Date Dec. 6, 2013
School / Department SBHS/CS

Santa Barbara High School District
NEW COURSE APPROVAL

I. The teacher proposing the new course of approval will submit this completed form, along with 10 copies of the form, to the Administrative Curriculum Committee on or by _____.

II. If a new textbook needs to be purchased for the new course, please remember to complete the 'Request for Textbook Adoption (Non- Primary State Adoption)' form.

III. Description of Proposed Course.

Before you complete this form, please make sure that you have considered the following questions:
- *Is there a similar course already being taught at another site?*
- *Have I looked through the district course catalog to make sure that the course doesn't already exist?*

A. Title of course. C Programming for Robotics
B. Length of course (semester, year long).
C. What type of learners will take the course? Circle all that apply.
   a. **Special Education** **GATE** **English Language Learners**
D. Description of the standards taught in the course. If you need more room to answer the questions than what is allotted, please continue onto an additional sheet of paper and attach to form.
E. What A-G requirement does it fulfill? (High School Course only)
F. Does the course have targeted ability level? If so, what is the designation of the course? (AP, Honors, College Prep)
G. Explain the rationale for the creation of the course. What need does it fulfill?
H. Describe the instructional materials used. Include the cost of instructional materials.
I. Describe any other costs associated with the course. What will be your source of funding for these materials?
J. What is the targeted grade level of this course? Justification for targeted grade level.
K. Describe how this course fits into the sequence of courses already being offered at your site.
L. What credential(s) are required to teach this course? Additional training?
M. Are there any partnerships with outside agencies? (businesses, community programs, colleges, grants). If yes, please explain.

IV. Site Level Approval Signatures

_____ Date 6 Dec 13
Teacher Proposing Course

_____ Date 6 Dec 13
Department Chair

_____ Date _____
Additional Teacher (Same Department)

_____ Date 12/6/13
Head Counselor

_____ Date 12.6.13
Principal

The Administrative Curriculum Committee will review the proposed course and forward the proposal to all secondary sites for approval and review.

V. Other Site Level Approval Signatures.

Date of meeting in which the proposed course was discussed 12/18
✓ Approved
_____ Denied (include rationale for decision if denied)

Date 12/18/13

Chairperson of Department

After obtaining signatures, please forward this document to the Administrative Curriculum Committee at the District Office. This committee will review the forms and forward the completed proposal to the Associate Superintendent.

Date _____

Associate Superintendent

SBHS District New Course Approval

Section III, Description of Proposed Course.

A. Title: C Programming for Robotics
B. Duration: Semester long.
C. All types of learners are welcome in this course. There are no programming prerequisites, though students should be comfortable using a computer and must be enrolled concurrently in Geometry or higher math course.
D. The course objectives are to
    - Learn and master:
        - The C programming language, including
            - basic syntax, primitives, boolean logic, flow control, operators, pointers, functions, structures, and arrays
            - The Arduino IDE
            - C standard libraries and selected topics, including
                - Strings, math functions, I/O
        - Arduino
            - Basics of micro-controller interfaces with sensors.

    The Common Core State Standards addressed are
    - CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.
    - CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.
    - CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.
    - CCSS.Math.Practice.MP4 Model with mathematics.
    - CCSS.Math.Practice.MP5 Use appropriate tools strategically.
    - CCSS.Math.Practice.MP6 Attend to precision.
    - CCSS.Math.Practice.MP7 Look for and make use of structure.
    - CCSS.Math.Practice.MP8 Look for and express regularity in repeated reasoning.

E. This will fulfill the UC "g" - College-preparatory elective requirement
F. The targeted ability level is described in section C.
G. The rationale for the creation of this course is to provide an alternative (Summer school) route for students to learn introductory CS and programming skills as well as to provide a solid programming course alternative for robotics club students who may not take any other programming course. Those who succeed in this course will be well positioned for the APCS course. Advanced students without prior programming experience may even use this as a quick way to prepare for the Mobile Programming with Linear Algebra course.
H. Instructional materials include
    - A computer lab with one computer per student
    - Arduino micro-controller boards (1 per every 1 or 2 students)
    - The free Arduino Integrated Development Environment (IDE) and drivers
    - Free online Arduino resources (tutorials, guides)
    - Possible textbooks: C Programming for Arduino by J. Bayle ($30). Funding provided by SBHS
I. No other known costs exist at this time
J. The targeted grade level is students entering 10-12 the following fall.

K. This course fits into the sequence of Computer Science courses as a summer bridge for those wishing to prep for APCS or beyond, and as a crash course in programming and robotics for robotics club members.
L. Secondary Math Credential with competency in Computer Science / Computer Programming, C and or C++, and experience with Arduino microprocessors.
M. No partnerships with outside agencies at this time.