CSCI 146: Object-Oriented Practicum

1   Overview

This is a one-hour course intended for students who have taken CSCI 145 Scientific Programming but who wish to continue on and take further courses in Computer Science, usually with the aim of pursuing a CS major or minor.

Students might begin the computer programming sequence at SLU in one of two ways. The typical path for those who know they will be taking further computer science courses is CSCI 150 (Introduction to Object-Oriented Programming). That is a four-hour course covering the fundamentals of the object-oriented philosophy and practice, with a goal of developing a programming style that is consistent with that use by industry for large-scale software development. Key issues in that course are high-level design and decomposition, documentation, and testing. Good techniques allow for the development of software that is more robust, maintainable, and reusable.

In contrast, the focus of CSCI 145 (Scientific Programming) is the design and implementation of programs for scientific computations, typically based on simulating underlying mathematical models. For many engineering and science majors, that is the only computer science course taken, and so our primary goal is to use the semester to maximizing proficiency in completing such projects. However, less time is spent on developing the long-term software practices introduced in CSCI 150 and no introduction is given to object-oriented programming. With that in mind, the purpose of CSCI 146 (Object-Oriented Practicum) is to teach the important object-oriented concepts that were not included in Scientific Programming. Students completing the 145/146 sequence will rejoin those from the 150 track for the next software development course CSCI 180 (Data Structures).

2   Course Administration

Class Meetings

The material will be presented in one weekly meeting, at a time to be arranged. Attendance at that meeting is expected.

    Time: Wednesdays, 3:10-4:00
    Place: Ritter Hall 121

The Staff

Instructor:	Dr. Michael Goldwasser
Email:	`goldwamh@slu.edu`
Web:	`http://cs.slu.edu/~goldwasser/`
Office:	Ritter Hall 108
Telephone:	(314) 977-7039
Office hours:	Mondays 2:00–3:00pm
	Wednesdays 10:00–11:00am
	Thursdays 10:30–11:30am
	or by appointment

3   Online Resources

CSCI 146 Web Page: `http://cs.slu.edu/~goldwasser/146/`

With the exception of the first day's printed handouts, most of the information for this course will be distributed only by means of the course web page. This web site will contain all assignments, a schedule of lectures, detailed lecture notes and links to many other sources of information.

The web page contains some information (e.g. solutions, submitted assignments, individual grades) that is more sensitive and therefore which will be available to students in the class only after they have identified themselves properly. To gain access to these parts of the web page, a student must first complete an online questionnaire, creating a unique identity and password.

C++ Documentation

We will be using C++ as the programming language in this course. Although there is no formal textbook, we refer students to a variety of available documentation, most notably the website `http://www.cplusplus.com`, which is especially good for its Language Tutorial and Library Reference.

4   Graded Work

The graded work for this course will be a series of ten programming assignments as part of a semester-long software project. There will not be any exams.

Course Grades

Letter grades will be based on each student's overall percentage of awarded points according to the following formula.

Student percentage above 90% will result in a grade of A   or better.
Student percentage above 87% will result in a grade of A- or better.
Student percentage above 83% will result in a grade of B+ or better.
Student percentage above 80% will result in a grade of B   or better.
Student percentage above 77% will result in a grade of B- or better.
Student percentage above 73% will result in a grade of C+ or better.
Student percentage above 70% will result in a grade of C   or better.
Student percentage above 67% will result in a grade of C- or better.
Student percentage above 60% will result in a grade of D   or better.
Student percentage below 60% will result in a grade of F.

Any modification to this scale at the end of the year will be *in favor of the students.* That is we may later decide to award an A to a student who is slightly below the above cutoff, but we certainly will not deny an A from someone who is above the cutoff.

Academic Integrity

Students are expected to have read and abide by the University statement on Academic Integrity available on page 58 of the Saint Louis University's Undergraduate Catalog. A more detailed policy statement is given by the College of Arts & Science (`www.slu.edu/colleges/AS/academic honesty.html`), also applying to this course.

In addition to those general statements, we wish to discuss our policy in the context of this course. When it comes to learning and understanding the **general course material**, you may certainly use other reference materials and you may have discussions with other students in this class or other people from outside of this class. This openness pertains to material from the text, practice problems, general syntax and use of the C++ language or other computing tools.

However, when it comes to **work that is submitted for this course**, you are not to use or to search for any direct or indirect assistance from unauthorized sources, including but not limited to:

- other students in this class

- past students, whether from this school or other schools

- other acquaintances

- other texts or books

- online information other than that referenced by course materials

Acceptable sources of information include consultations with the instructor, teaching assistants, or members of organized tutoring centers on campus, as well as any materials explicitly authorized in an assignment. Even in these cases, if you receive significant help you should make sure to document both the source of the help as well as the extent.

Any violations of these policies will be dealt with seriously. Penalties will apply as well to a student who is aiding another student. Any such violations will result in a

minimum penalty of a zero on the given assignment that cannot be dropped, and severe or repeated violations will result in an immediate failing grade in the course. Furthermore all incidents will be reported in writing to the Department and/or the Dean, as per the College procedure.

Late Policies

For programming assignments, we wish to allow students to continue to work comfortably beyond the official deadline when a little more time will result in more progress, while at the same time discourage students from falling significantly behind pace and jeopardizing their success on future assignments. Our solution is the following exponentially decaying late formula (some have suggested that we should offer extra credit to anyone who fully understands this formula).

We will consider an assignment submission "complete" when any part of the assignment is last submitted or modified. Any assignment that is not complete promptly by its due date and time will be assessed a penalty based on the formula $S = R \cdot e^{-h/173}$, where S is the grade given, R is the grade the work would have received had it been turned in on time, and h is the amount of time (in hours or fractions thereof) that the work was late. Examples:

— work turned in 1 hour late receives over 99.6% of its original credit
— work turned in 5 hours late receives over 97% credit
— work turned in one full day late receives less than 88%
— work turned in two full days late receives less than 76%
— work turned in five days late receives less than 50%

The above policies will be waived only in an "emergency" situation with appropriate documentation.

5   Additional Information

Supporting Student Success

In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support in the remainder of this section or by asking the instructor

- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Student Success Center (BSC 331) or by going to `www.slu.edu/success`.

Students who believe that, due to a disability, they could benefit from academic accommodations are encouraged to contact Disability Services at 314-977-8885 or visit the Student Success Center. Confidentiality will be observed in all inquiries.

Course instructors support student accommodation requests when an approved letter from Disability Services has been received and when students discuss these accommodations with the instructor after receipt of the approved letter.

Tutoring Resources at SLU

Our department employees many junior/senior computer science majors to help out in our department labs. Those students are also available to provide assistance with course materials at such times.

Our department web page maintains a current list of the available times and locations at `http://cs.slu.edu/undergrad-cs/lab-hours`.

As stated in the Academic Integrity policy of Section 4, these workers are an acceptable resource for help, yet you should still document both the source of the help as well as the extent, if significant.

Computing Resources at SLU

Our department runs a computer server named `turing` that serves as the primary computing environment for this course. If you do not already have an account on this machine, please let us know and we will create a new one.

See `http://cs.slu.edu/computing-resources` for further documentation regarding use of turing's facilities.

Please note: you are not explicitly required to use `turing` as your computing platform, it is simply the only platform what we will officially support. If you wish to use another platform that offers you sufficient support for completing your assignments, please feel free to do so.