: (934) 420-2578

Email: [faoffice@farmingdale.edu](mailto:faoffice@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/student-financial-services/financial-aid/index.shtml>

Location: Laffin Hall, Room 324

### University Police:

Emergency Phone: (934) 420-2111

Email: [police@farmingdale.edu](mailto:police@farmingdale.edu)

Web Site: <https://www.farmingdale.edu/university-police/>

Location: University Police Building