

Providence Career & Technical Academy

8894/01 & 02 INTRO COMPUTING & DATA SCIENCE

Syllabus

Instructor Name: Patricia Hill
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Time Frame: 2021-2022

Course Description:

The “**8894/01 INTRO COMPUTING & DATA SCIENCE**” course is a half year course which introduces students to computer programming in an engaging, fun, creative way while providing the computational thinking skills of programming, algorithm development, simulation and data analysis.

Computer Technology Standards Addressed:

3-CT-V-1	Explain the role of a variable within a program, and the scope in which its name and value can be used.
3-CT-D-1	Create a program that processes a collection of data.
3-CT-C-1	Create and justify the selection of specific control structures when tradeoffs involve code organization, readability, and program performance and explain the benefits and drawbacks of choices made.
3-CT-M-1	Identify existing computational artifacts that can be used for the subtasks of a decomposed problem.
3-CT-M-2	Create computational artifacts by incorporating predefined procedures and external artifacts.
3-CT-CD-1	Systematically design and implement computational artifacts for targeted audiences by incorporating feedback from users.
3-T-CD-2	Systematically test and refine programs using a range of test cases.
3-CSN-HS-1	Analyze a computing system and explain how abstractions simplify the underlying implementation details embedded in everyday objects.

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3-CSN-HS-1	Compare levels of abstraction and interactions between application software, system software, and hardware layers.
3-CSN-T-1	Develop and communicate troubleshooting strategies others can use to identify and fix errors.
3-CY-R-1	Explain the privacy concerns related to the collection and generation of data through automated processes that may not be evident to users.
3-CY-R-3	Explain how the digital security of an organization may be affected by the actions of its employees.
3-DA-CVT-1	Select appropriate data-collection tools and presentation techniques for different types of data.
3-DA-IM-1	Create computational models that represent the relationships among different elements of data collected from a phenomenon or process.
3-DA-IM-2	Discuss potential hidden biases that could be introduced while collecting a dataset and how these biases could affect analysis conclusions.
3-DA-IM-3	Evaluate the ability of models and simulations to test and support the refinement of hypotheses.
3-DL-CU-1	Select appropriate software tools or resources to create a complex artifact or solve a problem.
3-DL-US-1	Describe different kinds of computations that software tools perform to tailor a system to individual users.
3-RC-CU-1	Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.
3-RC-CU-2	Design and analyze computational artifacts to reduce bias and equity deficits.
3-RC-SLE-1	Evaluate the impact of intellectual property laws on the use of digital information.

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Required Textbooks, Reading and Supplementary Materials:

- University of Rhode Island materials
- Online resources
- Teacher created resources

Work Completion/Due Dates

Due dates will be communicated via Google Classroom. Students should expect 24 hours' notice for assignments and 48 hours' notice for assessments.

Grading Policy:

- Classwork 50%
- Projects/Benchmarks 30%
- Quiz 10%
- Attitude 10%

EXPECTATIONS:

See Class Expectations and Procedures (Located in Google Classroom)

RTI Plan

- The P-Tech department will meet once a month to identify and discuss students that are frequently absent and/or not successfully completing required course work.
- The student's P-Tech teacher will share concerns with the student, work with the student to create an improvement plan, and monitor progress. If after 2 weeks, no improvement is shown, a meeting will be scheduled with the RTI team to discuss creating an RTI plan.
- Upon completion of the RTI plan, the P-Tech department will contact the RTI team to discuss the effectiveness of the plan and to decide next steps: continue with RIT, exit RTI, or referral to special education.