



CPSC 46000 CPSC 65000 – Programming LanguagesRobotics

**Syllabus**

SpringFall Semester 20229

**I. Instructor Information**

**Instructor's name:** Eric Y. Chou, Ph.D.

**Lewis office location:** Online (Collaborate/Facebook/Zoom.us)

**Office hours:** Sunday Morning 12:pm (noon US Central Time) online by Zoom  
By Appointment (Online anytime)

**How to make appointments outside of office hours:**

**Lewis office phone number:** (510) 304-9428, (510) 578-9322

**Facebook:** [facebook.com/DrEricChou](https://facebook.com/DrEricChou)

**Lewis email address:** [echou@lewisu.edu](mailto:echou@lewisu.edu)

Formatted: Font: Not Bold

Formatted: Font: Not Bold

**II. Course Information**

**Course Name, Number, & Section:** Robotics, CPSC-~~4665~~000

**Course Credit Hours:** 3 credit hours

**Course description:**

The course examines the fundamental principles at work in the most important programming languages, highlights the critical relationship between language design and language implementation, and devotes special attention to issues of importance to the expert programmer. The focus of the course will always be on the concepts of programming languages, while the specific languages discussed are only present to support these concepts.

Students should emerge better prepared to choose the best language for projects, to understand and make more effective use of languages they already know, and to learn new languages quickly and completely. The purpose of this course is to introduce you to basics of modeling, design, planning, and control of robot systems. In essence, the material treated in this course is a brief survey of relevant results from geometry, kinematics, statics, dynamics, and control.

The course is presented in a standard format of lectures, readings and problem sets. There will be quizzes, assignments, and a final project. These quizzes will be open book. Lectures will be based mainly, but not exclusively, on material in the Blackboard course shell and textbook. Lectures will follow roughly the same sequence as the material presented in the book, so it can be read in anticipation of the lectures.

Formatted: Indent: Left: 0.5"

Formatted: Indent: Left: 0"

Commented [GM1]: The course also has discussion boards.

**Course meeting times, days, and location:**

**Semester:** [Fall 2022](#)

**Session:** [003](#)

**Campus:** On-line

**Meeting Day:** [Wednesday](#)

**Meeting:** [6-9pm Central Time \(Pre-recorded\)](#)

**Start date:** [01/10/2022](#)

**End date:** [04/29/2022](#)

**Additional instructional time:** [Office Hours - Sunday Morning 12pm-1pm \(noon US Central Time\) online Live Session by Zoom](#)

**Student Learning Outcomes:**

[We will work hard to present the subject clearly, provide the student with examples. Programming, when feasible, is the method of choice. The student will be assigned homework, lab works, quizzes and projects. We expect the student to participate to discussions, ask questions and help the teacher and the class in achieving our objectives. A term project and its presentation are included. This term project experience will lead to mastering independent project development skills and getting ready for job interviews.](#)

After completion of this course, students will be able to

- [analyze the needs of a project and pick a proper language for the project development.](#)
- [master the compilation process and be ready to learn detailed compiler design.](#)
- [know about the key features of programming languages and learn a new language much faster.](#)
- [utilize the lexical analyzer generator and parser generator so that he will be able to write good input processing programs and input form converters.](#)
- [write engineering project proposals and reports, and](#)
- [work on software development projects independently](#)

**III. University Mission Statement**

Lewis University, guided by its Catholic and Lasallian heritage, provides to a diverse student population programs for a liberal and professional education grounded in the interaction of knowledge and fidelity in the search for truth.

Lewis promotes the development of the complete person through the pursuit of wisdom and justice. Fundamental to its Mission is a spirit of association, which fosters community in all teaching, learning and service.

***How this course connects to the University Mission:***

- This course is a technology course in the Artificial Intelligence course series. It promotes
- the common goodness of all human beings. Students will learn the scientific methods to
- explore the truth and applications of robotics which will extend the knowledge of human
- technology that will benefit all human beings.

**IV. Required Course Materials**

• Textbook:

- Teacher's presentation slides, video, and notes.

• Reference Book:

- Programming Language Pragmatics, by Michael L. Scott, Morgan Kaufmann Press, 2015. (paper) ISBN-13: 978-0124104099, ISBN-10: 0124104096  
Supplemental readings, videos, online materials: will be provided on blackboard course shell.

• Hardware and software requirements:

A general-purpose PCs or other mobile devices meeting Blackboard Hardware Requirements. Some features, on the Blackboard platform, are not fully supported for mobile devices. Please submit all your assignments using PCs.

- Other required materials or costs: None.

**V. Instructional Methods and Activities**

***Modality of Instruction:*** online

***Additional Activities:*** Textbook reading, lab/video watching, programming assignments, projects and quizzes.

**VI. Course Schedule**

CPSC 46000 Course Schedule 2021 - Session 003					
Date	Topic	Quiz	Assignment	Discussion	Project
W1-01/10-01/16	Chapter 1 Introduction	200 pts		DB1-40 pts DB2-20 pts	
W2-01/17-01/23	Chapter 2 Data Types and Type Systems		150 pts	20 pts	
W3-01/24-01/30	Chapter 3 Name, Scope, Binding and Environment	200 pts		20 pts	
W4-01/31-02/06	Chapter 4 Imperative Programming (Programming Paradigm)		150 pts	20 pts	Project 1 Due 200 pts
W5-02/07-02/13	Chapter 5A Object-Oriented Programming - Class Design (Programming Paradigm)	200 pts		20 pts	
W6-02/14-02/20	Chapter 5B Object-Oriented Programming - Class to Class Relationship (Programming Paradigm)		150 pts	20 pts	
W7-02/21-02/27	Chapter 6A Functional Programming - Basic Theory (Programming Paradigm)	200 pts		20 pts	
W8-02/28-03/06	Chapter 6B Functional Programming - Recursion and Tree (Programming Paradigm)		150 pts	20 pts	
W9-03/07-03/13	Chapter 7: Functional Programming - Scheme Language (Programming Paradigm)	200 pts		20 pts	Project 2 Due 300 pts
W10-03/14-03/20	Chapter 8A Lexical Analysis - Tokenization		150 pts	20 pts	Proposal 100 pts
W11-03/21-03/27	Chapter 8B Lexical Analysis - Scanner Design	200 pts		20 pts	
W12-03/28-04/03	Chapter 9A Syntax Analysis - Context Free Grammar		150 pts	20 pts	
W13-04/04-04/10	Chapter 9B Syntax Analysis - Parser Design	200 pts		20 pts	
W14-04/11-04/17	Chapter 10A Interpreter Design - Calculator Design		150 pts	20 pts	
W15-04/18-04/24	Chapter 10B Interpreter Design - Read Evaluate Print Loop	200 pts		20 pts	
W16-04/25-04/29	Chapter 10C Scheme Interpreter Design		150 pts	DB1-20 pts DB2-40 pts	Final Term Project Report 700 pts
Class Participation	500 pts (Professor will provide this grade based on your class attendance record, discussion involvement, and many other factors).				
Total	500 pts	1600 pts	1200 pts	400 pts	1300 pts
Grand Total (Maximum Base Points)	5000 pts (May Change) All grade will be calculated based on the base points of 4500 pts				

All required items (Quiz, Assignments, Discussion, Projects) are due Sunday night of each week at 11:59pm CST. All late submissions will be accepted if submitted before the end of the course (Sunday night 11:59pm CST last week of the course). Some score deduction may apply but all late submissions will be allowed for the maximum flexibility for students to enjoy studying in this course.

**Commented [GM4]:** ...to give students maximum flexibility in this course.

#### Schedule Changes:

The instructor may change the schedule or the assignments due date or time. Changes may be made directly in the course shell or may notify students by emails.

**Commented [GM5]:** It needs to be clear how students will be informed. Students will be informed via e-mail and course announcements.

## VII. Grading Criteria and Course Policies

### Assignments and Course Requirements:

- Accumulated Points System:
  - The instructor uses an Accumulated Points System for grading.
  - For example, quiz 1 is worth of 100 pts with 10 bonus pts. Quiz 2-1 is worth of 50 pts with 5 bonus pts. Term project is worth of 500 pts with 100 bonus pts, and something like that for all assignments.
  - At the end of the semester, the instructor will sum up all your total points, including bonus points. The instructor will divide your total pts with the maximum base pts and get a percentage score. Use the percentage score to determine your course grade. Your total pts may be higher than the maximum base pts due to the bonus pts.

### Course Grade:

- Grades are calculated based on the percentage score, as follows:

Score	Grade
92.95% and above	A
89.95% to 92.94%	A-
86.95% to 89.94%	B+
82.95% to 86.94%	B
79.95% to 82.94%	B-
76.95% to 79.94%	C+
72.95% to 76.94%	C
69.95% to 72.94%	C-
59.95% to 69.94%	D
59.94% and below	F

- Note:**

Percentage score will be rounded off to the 100<sup>th</sup> digit. For example, if your percentage score is 79.95, you will receive a B grade for the course. If your percentage score is 79.949..., you will receive a C grade.

The instructor reserves the right to modify the syllabus and/or assignment schedule; however, students will be notified via Lewis email prior to any changes.

### Grading Policies:

- All quizzes have 2 attempts
- All assignments (project, or programming assignments) must be returned before the end of the course. Any submissions after the end of the course will not be counted toward the final grade.
- Late submissions will be accepted (some score deduction may be applied)

### Course Policies:

- Attendance in Live Lectures is encouraged but not required. Recorded videos after each live session may be provided but cannot be guaranteed.

### Changes to Course Assignments or Grades:

- The grading for the term project proposal and final term project report is final. Not open for negotiation.
- All quizzes are graded automatically.
- All programming assignments will be graded based on the student's submission materials. Requests to change score/grade on the programming assignment will be reviewed but may not always be granted.

**Commented [GM6]:** This is already mentioned above in the schedule changes section.

**Commented [GM7]:** This part does not belong in grading policies as it describes an assignment type (quiz). In the section above "Assignments and Course Requirements" please include more info about each type of assignment (Discussion Boards, Quizzes, Programming Assignments, and Term Project). **Make it a short paragraph with these items:**

- For Discussion Board please include:
  - Description of assignment (you have the option to add a length requirement)
  - Due Dates and times (At the end of each Discussion prompt due date information should be included, "Please post your initial submission by Thursday at 11:59 pm (CT) and respond to at least [x] other student[s] post by Sunday at 11:59 pm (CT)")
  - Number of peer responses required
  - Point worth of each Discussion Board (20 points each). Include information on Bonus Points if any.

For Quizzes please include:

- Description of assignment
- Number of attempts allowed and which one will be graded
- Whether attempts are timed
- Due Date/ Time (example: 11:59pm Sunday (CT))
- Point worth and bonus points (it is not clear what range of bonus points is available from the course schedule and students always ask about these)

For Program Assignments please add:

- Description of Assignment
- Due Dates/ Time (example: 11:59pm Sunday (CT))
- Point worth and bonus points
- Types of files accepted

For the Term Project please add:

- Description of Assignment
- Explain there are steps to this project; students will have their Term Project Proposal due in Week 3 (worth 100 points) and then will turn in their final project in Week 8 (500 base points and 100 bonus points).
- Due Dates/ Time (Note date for the assignment in Week 3 and in Week 8).
- Add a rubric, if there is one.

**Commented [GM8]:** You have pre-recorded lectures. Are live lectures going to be needed? If they are given, they must be recorded in FALL 20 because of students who are in isolation or quarantine due to COVID.

**Commented [GM9]:** This part is not necessary. It is not customary for students at Lewis to negotiate grades with the instructor.

**Commented [GM10]:** This part does not belong in grading policies as it describes an assignment type (quiz). Please see above where to include.

## VIII. Practices and Policies during the Coronavirus Pandemic

### Responsiveness to Change

Understanding that the COVID-19 pandemic could influence the course of this semester, Lewis University will be guided by our Lasallian mission and the well-being of our community of students, faculty, and staff in respond and adapting to any sudden changes or circumstances. Based on the guidance of the State of Illinois and the Centers for Disease Control, it may be necessary to change the planned modality this course.

### Flexibility, Accommodations, and Student Absences

Because we are committed to student success, the University community is committed to academic standards while maintaining flexibility and empathy. Absences relating to the Coronavirus crisis will be recognized as excused. Students experiencing disruptions in their lives related to the Coronavirus that impact class attendance and participation should contact their instructor and/or college Dean's Office for assistance. Students directly impacted by Coronavirus will have the ability to request alternative grading this semester. Requests will be evaluated on a case by case basis and will require documentation.

Students who require academic accommodations due to disability caused by COVID-19, or to limit risk of exposure to Coronavirus, can engage in an interactive process with the Learning Access Coordinator to explore all avenues for accommodations. Students can contact the Academic Services office at 815-836-5593 or [learningaccess@lewisu.edu](mailto:learningaccess@lewisu.edu) to request an appointment.

### Face Coverings, Physical Distancing, and Surface Cleaning

Face coverings are required in classrooms. Students will be expected to maintain physical distancing in the classroom (6 ft minimum) and to keep their nose and mouth covered at all times. Faculty will require students without face covering to obtain a disposable mask at the nearest University office providing them. While the University will disinfect classrooms and common spaces throughout the day, cleaning supplies will be provided in classrooms and offices so that students and faculty can wipe down work surfaces before class begins.

**Commented [GM11]:** This is a fully online class so this section is not applicable.

## IX. Information for Students

### ***Requests for Reasonable Accommodations***

Lewis University is committed to providing equal access and opportunity for participation in all programs, services and activities. If you are a student with a disability who would like to request a reasonable accommodation, please speak with the Learning Access Coordinator at the Center for Academic Success and Enrichment (CASE). Please make an appointment by calling 815-836-5593 or emailing [learningaccess@lewisu.edu](mailto:learningaccess@lewisu.edu). Since accommodations require early planning and are not provided retroactively, it is recommended that you make your request prior to or during the first week of class. It is

not necessary to disclose the nature of your disability to your instructor. For more information about academic support services, visit the website at: [www.lewisu.edu/CASE](http://www.lewisu.edu/CASE).

Lewis University has adopted Blackboard Ally providing alternative formats for files uploaded by instructors. Students can click the down arrow next to any file, and select *Alternative Formats*.

### ***Sanctified Zone***

Guided by its Catholic and Lasallian heritage, Lewis University is firmly committed to fostering a campus atmosphere that is permeated by its Mission values of Fidelity, Wisdom, Knowledge, Justice, and Association. Accordingly, we have declared the University campus to be a Sanctified Zone, a place and a people *United in Diversity*. The active promotion of diversity and the opposition to all forms of prejudice and bias are a powerful and healing expression of our desire to be Signs of Faith (Signum Fidei) to each other. To learn more about the Sanctified Zone, please visit: <http://www.lewisu.edu/sanctifiedzone>

### ***Academic Integrity***

Scholastic integrity lies at the heart of Lewis University. Plagiarism, collusion and other forms of cheating or scholastic dishonesty are incompatible with the principles of the University. Students engaging in such activities are subject to loss of credit and expulsion from the University. Cases involving academic dishonesty are initially considered and determined at the instructor level. If the student is not satisfied with the instructor's explanation, the student may appeal at the department/program level. Appeal of the department /program decision must be made to the Dean of the college/school. The Dean reviews the appeal and makes the final decision in all cases except those in which suspension or expulsion is recommended, and in these cases the Provost makes the final decision.

### **University Student Complaint Policy**

The University Student Complaint Policy can be found at [lewisu.edu/studentcomplaints](http://lewisu.edu/studentcomplaints)

### **University Grade Appeal Policy**

The University Grade Appeal Policy can be found at [lewisu.edu/studentcomplaints](http://lewisu.edu/studentcomplaints)

### **University Copyright and Intellectual Property Guidelines**

The University Copyright and Intellectual Property Guidelines can be found at <https://www.lewisu.edu/osp/pdf/Intellectual%20Property%20Rights%20Policy.pdf>

***Additional policies and handbooks for this program, department, and college and where they can be found (list policies or handbooks and where they can be found, or provide a link to the web location – delete if this does not apply)***

### ***Center for Health & Counseling Services***

To support student success, all Lewis students are eligible for free health and mental health services on the Romeoville campus. This includes commuters and those living on campus, part-time and full-time students, graduate and undergraduate students, and those taking Lewis classes at other locations. For

**Commented [GM12]:** Delete if this does not apply.

more information, visit the Center for Health & Counseling website at [www.lewisu.edu/studentservices/health](http://www.lewisu.edu/studentservices/health) or call (815)836-5455.