**Metropolitan State University**

**ICS 365 Organization of Programming Languages**

***Syllabus – Spring 2021***

**Class Dates:** Tuesday 6:00 pm – 9:20 pm

Jan 12, 2021 – Apr 27, 2021

**Location:**  On-line

**Instructor:**    Brad Armitage

**E-mail**:            brad.armitage@metrostate.edu

**Phone:**            612-708-1089

**Office:** None

**Credits: 4**

* Communication by email are encouraged.

**Course Description:**

This course is comparative study of programming paradigms including structured programming, object-oriented programming, functional programming and logic programming; exploration of programming constructs in terms of data types, control structures, subprograms and parameter passing, nesting and scope, derived data types, input and output, and dynamically varying structures. Also covered are the principles of lexical analysis, parsing, and the implementation of arrays, switch statements, and subprograms.

**Learning Outcomes:**

The course is designed such that at the end of the semester, the student will be able to

* Compare programming languages for their effectiveness in problem solving based on control and data structures provided by them
* Select the appropriate proper programming language to solve problems in a given domain
* Read, understand, and use the grammar of a programming language
* Explain features of several programming languages
* Understand, write, and document programs in the imperative, functional, object-oriented, and logic paradigms
* Explain the key principles used in the translation and implementation of programming languages

**Course Methods:**

A variety of methods will be used to facilitate learning about Programming Fundamentals including group discussions, lecture, reading assignments, in class exercises, homework programming assignments and quizzes. You will be expected to participate regularly in these activities and meet assignment deadlines.

**Text:**

Concepts of Programming Languages, Eleventh Edition, Robert W. Sebesta.

**Prerequisites:**

ICS 240 Programming with Elementary Data Structures and

MATH 215 Discrete Mathematics.

**D2L:**

This course uses D2L to post assignments, to make announcements, or to distribute other class materials; so you need to check your D2L often. You can access D2L through your Netdirect portal or you can directly login to D2L using the following link <https://metrostate.ims.mnscu.edu>.

**Time Requirements:**

This course will involve reading assignments, problem sets, and programming assignments. The amount of time required to prepare for this class each week will vary from individual to individual.  It takes time to complete the required reading assignments, problem sets, and especially the programming assignments.  Also, you will need to study for the tests.  Some people estimate that it may take 3 hours of preparation outside of class for each hour spent in class.  So you need to be prepared to spend at least that amount of time each week, and it may take more time than that.

**Software:**

We will use C, Scheme, and PROLOG. Free compilers for all the three are available on the web. I will recommend specific pieces of software as we discuss these languages. You are also expected to download and read freely available tutorials.

**Grading:**

Your letter grade will be determined based on the total points that you earn during the semester. The following table relates the percentage of the maximum possible points to a letter grade:

|  |  |
| --- | --- |
| ***Percentage*** | ***Letter*** |
| 93 - 100 | A |
| 90 – 92.99 | A- |
| 87 – 89.99 | B+ |
| 83 – 86.99 | B |
| 80 – 82.99 | B- |
| 77 – 79.99 | C+ |
| 73 – 76.99 | C |
| 70 – 72.99 | C- |
| 60 – 69.99 | D |
| Below 60 % | F |

Points are allocated to different learning activities as indicated below.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Item*** | ***Number of Items*** | ***Maximum points per Item*** | ***Total Maximum Possible Points*** |
| ***Mid-terms*** | 2 | 75 | 150 |
| ***Final Exam*** | 1 | 120 | 120 |
| ***Exercises/Homework/Small Programs*** | 10 | 10 | 100 |
| ***Programming assignments*** | 5 | 40 | 200 |
| ***Total*** |  |  | 570 |

**Class Exercises:**

The main goal of the class exercises is to help you learn the material. These exercises are also used in computing your course grade. These are like quizzes in many ways. They contain questions that you need to answer on a word document on your laptops in the classroom and post it on D2L. Will not be any class exercises for Spring 2021.

**Programming Assignments:**

There are 5 planned programming assignments. The programs will be worth 40 points each. The grading of the programs will take into account programming style, design, documentation, and correctness. Point values associated with the factors will be indicated in the assignment. Generally, correctness will be weighed most heavily.

There will be three assignments in C, one in Scheme and one in PROLOG. Assignments are due by 11:59 p.m. on the due date.

**Programming Assignment:**

Programming Assignments and Exercise/Homework problem sets are posted in D2L and you need to do your submission through D2L.

**Do not hand in zip files, and screen shots of your program running will be expected.**

**Late programming assignments/problem sets**:

I will not accept submissions that are late. If the work is late, it will be a score of zero.

**Do not hand in zip files.**

**Makeup Tests**:

Makeup tests will NOT be offered. If you have to miss more than one test, depending on your excuse, I may find some way of compensating for the missed test. However, you must inform me of your valid reason for missing the test no later than one day before the particular test in question. I reserve the right to refuse to give you a makeup final exam.

**Absences:**

If you miss a class, you are still responsible for what was discussed in class, be sure to get notes from one of your classmates. Lecture notes and other class materials will also be available via D2L. I will not give recap sessions for those who miss class. In case of a stressful work or home situation that affects your ability to perform well, please talk to me as soon as possible. I recommend that you exchange phone numbers with someone else in the class at the first break.

**Class Attendance:**

Class attendance is required. Skipped for Spring 2021.

**Incompletes:**

A grade of incomplete may be considered if the person requesting has successfully completed most of the class and is a student in good standing in the class.  “Good standing” means that the requester is earning a minimum of a C grade and has attended class regularly.  I reserve the right to say no to any request for an incomplete without justifying my position.

**Complaints:**

If you have any complaints, I suggest that you first try to resolve it by taking up the matter directly with me. If that does not resolve the problem, you could take up the issue with the ICS department chair, Prof. Michael Stein. [michael.stein@metrostate.edu](mailto:michael.stein@metrostate.edu), (651) 793-1476.

**Refunds:**

Students should check the rules with the correct department at Metro State.

**Academic Honesty:**

All programs and documentation, solutions to problem sets must be individual and original work unless the assignment specifies otherwise. You must follow the written and oral instructions given during tests.

To avoid having your programming assignments look similar to someone else's, you should not look at another person's design until you have written down your design; you should not look at someone else's code until you have written down your code.

If we have a group assignment, then the work turned in can be based on the contributions of the other group members. If such an assignment is made, it will be clearly indicated on the written assignment. However, it is OK to ask for help. Learning to program can be an intensely frustrating experience unless you learn when to ask for help. In general, if you spend more than 15 minutes absolutely stuck on a problem, you should ask someone else to give you a hint. However, you should never copy someone else’s solution.

It is difficult to state here the penalty for academic dishonesty for all possible scenarios. If your program closely resembles someone else’s (including that of programs in text books, web, etc.), I will call it to your attention. Identical programs will be assigned 0 points. Two or more programs that closely resemble each other will be treated as one program and the possible points for one program will be divided among the students who submitted those programs. Repeated instances of similar or identical programs will result in a grade of F for the class.

You must pay serious attention to instructions given during an exam. Blatant violations such as copying from books/papers/other students during a closed book exam will automatically result in an F grade for the entire course. Somewhat less serious violations would result in a zero for the exam.

**Learning Disabilities:**

If you have a documented learning disability, or if you suspect you have a learning disability that may have an impact on your opportunity to succeed in this course, please notify me before the second class so we can explore ways to reasonably accommodate your learning style. You can also directly contact the Center for Accessibility Resources at 651-793-1549 or disability.services@metrostate.edu

**Tips for Success:**

Here are a few suggestions for success.

1. Start programs as soon as they are assigned.
2. Find a study partner or group of partners. Exchange phone numbers and email addresses. Arrange times when the people in your group plan to work in the lab. Although I expect each of you to work independently and do your own work, the others in your group will be able to help you with syntax (compile) and logic errors. Besides, it’s more fun.
3. Don’t stay stuck!! If you cannot figure out a problem after 15 minutes of thought, ask for help. Don’t waste time on syntax errors.
4. Plan ahead. A good design will save you hours of coding and debugging. Do not sit down at the computer before you have thoroughly thought out the solution to the problem.

ACADEMIC POLICIES and PROCEDURES

# Non-Attendance Verification and Reporting Policy and Procedure (REQUIRED IN ALL COURSE SYLLABI)

The purpose of the Non-Attendance and Reporting Policy is to ensure Federal Title IV regulations are adhered to with respect to a student’s enrollment level for the purpose of calculating and paying financial aid.  While Metropolitan State University is not required to take attendance, Federal Title IV financial aid regulations require a procedure to establish that students have attended, at a minimum, one day of class for each course in which the student’s enrollment status was used to determine eligibility for the Pell Grant Program.  In addition, the university needs to determine a last date of attendance for those students who receive all failing grades or unofficially withdraw. Attendance is defined based on course delivery mode. A student is “in attendance” if he or she meets the following conditions before the end of the second week of the course:

Classroom Courses –the student is present in the classroom.

Web-Enhanced (Reduced Seat Time Courses) –the student is present in the classroom or submits at least one academically relevant assignment.

Online Courses –the student submits at least one academically relevant assignment

Independent Studies – the student contacts the instructor or submits at least one academically relevant assignment

If a student does not attend the first two classes, either live and/or online, that student is automatically dropped from the course. If a student adds the course past the drop/add date, he/she will not receive points for any assignments, discussions, quizzes, or exams for which the due date has already occurred. Refer to the [Non-Attendance and Reporting Policy 2259,](https://www.metrostate.edu/about/policies/32331) and the [Non-Attendance and Reporting Procedure 259](https://www.metrostate.edu/about/policies/32336).

Note to the student: The above description is the University Policy, but for some courses, based on how it is listed in the registration materials, participation must occur during the first week of class or the student is dropped from the course.

# Accessibility Resources (REQUIRED FOR ALL SYLLABI)

Phone: 651-793-1549

Web: [Center for Accessibility Resources](https://www.metrostate.edu/accessibility)

The University provides access to its programs and services by making reasonable accommodations for qualified students. Accommodations may include approval for early registration, note-takers, interpreters for the deaf, adaptive equipment, and testing arrangements.

# Academic Integrity

The University does not accept knowingly copying the work of others without attribution (plagiarism), or colluding with other students to share answers unless permitted by the instructor (e.g. group project). At my discretion, the consequence of these activities may include failure for the assignment. You should be aware that the university subscribes to plagiarism detection software, and that your papers may be selected for plagiarism checking. In instances of plagiarism or other forms of academic dishonesty, instructors may impose academic sanctions. Allegations of plagiarism or other forms of academic dishonesty are also subject to investigation and additional conduct sanctions under the [Student Academic Integrity Policy #2190](https://www.metrostate.edu/about/policies/7081), and [Procedure #219: Student Academic Integrity](https://www.metrostate.edu/about/policies/7156).

If you have questions about the use of footnotes or other notations, talk to your instructor, consult the Library and Information Services website, or seek assistance in the proper way of writing a paper by contacting a tutor in the [Center for Academic Excellence](https://www.metrostate.edu/academics/success/tutoring). Students who believe that they have been falsely accused of plagiarism should request assistance from the Ombudsperson at (651) 793-1517.

# Student Code of Conduct

Students at Metropolitan State University deserve the opportunity to pursue an education, and it is the responsibility of the university to provide an environment that promotes learning and protects the safety and well-being of the university community. Therefore, the university establishes this Student Conduct Code. Any action by a student that interferes with the education of any other student or interferes with the operations of the university in carrying out its responsibility to provide an education will be considered a violation of this code.

The Student Code of Conduct balances individual student due process rights with the broader interests of the safety, wellbeing and academic integrity of the university community. The Dean of Students Office administers the student conduct process at Metropolitan State University. It operates with the philosophy of balancing the need for student accountability with the opportunity for education and making amends. Students are encouraged to review the [Student Conduct Code University Policy #1020](https://www.metrostate.edu/about/policies/6746) and the [Student Conduct Code Procedure #112](https://www.metrostate.edu/about/policies/6876)to understand their rights and responsibilities under the Code.

If you are aware of a potential student conduct violation, you may report it [HERE](https://cm.maxient.com/reportingform.php?MetroStateUniv&layout_id=2). If you are not certain and would like to inquire about whether something falls under the Student Code of Conduct, please email [dean.students@metrostate.edu](mailto:dean.students@metrostate.edu) .

# Sexual Violence, Sexual Harassment, and other Gender Related Discrimination Concerns (Title IX)

If you believe you have experienced sexual misconduct, harassment, or violence and would like the university to formally investigate the situation, you may submit a formal complaint. These complaints can be student to student, employee to student, employee to employee, and non-students or non-employees.

Information about student(s) involved or investigation itself are confidential and protected under Family Educational Rights and Privacy Act (FERPA). However, information about instances of sexual misconduct must be shared among university staff whose are investigating the situation and responsibilities for rendering a decision.

Students who have experienced or observed related issues may submit a report [**HERE**](https://cm.maxient.com/reportingform.php?MetroStateUniv&layout_id=1). If you are certain if something falls within this category, you may email [dean.students@metrostate.edu](mailto:dean.students@metrostate.edu) . Additionally, the Dean of Students and other related offices provide training and education on these important issues.

# Email

Metropolitan State University has designated e-mail as an official method of communication with students. **The university expects** students to be responsible for all information sent to them via their official university email account.  Refer to [Policy 1050, University E-mail](https://www.metrostate.edu/about/policies/6771), for further information.

# Academic Appeals

The university has written procedures for appealing decisions concerning grades. The student should first attempt to resolve an appeal issue informally with the instructor. To file a formal appeal, the student must begin the formal appeal process within 60 calendar days of the posting of the grade or evaluation. A staff member in Student Affairs serves as ombudsperson to work with students in preparing formal appeals. For details, refer to [Procedure 202, Academic Appeal Procedure](https://www.metrostate.edu/about/policies/7111).

RESOURCES for STUDENT SUPPORT

# Center for Academic Excellence—Tutoring and Testing Center

Phone: 651-793-1549

Web: [Center for Accessibility Resources](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.metrostate.edu%2Faccessibility&data=02%7C01%7Camy.gort%40metrostate.edu%7C57d1d6af2e194ab9ca4408d7f2a4eff5%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244662515427393&sdata=ydmX66s%2BajfiofneA9D%2F8CtO%2BGcgcbZdCnB9Lmldwbs%3D&reserved=0)

The University provides access to its programs and services by making reasonable accommodations for qualified students. Accommodations are based in individual needs.  Some common accommodations include extended testing time, distraction reduced testing spaces, alternative formats for course materials such as audio books, and assistive technology.

# Counseling Services

Phone: 651-793-1568

Web: [Counseling](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.metrostate.edu%2Fstudents%2Fsupport%2Fcounseling%2Ftherapy&data=02%7C01%7Camy.gort%40metrostate.edu%7Ce790a0f903754de0623408d7f207e47d%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637243988014816685&sdata=axwtxG%2Bf%2BIoVje%2Bt8W1ZVnqam8Gnc3Ao4X1iJNN09JY%3D&reserved=0) Services

College students often experience issues that may interfere with academic success, such as academic stress, sleep problems, balancing multiple responsibilities, life events, relationship difficulties, discrimination / oppression, or feelings of anxiety, hopelessness, or depression. If you are a friend is struggling, we encourage you to seek support. Helpful, effective, and culturally-responsive services are available on campus free of charge.

For immediate help during or after hours, on weekends and holidays, contact Counseling Services at 651-793-1568 and choose option zero to access the Metro CARES support line. Counseling Services is providing telehealth services to students during the COVID-19 pandemic. To schedule an appointment with our staff counselors, call 651-793-1568 during business hours.

# International Student Services

Phone: 651-793-1315

Web: [International Student Services](https://www.metrostate.edu/students/support/international)

The International Student Services (ISS) aids with immigration, cultural, financial, academic, and personal issues for international students at Metropolitan State University.

# Library and Information Services

Phone: 651-793-1616

Web: [Library and Information Services](http://www.metrostate.edu/library)

Email: [library.services@metrostate.edu](mailto:library.services@metrostate.edu)

The Library and Learning Center on the Saint Paul campus offers a full array of library resources, services, computers, and study spaces for the Metropolitan State University community. Librarians are available to assist you in finding information on virtually any topic. They can also guide you in evaluating scholarly and other resources for your coursework and research. Assistance is available by phone (651-7983-1614), email ([library.services@metrostate.edu](mailto:library.services@metrostate.edu)), or chat and Zoom from the library’s homepage. Through this homepage you can access more than 100 research databases and thousands of ejournals, streaming videos, and ebooks.

# Multicultural, American Indian, and Retention Services

Phone: 651-793-1543

Web: [Multicultural Success Services](https://www.metrostate.edu/students/support)

Multicultural Success Coordinators provide educational and cultural support to empower students and promote successful college transitions and graduation.

Success Coordinators advocate for increased intercultural awareness, help familiarize students with resources, and foster academic success for Asian, Asian American and Native Pacific Islander, American Indian, African, African American, LatinX, Undocumented, Women, and LGBTQA communities.

# Student Parent & Resource Center

Phone: 651-793-1564

Web: [Student Parent & Resource Center](https://www.metrostate.edu/students/support/student-parent-center)

St. John’s Hall, L.14; St. Paul Campus

The Student Parent Center is in St. John’s Hall L14 and provides a child-friendly study space. The center seeks to provide support and connect currently enrolled students and their families with campus and community resources to ease obstacles that may be interfering with their education.

# Food for Thought Food Pantry

Phone: 651- 793-1571

Web: [Food for Thought Food Pantry](https://www.metrostate.edu/students/support/food-for-thought)

St. John’s Hall, L.10; St. Paul Campus

The Food for Thought Food Pantry is a collaborative initiative between Metropolitan State University and our community partner Good in the Hood. Students seeking additional support with subsidizing their food budget can stop into the pantry and select up to 25 pounds of food per month. The pantry’s Grab and Go food program also provides on-the-go snacks for students.

# Veterans & Military Student Services

Phone: 651-793-1567

Web: [Veteran Services](https://www.metrostate.edu/students/support/veterans)

Founder’s Hall 201, St. Paul Campus

We assist all who have served or are currently serving in any branch of the United States Armed Forces. Veterans Services will advocate on your behalf. We provide help with understanding admissions requirements and academic programs, getting college credits for your military training, accessing federal and state educational and financial benefits, and VA certification of your registered courses. Thank you for your dedication, sacrifice, and service to our country.

# Zoom

As part of being a student within the Minnesota State Colleges and Universities System, you have access to a premium license of the web conferencing tool: Zoom. Due to recent events your instructors will likely be using this more frequently to host class sessions online, but you can also personally use it for meetings with your classmates!

For help getting started with Zoom, see [Getting Started with Zoom](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fservices.metrostate.edu%2FTDClient%2F1839%2FPortal%2FShared%2FFileOpen%3FAttachmentID%3D%257BB788AF09-A37A-417C-9B9C-212A059AA9E7%257D%26ItemID%3D101232%26ItemComponent%3D26&data=02%7C01%7Camy.gort%40metrostate.edu%7Cbbb17c9887624331b37a08d7f2db3311%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244895572006327&sdata=XkIZiYo5%2F4FrTqinGWWqvlaEM3YopNKJQDQB8TTe754%3D&reserved=0)

You can access your MinnState Zoom account from: [https://minnstate.zoom.us/](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fminnstate.zoom.us%2F&data=02%7C01%7Camy.gort%40metrostate.edu%7C69b4b394c89f4be500da08d7f2c59b8d%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244802835623774&sdata=16wXf2SWQfzqGdY4l7RMtyhr9HQ%2FW6Ht%2Byf6XbHwA60%3D&reserved=0), just click the "Sign on" button and login with your StarID and password.

Visit the following link to learn more about connecting to a Zoom conference:  [https://services.metrostate.edu/TDClient/1839/Portal/KB/ArticleDet?ID=101232](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fservices.metrostate.edu%2FTDClient%2F1839%2FPortal%2FKB%2FArticleDet%3FID%3D101232&data=02%7C01%7Camy.gort%40metrostate.edu%7C69b4b394c89f4be500da08d7f2c59b8d%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244802835623774&sdata=j%2F50VeADmTswJdpZEnkaBFKUB8DgHq5bXdnmOjborWQ%3D&reserved=0)

Visit the following link to learn more about hosting a Zoom conference for presenting or teaching: [https://services.metrostate.edu/TDClient/1839/Portal/KB/ArticleDet?ID=100273](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fservices.metrostate.edu%2FTDClient%2F1839%2FPortal%2FKB%2FArticleDet%3FID%3D100273&data=02%7C01%7Camy.gort%40metrostate.edu%7C69b4b394c89f4be500da08d7f2c59b8d%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244802835633767&sdata=H5DSH3%2Fgj4lmsJty1QuKa7xBm%2FCsSiRNRBY0txK4YPk%3D&reserved=0)

If you get stuck or need some extra help, you can reach out to our Information Technology Services or the Center for Online Learning.  
   
Also, the [Zoom Help Center](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsupport.zoom.us%2F&data=02%7C01%7Camy.gort%40metrostate.edu%7C69b4b394c89f4be500da08d7f2c59b8d%7C5011c7c60ab446ab9ef4fae74a921a7f%7C0%7C0%7C637244802835633767&sdata=u4t%2FMsNhdpbAr01U0AeI6eqW70MtcWAZOJDmBLFlYfE%3D&reserved=0) has many great resources, live trainings, and even fantastic technical support representatives waiting to help you if need-be.

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