IRONWOOD RIDGE HIGH SCHOOL | CAREER AND TECHNICAL EDUCATION

INFORMATION TECHNOLOGY | COMPUTER SCIENCE

AP COMPUTER SCIENCE A

COURSE SYLLABUS 2021-22

INSTRUCTOR

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Office Hours: Seventh period, and Advisory Period

COURSE DESCRIPTION

AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

PREREQUISITES

It is recommended that students have successfully completed a first-year high school algebra course and AP Computer Science Principles. Students must have a strong foundation of basic linear functions, composition of functions, and problem-solving strategies that require multiple approaches and collaborative efforts. In addition, students should be able to use a Cartesian (x, y) coordinate system to represent points on a plane.

COMPUTER LANGUAGE

The course requires that solutions of problems be written in the Java programming language. Because the Java programming language is extensive, the AP Computer Science A Exam covers a subset of Java.

COURSE OVERVIEW

Modules that will be covered throughout the school year:

1. Primitive Types
2. Using Objects
3. Boolean Expressions
4. If Statements
5. Iteration
6. Writing Classes
7. Array and Array List
8. Inheritance and Recursion

CLASS MATERIALS

Textbooks, Tutorials, and/or worksheets will be provided in class.

Students will be required to create a (free) account for the following:
projectstem.org

Additional items that each student should have for class:
Journal/Notebook (3-ring binder) and pen/pencil

AP EXAM

The AP Computer Science A Exam assesses student understanding of the computational thinking practices using Java as the primary language.

GRADING POLICY

A total of 1000 points will be earned for participation, classwork, class projects, exams/quizzes, and professionalism. All work is evaluated and weighted using the following schedule each semester:

Professionalism	100 points	10%
Projects/Performance Task	300 points	30%
Class work; reflections	300 points	30%
Tests/Quizzes (Mid-Term)	100 points	10%
Final Exam	**200 points**	**20%**

The following scale will be used to calculate the final class grade:

A 1000-900	**C** 79-70%	**F** 599-500
B 899-800	**D** 699-600	

ATTENDANCE POLICY

All students will be expected to follow the Attendance Policy outlined in the Ironwood Ridge Student Handbook. Success in a CTE class requires regular and prompt attendance due to the lab-learning environment – you can replicate this class with make-up notes.

In accordance with Arizona State Law and Amphitheater Public Schools District's Governing Board policy, students cannot miss more than 10% of each class. Student enrolled in year-long course may only have 17 excused absences, after which all additional absence will be marked as "unexcused."

Please note, teachers are not required to provide make-up work for any absence that is marked unexcused. Class assignments will be accepted when an absence is excused within the school's attendance and make-up work policies. **Long-term CTE projects are due as scheduled**, even if an absence is excused. It is a student's responsibility to consult the instructor, the calendar, or other students for information about what is missed during absences.

TARDY POLICY: Students are expected to **be in their seats** when the bell rings. Excessive tardiness will be reported to the Administration and effect the Professionalism Grade.

PROFESSIONALISM EXPECTATIONS

A CTE Professionalism Grade will be given to each student each week that will be worth 10% of the Semester's final calculation. This grade reflects the workplace expectations that all students should aspire to meet in order to be ready for successful employment in the IT industry or other career.

The following expectations will be graded during each semester:

TIME MANAGEMENT: Student stays on schedule. **Completes tasks in a timely basis**. Prioritizes tasks, recognizes time constraints, and avoids distractions (playing games, using cell phone during lecture, etc.) while meeting deadlines and uses time effectively.

TEAMWORK: Gets along with fellow classmates, respects the rights of others and shows a cooperative spirit in class. Routinely provides useful ideas when participating in the group and in classroom discussion. Almost always listens to, shares with, and supports the efforts of others. Positive attitude in class and promotes people working together.

SAFETY: Work habits and attitude demonstrate a dedication to working safely: accident prevention, safety awareness, and maintaining the computer equipment and school property. Keeps computer station workplace safe and tidy while respecting the computer lab food/drink policy.

WORK ETHIC: Attends class every day and is punctual when reporting to class and minimizes restroom breaks during class. L**ooks beyond the assignment to demonstrate a higher level of understanding** and student takes advantage of Conference Period. After any absence, student finds out what was missed and completes missing work.

LEADERSHIP: Establishes challenging goals for him/herself and others in a team project; delegates (when appropriate) and coordinates effectively; **promotes innovation** in the class and team effort. Actively looks for and suggests solutions to problems.

CLASS POLICIES AND PROCEDURES

All students will always be expected to abide by the Ironwood Ridge Student Code of Conduct while on campus and in the Classroom.

1. Class will begin on time.
2. A seating chart may be used to monitor the computer usage and limit distractions.
3. Students will demonstrate respectful conduct towards fellow students, instructors, classroom/equipment, and guest speakers.
4. Students will abide by the school Dress Code Policy.
5. All personal items including electronic devices (cell phones, iPads, personal laptops, iPods, etc.) must be **turned off and in a backpack/purse** during class.

   Students using cell phones during class lectures and during class will be subject to disciplinary action in accordance with the School Code of Conduct.
6. **Hall Pass:** It's expected that all students used the restroom during passing period and lunch. If the restroom is needed during class, students may sign-out after asking the instructor. *Restroom visits will not be permitted during the first 15 minutes (start) of class nor during the last 10 minutes (or end) of class.*
7. Late work is generally not accepted. Students with excused absences on due dates must contact instructor for alternative due dates for work.

   Most assignments will be uploaded to a student server online via File Transfer Protocol (FTP) or on a class server – creating a timestamp on all projects.

   Quizzes/tests may be made up during Conference Period ONLY and must be completed within two weeks of original testing day.

Computer Lab Policies and Procedures

Working in the CTE A307 Computer Lab is a privilege. Ironwood Ridge CTE and JTED have contributed to making this lab one of the premiere Computer Science classrooms in Southern Arizona. Professional conduct will be expected by all students to maintain respect and safety in the lab at all times.

1. **Food and drink (including gum) will not be permitted in the classroom during class. Exception is water with a closed lid.**
2. The computers are to be used for this course only during class.
3. Students using the computers for other work and/or visiting inappropriate sites will have their station shut down immediately. *This may result in an immediate referral*
4. Students may not modify the computer's operating system and/or hardware in any way. *This will result in an immediate referral.*
5. Students must maintain the integrity of their computer station, including the computer and peripherals, desk and chair.
6. **It is the student's responsibility to care for any equipment in his/her possession and will be responsible for any damage or loss that occurs due to negligence.**

Printing: Use the default printer for class related printing jobs. Instructor permission will be required to print to the color printers.

ADVISORY PERIOD

The computer lab will be open during most days during the Advisory Period. This will be time set aside for students to work on assigned projects, get extra help, and complete quizzes/tests when absence. **Keep in mind that Advisory Period should be used to get extra help or time with *current projects* – not to make up for months of work or projects in one or two hours.** You will already have had plenty of time during class.

Students may also work on other class work during Advisory Period if needed.

Advisory Period Policies and Procedures

1. **All Students must obtain a PASS from Instructor in advance of the day's Advisory Period.**
2. All Students must sign-in during Advisory Period.
3. Food and drink (including gum) will not be permitted in the classroom. Exception is water bottles with a closed lid.
4. Any student using the computers for gaming and/or visiting inappropriate sites will have their station shut down immediately and be asked to leave the computer lab.
5. Conversations must be kept to minimum – other students will be working and may be taking tests.
6. Printing: Use the default printer for class related printing jobs. Instructor permission will be required to print to the color printers.

CONSEQUENCES

We will attempt to provide any consequences within the class between the instructor and student. However, the following progression will be followed for any violations of the above-mentioned policies in the classroom:

First offense: Verbal warning.
Second offense: Written warning; parents may be contacted
Third offense: Administrative referral

- **Immediate Referral:** Damaging/modifying equipment
- **Immediate Referral:** Inappropriate website and/or computer games

ACADEMIC DISHONESTY POLICY

This course will encourage collaboration among students on certain projects; however, simply copying or manipulating another student's work will be considered cheating. Any student caught cheating will receive a zero for the project, quiz or test.

The student providing the copied code on a project will also receive a zero, unless they can prove otherwise they did not have a role in knowingly helping the offender.

Please refer to the Ironwood Ridge Student Handbook for additional information including consequences for academic dishonesty.

ADDITIONAL HELP

For additional help, the computer lab can be available most mornings and during conference periods, or by appointment during seventh period or after school.

Students may seek out additional help at these times or just use the additional time to work on projects.

THE SMALL PRINT

The instructor reserves the right to modify this syllabus and the course modules at any time during the school year. The instructor will distribute an updated syllabus to all students upon any change.