CLEMS☙N
School of COMPUTING

November 11, 2015

Memorandum

To: Debra Sparacino, Registrar

Subject: Changes to AP Credit for CPSC Courses

The CollegeBoard is introducing a new Advanced Placement course called AP Computer Science Principles. Please see apstudent.collegeboard.org/apcourse/ap-computer-science-principles for more details.

To better match the current AP Computer Science A course as well as the new AP Computer Science Principles course, the School of Computing is proposing two new courses: CPSC 1060, Introduction to Programming in Java, and CPSC 1210, Computational Thinking.

Should these new courses be approved by the University, we want to make the following changes to the Advanced Placement Credit.

Currently the chart on p. 16 in the Undergraduate Announcements contains:

AP Exam	Score	Clemson Course	Credit Hours
Computer Science A	3,4,5	CPSC 1010	4

We ask that this be changed to:

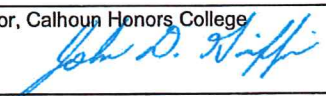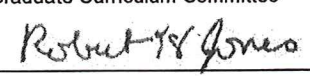| AP Exam	Score	Clemson Course	Credit Hours
Computer Science A	3,4,5	CPSC 1060	4
Computer Science Principles	3,4,5	CPSC 1210	3

Chair, Department Curriculum Committee _____ 11/11/15 Date

Department Chair _____ 11/11/15 Date

Chair, College Curriculum Committee _____ 11/24/15 Date

College Dean _____ 11/24/15 Date

Director, Calhoun Honors College _____ Date

Chair, Undergraduate Curriculum Committee _____ 4/1/2016 Date

Chair, Graduate Curriculum Committee _____ Date

Provost _____ 6/20/16 Date

President _____ Date

000105

Add Undergraduate Course

Course Attributes

Subject Abbreviation:	CPSC-Computer Science	**Catalog Title:**	Introduction to Programming in Java ☐ **Additional Fee?**
Course Number:	1060	**Transcript Title:**	Intro Programming Java Justification
Effective Term:	Fall 2016	**Cross-reference(s):**	
College:	Engineering and Science	**Grade Mode:**	Standard Letter
Department:	School of Computing		

Form

User ID: mark	**Name:**	Mark Smotherman	
Date: 12/07/2015	**Number:**	14435	

Hours

Fixed Credit Course

Credit Hrs	Contact Hrs
4	3

Variable Credit Course

Credit Hrs		Contact Hrs	
Min	Max	Min	Max

Rationale for Add Course

- ☐ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☐ Alternative Delivery of Content
- ☐ Improve Time to Degree
- ☑ Evolution of the Discipline
- ☐ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☐ Other (Please specify.)

Schedule Types

- ○ Field Course
- ○ Independent Study
- ○ Internship
- ○ Lab No Fee
- ○ Lab With Fee
- ● Lecture
- ○ Other
- ○ Seminar
- ○ Studio
- ○ Tutorial

Projected Enrollment

Year 1: 30
Year 2: 60
Year 3: 60
Year 4: 60

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

Homeworks 20% Labs 15% Programming assignments 20% Quizzes 10% In-class exams 15% Final exam 20%

Catalog Description

Principles of software development, style, and testing. Topics include procedural and object-oriented programming in the context of real-world applications. Credit may be received for only one of CPSC 1010, 1060, or 1110.

☑ Prerequisite(s)   ☑ Corequisite(s)

Preq or concurrent enrollment: MATH 1020 or MATH 1040 or MATH 1050 or MATH 1060 or MATH 1070 or MATH 1080 or MATH 2070. Students who do not meet the prerequisite, but who score a satisfactory score on the Clemson Mathematics Placement Test, or have AP or transfer credit for their math requirements, may request a registration override from the instructor. Coreq: CPSC 1061.

Required course for students in

(Alternative to CPSC 1010 for CPSC and CIS majors.)

Statement of need and justification based on assessment of student learning outcomes

This course is an alternate introductory programming course in Java. Java is a popular first programming language. High school AP Computer Scienc A is taught in Java and numerous transfer students have taken a first course in Java; thus, this course will help in providing the correct AP and transfer credits. This course will also support students in other majors who want a first course in Java.

Textbook(s)
W. Savich, Java: An Introduction to Problem Solving and Programming, 7th ed., Pearson, 2014.

Learning Objectives
Students who are successful in this course will demonstrate: 1. Ability to write, compile, debug, and run a software program. 2. Ability to design procedural programs that use variables, decision statements, arrays, and repetition statements. 3. Ability to trace through source code to determine output of a program. 4. Ability to design a class and instantiate an object in Java. 5. Ability to use an integrated development environment. 6. Understanding of appropriate documentation. 7. Understanding of top-down design. 8. Understanding of basic searching and sorting algorithms.

Topical Outline
Hardware basics (1) Software basics (1) Programming style and documentation (2) Integrated Development Environments (1) Basic I/O (1) Data types and Variables (including constants) (2) Operators (2) Arithmetic Expressions (2) Decision statements (2) Repetition statements (4) Program tracing, testing, and debugging (3) Information Encapsulation (2) Functions & Methods (3) Scope (1) Arrays (2) Searching and Sorting (Selection and Bubble) (2) Overloading (1) Classes (3) Objects (3) Constructors (1) Applications (4) Examinations (2)

Syllabus

Upload File: CPSC1060-20151111180054.docx

Description: CPSC 1060 syllabus

Chair, Department Curriculum Committee	Date
Department Chair	Date
Chair, College Curriculum Committee	Date
College Dean	Date
Director, Calhoun Honors College	Date
Chair, Undergraduate Curriculum Committee	Date
Chair, Graduate Curriculum Committee	Date
Robert H Jones	*6/20/16*
Provost	Date
President	Date

This course is an alternate introductory programming course in Java. Java is a popular first programming language. High school AP Computer Science A is taught in Java and numerous transfer students have taken a first course in Java; thus, this course will help in providing the correct AP and transfer credits. This course will also support students in other majors who want a first course in Java.

Textbook(s)
W. Savich, Java: An Introduction to Problem Solving and Programming, 7th ed., Pearson, 2014.

Learning Objectives
Students who are successful in this course will demonstrate: 1. Ability to write, compile, debug, and run a software program. 2. Ability to design procedural programs that use variables, decision statements, arrays, and repetition statements. 3. Ability to trace through source code to determine output of a program. 4. Ability to design a class and instantiate an object in Java. 5. Ability to use an integrated development environment. 6. Understanding of appropriate documentation. 7. Understanding of top-down design. 8. Understanding of basic searching and sorting algorithms.
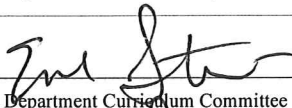
Topical Outline
Hardware basics (1) Software basics (1) Programming style and documentation (2) Integrated Development Environments (1) Basic I/O (1) Data types and Variables (including constants) (2) Operators (2) Arithmetic Expressions (2) Decision statements (2) Repetition statements (4) Program tracing, testing, and debugging (3) Information Encapsulation (2) Functions & Methods (3) Scope (1) Arrays (2) Searching and Sorting (Selection and Bubble) (2) Overloading (1) Classes (3) Objects (3) Constructors (1) Applications (4) Examinations (2)
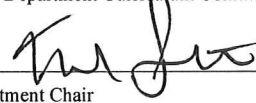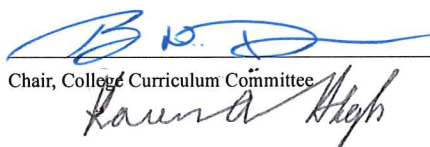

Syllabus

Upload File: CPSC1060-20151111180054.docx

Description: CPSC 1060 syllabus

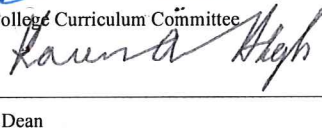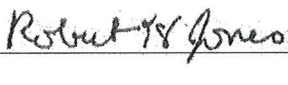|	
Chair, Department Curriculum Committee	11/23/15 Date
Department Chair	11/23/15 Date
Chair, College Curriculum Committee	11/24/15 Date
College Dean	11/24/15 Date
Director, Calhoun Honors College	Date
Chair, Undergraduate Curriculum Committee	4/1/2016 Date
Chair, Graduate Curriculum Committee	Date
Provost	6/20/16 Date
President	Date

108

Add Undergraduate Course

Course Attributes

Subject Abbreviation:	CPSC-Computer Science	Catalog Title:	Computing, Ethics, and Global Society [ ] Additional Fee?
Course Number:	2920	Transcript Title:	Computing, Ethics, Society Justification
Effective Term:	Fall 2016	Cross-reference(s):	
College:	Engineering and Science	Grade Mode:	Standard Letter
Department:	School of Computing		

Form

User ID:	mark	Name:	Mark Smotherman
Date:	11/11/2015	Number:	14449

Hours

Fixed Credit Course
Credit Hrs   Contact Hrs

3   2

Variable Credit Course
Credit Hrs   Contact Hrs
Min Max Min Max

Rationale for Add Course
- [ ] Strengthen Program Requirement(s)
- [ ] Alignment of Student Learning Outcomes
- [ ] Alternative Delivery of Content
- [ ] Improve Time to Degree
- [x] Evolution of the Discipline
- [ ] Changing Prerequisites
- [ ] Address DWF Rates
- [x] General Education Modifications
- [ ] Other (Please specify.)

Schedule Types
- [ ] Field Course
- [ ] Independent Study
- [ ] Internship
- [ ] Lab No Fee
- [ ] Lab With Fee
- [x] Lecture
- [ ] Other
- [ ] Seminar
- [ ] Studio
- [ ] Tutorial

General Education
- [ ] English Composition
- [ ] Oral Communication
- [ ] Mathematics
- [ ] Natural Science w/Lab
- [ ] Math or Science
- [ ] A&H (Literature)
- [ ] A&H (Non-Literature)
- [ ] Social Science
- [ ] CCA
- [x] STS

Projected Enrollment
Year 1: 25
Year 2: 50
Year 3: 75
Year 4: 75

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

Homeworks 15% Papers 20% Recitation section participation 15% In-class exams 30% Final Exam 20%

Catalog Description
Discussion of the concern for the way in which computers pose new ethical questions or pose new versions of standard moral problems and dilemmas. Application of ethical concepts and frameworks to guide the computer professional. Topics include the digital divide, privacy, globalization, professional code of ethics, e-waste, and intellectual

[x] Prerequisite(s) [x] Corequisite(s)
Preq.: ENGL 1030 Coreq.: CPSC 2921

Statement of need and justification based on assessment of student learning outcomes
The goal of this course is an STS course that specifically focuses on the role of computing and its impact on ethics and global society.

Textbook(s)
M. Quinn, Ethics for the Information Age, 6th ed., Addison-Wesley, 2013.

Learning Objectives
By completing this course, students will be able to: 1. Describe the role of data collection for various systems 2. Investigate the impact of technological solutions to privacy problems 3. Explain the ethical responsibility of ensuring software correctness, reliability and safety 4. Discuss the philosophical bases and rationale for the legal protection of intellectual property 5. Describe and critique legislation aimed at digital copyright infringement. 6. Discuss the issues involved in securing software patents 7. Describe the mechanisms that typically exist for a computing or technology professional to keep up-to-date 8. Discuss the evidence for and against the notion of a digital divide 9. Identify global social and environmental impacts of computer usage and disposal

Topical Outline
• Ethical Theories (4 hours) o Ethical argumentation o Ethical Theories o Moral assumptions and values • Intellectual Property for Tangible and Intangible Items (4) o Philosophical foundations of intellectual property o Intellectual property rights and legal foundations for intellectual property protection o Intangible digital intellectual property • Digital Rights Management and Copyright Protection (4) o Digital rights management o Copyrights, patents, trade secrets, trademarks o Foundations of the open source movement o Software piracy • Privacy and computing (4) o Philosophical foundations of privacy rights o Legislation and foundations of privacy protection o Privacy implications of widespread of widespread data collection o Technology-based solutions for privacy protection • Consequences and Reliability (2) o Accountability, responsibility, and liability • Computer Security (2) o Examples of computer crimes and legal redress for computer criminals o Social engineering, identity theft, and recovery o Motivations and ramifications of cyber terrorism and criminal hacking • Ethical Dissent and Whistle-Blowing (1) o Whistle-Blowing • Professionalism and Professional Credentialing (1) o The nature of professionalism including care, attention and discipline, fiduciary responsibility, and mentoring o Accountability, responsibility, and liability o Professional certifications, codes of ethics, conduct, and practice. o Time-to-market and cost considerations versus quality professional standards • Ergonomics and Healthy Computing Environments (1) • E-waste (1) o Sustainability • Global issues (2) o Economics of Computing o Regional Issues • Special or Current Topics (2) o Social implications of computing in a networked world o Impact of social media on individualism, collectivism, and culture • Examinations (2)

Learning Activities associated with General Education competencies (if applicable)
Please see the syllabus for more details. Some of the activities listed on the syllabus that can be identified within this document's word count include: Illustrate the use of example and analogy in technical decisions. Evaluate ethical/social tradeoffs in technical discussions. Discuss the philosophical bases of intellectual property. Describe legislation aimed at digital copyrights. Identify the global nature of software piracy. Discuss the philosophical basis for the legal protection of personal privacy. Critique the intent, potential value, and implementation of various forms of privacy legislation. Describe the ethical responsibility of ensuring software correctness, reliability, and safety. Examine the ethical and legal issues surrounding the misuse of access and various breaches in security. Describe issues associated with industries' push to focus on time to market versus enforcing quality professional standards. Analyze the pros and cons of reliance on computing in the implementation of democracy (e.g. delivery of social services, electronic voting). Discuss positive and negative ways in which computer technology (networks, mobile computing, cloud computing) alters modes of social interaction at the personal level.

---Syllabus---
Upload File: CPSC 2920-20151111161829.docx

Description: CPSC 2920 syllabus

[signature]	11/11/15
Chair, Department Curriculum Committee	Date
[signature]	11/11/15
Department Chair	Date
[signature]	3/22/2016
Chair, College Curriculum Committee	Date
[signature]	3/23/2016
College Dean	Date
Director, Calhoun Honors College	Date
[signature]	4/1/2016
Chair, Undergraduate Curriculum Committee	Date

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Add Undergraduate Course

Course Attributes

Subject Abbreviation: CPSC-Computer Science   **Catalog Title:** Computing, Ethics, and Global Society Recitation ☐ **Additional Fee?**

Course Number: 2921   **Transcript Title:** Comp, Ethics, Soc Recitation   Justification

Effective Term: Fall 2016   **Cross-reference(s):**

College: Engineering and Science   **Grade Mode:** Non-Gradeable

Department: School of Computing

Form

User ID: mark   **Name:** Mark Smotherman

Date: 03/02/2016 **Number:** 14447

Hours

Fixed Credit Course
Credit Hrs Contact Hrs

0   1

Variable Credit Course
Credit Hrs Contact Hrs
Min Max Min Max

Rationale for Add Course

☐ Strengthen Program Requirement(s)
☐ Alignment of Student Learning Outcomes
☐ Alternative Delivery of Content
☐ Improve Time to Degree
☑ Evolution of the Discipline
☐ Changing Prerequisites
☐ Address DWF Rates
☑ General Education Modifications
☐ Other (Please specify.)

Schedule Types

○ Field Course
○ Independent Study
○ Internship
○ Lab No Fee
○ Lab With Fee
○ Lecture
● Other
○ Seminar
○ Studio
○ Tutorial

Projected Enrollment

Year 1: 25
Year 2: 50
Year 3: 75
Year 4: 75

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

Presentations 50% Quizzes 50% (will be included in grade for CPSC 2920)

Catalog Description

Non-credit recitation sections to accompany CPSC 2920.

☐ **Prerequisite(s)** ☑ **Corequisite(s)**

Coreq.: CPSC 2920

Statement of need and justification based on assessment of student learning outcomes

The goal of the CPSC 2920 course is an STS course that specifically focuses on the role of computing and its impact on ethics and global society. CPSC 2921 supports the CPSC 2920 course by providing break-out / recitation sessions in which the course topics can be discussed in smaller groups of students.

Textbook(s)

None

Learning Objectives

(Smaller group break-out/recitation sessions in support of CPSC 2920.) By completing this course, students will be able to: 1. Describe the role of data collection for various systems 2. Investigate the impact of technological solutions to privacy problems 3. Explain the ethical responsibility of ensuring software correctness, reliability and safety 4. Discuss the philosophical bases and rationale for the legal protection of intellectual property 5. Describe and critique legislation aimed at digital copyright infringement. 6. Discuss the issues involved in securing software patents 7. Describe the mechanisms that typically exist for a computing or technology professional to keep up-to-date 8. Discuss the evidence for and against the notion of a digital divide 9. Identify global social and environmental impacts of computer usage and disposal

Topical Outline

Ethical theories (2 sessions) Intellectual property (2) DRM and copyright (2) Privacy and computing (2) Consequences and reliability (1) Computer security (1) Ethical dissent and whistle-blowing (0.5) Professionalism and professional credentialing (0.5) Ergonomics and healthy computing (1) Global issues (1) Current topics (2)

Learning Activities associated with General Education competencies (if applicable)

Please see CPSC 2920.

Syllabus

Upload File: CPSC 2920-20151111170234.docx

Description: CPSC 2920 syllabus describes recitation sessions

108-A

(signature)   3/2/16
Chair, Department Curriculum Committee   Date

(signature)   3/2/16
Department Chair   Date

(signature)   3/22/2016
Chair, College Curriculum Committee   Date

(signature)   3/23/16
College Dean   Date

Director, Calhoun Honors College   Date

John D. Griffin (signature)   4/1/2016
Chair, Undergraduate Curriculum Committee   Date

Chair, Graduate Curriculum Committee   Date

Robert H Jones (signature)   6/20/16
Provost   Date

President   Date

CLEMSON
U N I V E R S I T Y

Brian N. Dominy
Chair, Curriculum Committee
College of Engineering and Science

March 23, 2016

Members of the Faculty,

I am writing this memo on behalf of the faculty representatives on the curriculum committee for the College of Engineering and Sciences. We are proposing a new policy requiring that students achieve a 2.0 GPA or higher in courses constituting a minor in order to earn that minor. While a "D" is often considered a passing grade in a course, it is also considered to be a demonstration of unsatisfactory work in a subject (see page 27:"Grading System" of the 2015-16 undergraduate announcements). This is consistent with a current policy that requires an overall GPA of 2.0 or above in order to earn an undergraduate degree from Clemson (see page 31:"Graduation Requirements" of the 2015-16 undergraduate announcements). Since an earned minor (similar to an earned major) implies expertise in some area, we are suggesting a similar 2.0 GPA requirement <u>for courses satisfying the minor</u>.

In an effort to clarify our proposal, an example of our college's suggested language for the undergraduate catalog is given below:

"In addition to other institutional requirements, candidates for a baccalaureate degree with a declared minor are required to have a 2.0 or higher cumulative grade-point average in all courses comprising the minor taken at Clemson. In programs requiring a minor, satisfying this requirement is necessary for graduation. In programs not requiring a minor, failure to satisfy this requirement will not prevent graduation but the minor will not appear on the student's diploma or transcript."

Sincerely,

Brian N. Dominy, Ph.D.
Chair, CoES Curriculum Committee