**SYLLABUS**
**INFORMATION SYSTEMS DESIGN & MANAGEMENT (ISDM) 2 (ROP)**
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**COURSE DESCRIPTION**
Information Systems Design and Management II is an advanced course in information systems that adheres to State of California CTE (Career Technical Education) Information Technology Standards, and to the new California Common Core Standards. Based on completion of the introductory Information Systems course (ISDM), students in this course will move on to topics in programming, Cloud Computing (including deploying a student-generated program in the Cloud), and assembling and programming robots. Lectures from industry professionals discuss careers in the information technology industry. The final assignment is a senior defense project that involves an oral defense of one piece of the student's work produced over the three-year academy program.

**Individual Assignments lead to the Student Objectives within the Course which Include:**

**A. Information Technology and College and Career Readiness**
Students will:
Understand the fundamental concept that Computer Information Systems are a backbone of the U.S. (and World) economy; Understand the role that Computing Platforms play as the basis for Information Systems; Understand Computing Platforms' product development cycle
Understand career opportunities within the Information Systems economy; Have demonstrated the basic skills and behavior norms necessary to enter a position in business; Have completed the application process for entrance into various colleges; Have completed applications for financial support (applications for FAFSA and scholarships) Have evaluated post-secondary college and career options and have made a decision on the next step.

**B. Creating Web and Mobile Computer Apps**

Students will:
Be introduced to computer programming and coding.
Be introduced to career opportunities in computer application development. (Notably, this unit opens the programming career pipeline for women and students of color.)
Be assigned hands-on coding projects, instilling an understanding of the programming task, and of the satisfaction that comes from creating a computer app.

**C. Web Apps Delivered from the Cloud**

Students will:
Learn the key components of the cloud infrastructure.
Understand the rationale for business uses of the cloud.
Understand the history of the cloud. What came before cloud computing, and what are its benefits and drawbacks?
Architect a cloud topology from components, to understand the flow of information into and out of the cloud.

Implement a cloud infrastructure to host a Web app in the cloud.

**D. Building and Operating Robots**

Students will:
Be introduced to the applied use of technology, leading to career opportunities in the Information Systems–based industry.
Learn how to build a rolling robot incorporating a BASIC Stamp 2 microcontroller brain.
Learn the history of robotics platforms, and the mathematical and engineering concepts that support robotics-based information systems.
Gain knowledge (through individual research) of the historical and future uses of robots in industry.
Develop skills in applications programming, as applied to robotics platforms and systems.
Apply concepts from the fields of mathematics, computer programming, Information Technology, and engineering to address real-world problems using robotics platforms.

**E. Senior Defense of Student's ITA (Information Technology Academy) Work Products**

Students will:
Enhance their oral communication skills through ongoing presentation of their work products, culminating in a 15-minute senior defense presentation to working professionals.
Learn the concept of "continuous improvement" of their work, through the production and continuous refinement of work produced over their Information Technology Academy career.
Gain college- and career-readiness capabilities.

**Grading Policies**

Letter Grades will be assigned using the default WCCUSD grading procedures.
Total assigned points will vary depending on assignment. Total points will be weighted and computed as follows:

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| Projects 20% | Technical Applications 15% | Literacy 10% | College and Career Development 10% |
| Participation 25% | Keyboarding 10% | Final Exam 5% | |
| Each Category includes 20 % built in Exams / Quizzes | | | |