

Math Science Center

**Computer Science II**

2020-2021

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# 1 schedule information

Class location: Chan Shun Hall 225 & maybe Smith Hall 101

Class time/day: 8:00am – 9:35am, Monday
8:00am – 9:50am, Wednesday
9:45am – 10:30am, Friday

Credits offered: 1
Website: <http://www.andrews.edu/~greenley/cs2> [🢢TOC](#_interactive__table)

# 2 Instructor Contact

Instructor: William Greenley, DBA

Telephone: 269-782-4395 (home), 269-208-1533 (cell)

Email: greenley@andrews.edu

Office location: Smith Hall, 104

Office hours: Irregular, please call or email to make an appointment [🢢TOC](#_interactive__table)

# 3 DISCLAIMER

This syllabus is subject to change. Subsequent versions will be on the course web site . [🢢TOC](#_interactive__table)

# 4 covid-19 guidelines

Because we are teaching and learning during a pandemic, instructors will make every reasonable effort to accommodate students’ needs. Communication is key for a successful semester. Please be in contact with your instructor if any situation arises that interferes with your learning.

Additionally, we ask the following from you, our students:

1. Wear a mask that covers your nose and mouth at all times inside the classroom and in enclosed spaces.
2. Follow the instructions of your teacher and posted signs for entering/exiting the classroom, selecting a seat, and cleaning your area.
3. Do not physically attend class if you are exhibiting symptoms or believe you may have been exposed to COVID-19. Reach out to your instructor immediately to work out the details on how you can continue learning remotely.
4. Follow your teachers' instructions and policies for camera, microphone, and software use if this course has remote learning experiences.

Commit to creating a safe classroom environment which precludes posting class materials (including links to unlisted videos or clips of videos removed from context) to social media or other forums. Disparaging faculty and classmates on social media or in virtual spaces is a breach of Christian ethics and the Andrews University community agreement.

Prerequisite: None . [🢢TOC](#_interactive__table)

# 5 course description

This course emphasizes computer problem solving using object-oriented design and programming. Students learn to approach problems systematically and approach solutions using well-known techniques of proven effectiveness. Students create modular programs using current programming languages. There is also an section on engineering needs assessment, problem solving and design during the first semester.

Prerequisite: None . [🢢TOC](#_interactive__table)

# 5 course materials

**Required:**

1. Raspberry Pi 4 with 4gb ram, keyboard, mouse, monitor, etc

**Recommended:**

1. Python Crash Course 2nd Ed, Eric Matthes
2. Home access to the internet. Software will be provided. [🢢TOC](#_interactive__table)

# 6 STUDENT LEARNING oUTCOMES

**Student Learning Outcomes (SLO) The student should be able to**:

1. Apply knowledge of computing and mathematics appropriate to the discipline.
2. Use and implement common program control structures.
3. Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.
4. Create and publish apps and games.
5. Be able to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choice. [🢢TOC](#_interactive__table)

# 7 Topics and Assignments

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Date** | **Class Topic** | **Assignments Due** |
| 1 | 09/09/20 | Introduction to year, computer check, review schedule, What is a Raspberry Pi |  |
| 09/11/20 | Raspberry Pi Getting Started, Assemble and test your Pi |  |
| 2 | 09/14/20 | Intro to Python, Lecture 1 – Variables and Simple Data Types  |  |
| 09/16/20 | Lecture 2 – Numbers | Ex 1.1-1.3 |
| 09/18/20 | Catch up and review | Quiz Lectures 1 & 2 |
| 3 | 09/21/20 | Lecture 3 – Introducing Lists | Ex 2.1-2.3 |
| 09/23/20 | Lecture 4 – Loops and working with Lists | Ex 3.1-3.5 |
| 09/25/20 | Catch up and review | Quiz Lectures 3 & 4 |
| 4 | 09/28/20 | Lecture 5 – If statements | Ex4.1-4.3 |
| 09/30/20 | Lecture 6 - Dictionaries | Ex 5.1-5.3 |
| 10/02/20 | Catch up and review | Quiz Lectures 5 & 6 |
| 5 | 10/05/20 | Lecture 7 – User input and while loops | Ex 6.1, 6.2 |
| 10/07/20 | Lecture 8 – Practice and review | Ex 7.1-7.4 |
| 10/09/20 | Catch up and review | Quiz Lectures 7 & 8 |
| 6 | 10/12/20 | Lecture 9 – Functions | Ex 8.1, 8.2 |
| 10/14/20 | No class, testing |  |
| 10/16/20 | Catch up and review | Ex 9.1, 9.2 |
| 7 | 10/19/20 | Lecture 10 – Functions (part 2) |  |
| 10/21/20 | Lecture 11 – Classes | Ex 10.1-10.3 |
| 10/23/20 | Catch up and review | Quiz Lectures 9 - 11End of 1st Marking Period |
| 8 | 10/26/20 | Lecture 12 – Classes (part 2) | Ex 11.1, 11.2 |
| 10/28/20 | Lecture 13 – File Handling | Ex 12.1, 12.2 |
| 10/30/20 | Catch up and review | Quiz Lectures 12 & 13 |
| 9 | 11/02/20 | Lecture 14 – Exception Handling | Ex 13.1, 13.2 |
| 11/04/20 | Lecture 15 – Pygame I | Ex 14.1-3 |
| 11/06/20 | Catch up and review | Quiz Lectures 14 & 15 |
| 10 | 11/09/20 | Lecture 16 – Pygame II | Submit game code done to this point. (through Pygame 1) |
| 11/11/20 | Lecture 17 – Pygame III |  |
| 11/13/20 | Catch up and review | Submit game code done to this point. (through Pygame 3) |
| 11 | 11/16/20 | Lecture 18 – Pygame IV |  |
| 11/18/20 | Lecture 19 – Pygame V |  |
| 11/20/20 | Catch up and review |  |
| 12 | 11/23/20 | Lecture 20 – Pygame VI | Submit game code done to this point. (through Pygame 5) |
| 11/25/20 | Closed for Thanksgiving |  |
| 11/27/20 | Closed for Thanksgiving |  |
| 13 | 11/30/20 | Lecture 21 – Lecture 20 answerData Visualization 1 |  |
| 12/02/20 | Data Visualization 2 | Data Visualization Lecture 1 Exercises |
| 12/04/20 | Catch Up | Data Visualization Lecture 2 Exercises |
| 14 | 12/07/20 | Data Visualization 3 |  |
| 12/09/20 | Data Visualization 4 | Data Visualization Lecture 3 Exercises |
| 12/11/20 | Catch Up | Data Visualization Lecture 4 Exercises |
| 15 | 12/14/20 | Review Lecture – Not Available Yet |  |
| 12/15/20 | Final Exam Week - Test | Test |
| 12/17/20 | Christmas Party | End of Marking Period |
| 1 | 1/4/21 | Test Review and Intro to Algorithms – 1 |  |
| 1/6/21 | Sorting Algorithms – 2 | Lec 1 Assign |
| 1/8/21 |  | Lec 2 Assign & Quiz |
| 2 | 1/11/21 | Sorting, Searching, Patterns – 3 |  |
| 1/13/21 |  | Lec 3 Assign |
| 1/15/21 |  |  |
| 3 | 1/18/21 |  |  |
| 1/20/21 |  |  |
| 1/22/21 |  |  |
| 4 | 1/25/21 |  |  |
| 1/27/21 |  |  |
| 1/29/21 |  |  |
| 5 | 2/1/21 |  |  |
| 2/3/21 |  |  |
| 2/5/21 |  |  |
| 6 | 2/8/21 |  |  |
| 2/10/21 |  |  |
| 2/12/21 |  |  |
| 7 | 2/15/21 |  |  |
| 2/17/21 |  |  |
| 2/19/21 |  |  |
| 8 | 2/22/21 |  |  |
| 2/24/21 |  |  |
| 2/26/21 |  |  |
| 9 | 3/1/21 |  |  |
| 3/3/21 |  |  |
| 3/5/21 |  |  |

**to be continued**

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# 8 GRADING criterIA

**Criteria for Grades**

Your grade will be calculated from a mix of worksheets, quizzes, tests, papers, and projects. The points for each will be added up and a percentage of the possible points will be calculated. Your letter grade will be determined from the following scale. Your percentage will be rounded to the nearest whole percent use 4/5 rounding.

 97% A+

 92% A

 90% A-

 87% B+

 82% B

 80% B-

 77% C+

 70% C

 67% C-

 50% D

 0% F

Your semester grade will be a weighted average based to 40% for each quarter, and 20% for the semester exam. These calculations represent the lowest grade that will be assigned, exceptions are sometimes made, for example, if a student struggles early on in a section but then recovers and does well at the end, the projects at the end will be given greater weight in determining the grade.

**Assignment Submission**

Preferred method of submitting the assignment will vary with the type of assignment, some will be via email, others by submitting on paper, showing on the computer screen, doing a classroom presentation, or even showing the created product. .

**Late Submission**

Without advance permission from the teacher, assignment grades will incur a weekly penalty of 10% with fractions of a week being rounded up. On their due date, assignments are due either at the beginning or end of class as specified for that particular assignment. Work must still be completed even if you are unable to attend class. [🢢TOC](#_interactive__table)

# 9 assessment rubrics

Grading methods will vary with assignment, and will be described when the assignment is given. In all cases where writing is involved, grammar and spelling will be a part of the grading. [🢢TOC](#_interactive__table)

# 10 Class policies

**Student Responsibility**

Email is the official form of communication at Andrews University. Students are responsible for checking their Andrews University email regularly.

**Professionalism**

To prepare students for the professional world, certain behaviors/activities are not allowed in the classroom.

* Cell Phones, Personal Laptops, and Recording devices: **Cell phones should be turned off** before entering the classroom. Recording devices are allowed only if pre-approved by instructor, and if approved, under no circumstance are recordings—visual or verbal—to be posted on a public website.

Laptops should not be used for surfing the web or watching movies during class. It is disrespectful and unprofessional to use these devices inappropriately during class.

* Late Assignments are unacceptable unless prearranged with instructor.
* Tardiness.
* Eating in class: **Please do not bring food or beverages to class, water is a beverage. Violations of this will result in penalties to your grade**. Closed food or beverage containers that stay closed do not count as violation of this rule.

Presentation is important. Your attention to detail, demeanor, and attire factor into how you are perceived as a professional. Active participation in class discussions and critiques is an essential part of learning. Without participating and expressing opinions and thoughts, it is impossible to clarify your goals and develop a personal style.

**Classroom Seating**

Seats are assigned through posted seating charts; these assignments may change throughout the year.

**Disability Accommodations**

If you qualify for accommodation under the American Disabilities Act, please contact Tonya Snyder as soon as possible so that accommodations can be arranged.

**Late Assignment Submission**

Without advance permission from the teacher, assignment grades will incur a weekly penalty of 10% with fractions of a week being rounded up.

**Class Absences**

All absences should be reported to the home school office and the Center, in accordance with local guidelines. Home schools will let the Center know the status of the student’s absence, excused or unexcused. Center instructors will record any absence/ tardiness and report any repeated infraction to the Center Coordinator for further action. An absence is unexcused unless the Center is contacted. **Please email absences to Tonya.Snyder@berrienresa.org.**

Responsibility for making up work for an excused absence rests with the student (no exceptions). Make-up work must be submitted to instructional staff within the equal number of days absent, plus one. Assignments made prior to absences are not considered make-up. Instructional staff has the option to waive this policy.

Unexcused absences are caused by truancy, or failure to verify an absence. Class work missed during unexcused absences cannot be made up for credit.

In the case of an early dismissal or planned absence, parents/guardians should inform the home school office about one week in advance, if possible. Please also notify each Center teacher, in writing. Make-up work, scheduled assignments, and tests are due upon return from a planned absence unless arrangements are made with the instructor prior to the absence.

Teachers will maintain accurate, daily attendance records and report daily absences to the Center office. Teachers and Administrators will notify the parents/guardians of excessive absences.

**Academic Integrity**

University learning thrives on the rigor of individual investigation, the authentic exchange of ideas, and a corporate commitment to integrity and mutual respect. University learning requires all members of the academic community to behave honestly. To that end, Andrews University’s faculty and students pledge to learn and grow together, committing to the following Standards and affirming honesty as a core component of an Andrews University education.

Students commit to do their part to build a community of honesty. Students promise to:

* 1. Present assignments, lab reports, and research findings that are not falsified in any way.
	2. Respect copyrighted and/or licensed material (whether it be directly quoted or paraphrased) by citing print or electronic sources as appropriate.
	3. Follow the source citation guidelines outlined by the course professor.
	4. Submit work that is solely created by the person to whom it is assigned.
	5. Contribute equitably when participating in group-work.
	6. Prepare for quizzes and examinations by study and review without stealing, accepting, or using unauthorized quizzes or examination materials.
	7. Follow the professor’s instructions regarding allowable aids during a quiz or examination.
	8. Complete quizzes and tests without seeking answers from or sharing answers with other students or unauthorized sources.
	9. Encourage others to high standards of integrity by refusing to assist in acts of academic dishonesty.

**Course work (a quiz, assignment, report, examination, research paper, etc.) in which a student has been dishonest generally will receive zero points towards the grade in fulfillment of a course requirement, and/or the student may receive a failing grade for the course. The professor of the course determines the appropriate consequence.**

**Language and Grammar**

There is an expectation that a student possesses excellent written language skills, particularly in the language in which the class is taught. Thus, no special consideration will be given to English as a second language learners or native-English speakers who have yet to obtain mastery in written English. Such students are advised to seek the assistance of the campus writing lab or procure the services of an editor prior to the submission of their assignments. *Tips for success* include reading your assignments aloud and having someone else do likewise prior to submission. This practice will provide you with immediate feedback on your written assignments.

**Emergency Protocol**

Andrews University takes the safety of its student seriously. Signs identifying emergency protocol are posted throughout buildings. Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting that specific location. It is important that you follow these instructions and stay with your instructor during any evacuation or sheltering emergency. [🢢TOC](#_interactive__table)

# 11 Instructor Profile

William Greenley has taught comptuer science for the Math Science Center for more than 20 years. He also owns a computer consulating business that specilizes in software for health insurance. His company publishes software that has thousands of users throughout the state of Michigan.



He has a doctorate in business administration from NOVA Southeastern University with an emphasis in Information Technology Management, a master’s degree in healthcare administration from Central Michigan University, and a bachelor’s degree in Computer Science from Columbia Union College.

He has a wife and three adult children and is active in numerous mission trips, is an active pilot, and has hobbies that include photography, camping, and building an airplane.