KINGSBOROUGH COMMUNITY COLLEGE
The City University of New York

CURRICULUM TRANSMITTAL COVER PAGE

Department: Mathematics & Computer Science **Date:** 01/09/2017

Title Of Course Or Degree: CP 300 - Computers and Society

Change(s) Initiated: (Please check)

- ☐ Closing of Degree
- ☐ Closing of Certificate
- ☐ New Certificate Proposal
- ☐ New Degree Proposal
- ☑ New Course
- ☐ New 82 Course
- ☐ Deletion of Course
- ☐ Change in Degree or Certificate Requirements
- ☐ Change in Degree Requirements (adding concentration)
- ☐ Change in Pre/Co-Requisite
- ☐ Change in Course Designation
- ☐ Change in Course Description
- ☐ Change in Course Title, Numbers Credit and/or Hour
- ☐ Change in Academic Policy
- ☐ Pathways Submission:
  - ☐ Life and Physical Science
  - ☐ Math and Quantitative Reasoning
  - ☐ A. World Cultures and Global Issues
  - ☐ B. U.S. Experience in its Diversity
  - ☐ C. Creative Expression
  - ☑ D. Individual and Society
  - ☐ E. Scientific World

☐ Other (please describe): _____

PLEASE ATTACH MATERIAL TO ILLUSTRATE AND EXPLAIN ALL CHANGES

DEPARTMENTAL ACTION

Action by Department and/or Departmental Committee, if required:

Date Approved: 01/09/2017 Signature, Committee Chairperson: [signature]

I have reviewed the attached material/proposal

Signature, Department Chairperson: [signature]

Revised/Dec.2015/AK

KINGSBOROUGH
COMMUNITY COLLEGE
★ DREAMS BEGIN HERE ★

TO: Fall 2017 Curriculum Committee

FROM: Department of

DATE: January 6, 2017

RE: New Course: CP 300 – Computers and Society

The Department of Mathematics & Computer Science is proposing introduction of a new course entitled Computers and Society – CP 300. We wish this course to be an option for all students in fulfillment of pathways bucket "D" (Individuals and Society).

Rationale for Change: Computer Literacy as a requisite for all individuals is a given in today's world. CP 300 will provide a considered treatment of this subject, along with important training in the logical approach to problem solution which is required for students to succeed in today's technologically-driven society.

KINGSBOROUGH COMMUNITY COLLEGE

1. Department, Course Number and Title

Department of Mathematics & Computer Science, CP 300: Computers and Society

2. Pathways

This course satisfies the Individual and Society requirement

3. Demonstration of Course Transferability

Lehman College Elective Credit
Brooklyn College CC 3.12: Computing: Nature, Power and Limits 3.0 Credits
College of Staten Island CSC 102: Computing for Today 4.0 Credits
New York City Technical College MST 1101: Introduction to Microcomputers 3.0 Credits
York College CS 172: Introduction to Computing 3.0 Credits
John Jay College of Criminal Justice Elective Credit
Queensborough C College CS 100: Introduction to Computers and Programming 3.0 Credits
Stony Brook University CSE 101: Introduction to Computers and Information Technologies 3.0 Credits

4. Description of Course

Introduction to computers and how they are used, as well as the impact they have had on society.

5. Number of Weekly Class Hours

Three hours per week

6. Number of Credits

Three credits

7. Prerequisites

Exit from all remediation (Math, reading, and writing)

8. Justification for Course and expected enrollment

- Computer systems have altered virtually every facet of our society. We shop, bank, and book our vacation and business travel arrangements online. Computers alter the sounds of the music we listen to. They enable virtually instantaneous communication with people at the far corners of the world.
- Computer connectivity has been an important component in accessing information resources throughout the world. Proficiency in internet connectivity and the ability to glean information from its sources will afford students an appreciation of the complexity and sophistication of computer systems and allow them to better understand and support the continued need for constant and immediate information access.
- Students should be knowledgeable in the basic functions of computer systems and components.
- It is in consonance with Kingsborough's commitment to serve a widely diverse student population and to enhance the learning and employment opportunities of the Brooklyn community.

- Successful completion of this course should assist the student in many careers since computer literacy is a necessary skill for many career activities.

120 students per Spring and Fall term, 60 students per Winter and Summer term

9. Course Withdrawals

none

10. Field Work, Internship, or Independent Study

None

11. Textbook.

Understanding Computers in a Changing Society, 6th edition, Deborah Morley, Cengage 2013, ISBN-13: 9781285767710

Illustrated Course Guide: Microsoft® Excel 2013 Basic, 6th Edition, Elizabeth Eisner Reding and Lynn Wermers, Cengage 2014, ISBN-13: 9781285093390

RAPTOR http://raptor.martincarlisle.com/ (free download)

12. Required Course for Majors

N/A

13. Specify If Course Is Open Only to Selected Students:

Open to all who have completed the prerequisite.

14. What Students Will Know and Be Able To Do Upon Completion of Course

Students will have the ability to :

- Apply their knowledge of the history of computing to computers in contemporary society.
- Identify issues associated with the protection of data storage and data transmission.
- Describe basic computer architecture; including the instruction fetch and execute cycle, and the different types of memory such as RAM and ROM.
- Demonstrate a proficiency in the use and maintenance of system files.
- Demonstrate a basic proficiency in algorithm development.
- Demonstrate a basic understanding of how to work with data using the features and tools in Excel
- Understand the complex ethical uses and abuses of computers.
- Students will understand the good and bad implications of Social Networking

15. Method of Teaching

Instruction will include lectures accompanied with hands-on demonstrations in the computer lab.

16. Assignments to Students

Assignments will be in the form of class projects and laboratory exercises.

17. Method of Evaluating Learning

Evaluation will be based on class tests, final examination, and computer lab assignments
Students will submit computer projects and exercises. The instructor will inform the students of the exact percentages allocated for quizzes and exams (45%), final exam (35%), participation including presentations (5%), projects and assignments (15%). The numbers in parentheses may be used as a possible guideline.

Examples of student projects area as follows:

Body Mass Index calculator

The BMI (Body Mass Index) is based on the relationship between a persons weight and height. BMI Categories are:

Underweight: <18.5
Normal weight: 18.5 to less than 25
Overweight: 25 to less than 30
Obesity: BMI of 30 or greater

Formulas needed: Meters=inches/39.36
Kilograms=pounds/2.2
BMI=kilograms/meters^2

Create a flowchart that accepts as input a height in inches and a weight in pounds. Your program is to calculate and display the persons BMI and BMI category.
Example: a 5'7" adult that weighs 145 pounds has a BMI of 23 which is normal weight
calculations:
1.7 meters = 67inches/39.36;
65.91 kilograms= 145 pounds/2.2
23 BMI = 65.91 kilograms/(1.7 meters)^2

Analyze the Advantage of Collecting Social Security Early or Delaying For a Higher Payout
Research the consequences in beginning to collect Social Security at age 62 versus collecting at 70. How long would one live to come out ahead. Develop an Excel spreadsheet that will determine results for different income brackets.

Real Estate Multiple Dwelling Analyzer
Develop a spreadsheet that will analyze the affordability of various multiple dwelling buildings. Include in your analysis current and projected costs (insurance maintenance, taxes, etc.), current and projected income (rents, laundry, vending machines, etc.), and various incentives (government, corporate and private loan sources, etc.). Compare a number of scenarios and decide on the best deal

18. Recommended Course Outline

Suggested order		Suggested

		time
History	Jacquard loom, Babbage (Difference Engine), Hollerith, Mark1, Hopper, ENIAC, computer generations …	14 hours + reviews and exams
Computer Architecture	Parts of the CPU, RAM vs ROM, sequential memory, input and output devices Operating Systems(command prompt vs GUI), File Structures, types of ports (parallel, serial, USB), Boole, (how machine is designed. Ex design half adder) Von Neumann (machine cycle), hard drive-read write heads, tracks, sectors, clusters ...	
Concepts	Computing Security (virus protection, security suites, backing up…) Emerging Technologies-future of computing (AI, natural language processing, wearable computers, nanotechnology) Networks-definitions only LAN, WAN binary, ascii, unicode	
Ethics	What make ethics related to computers different than that of other technologies (Invisibility, license infringement, social responsibility, theft of data, pictures, ideas...)	
Social Networking E-mail	Good and bad aspects. Such as: Disseminating information quickly. Ideas going viral. People not being able to "get away" from work	
Algorithm development Using Flowcharts	RAPTOR Thinking skills	14 hours + reviews and exams
EXCEL	Programming in EXCEL: including formulas, conditional formatting, macros and goal seeking	8 hours + reviews and exams

19. Bibliography:

1. Computing Now , Glen Coulthard, McGraw Hill, 2013, ISBN 13: 978-0073516851
2. Computer Concepts: Illustrated Introductory, 9th Edition , Dan Oja, June Parsons, Course Technology, 2013, ISBN-13: 978-1-133-62616-9
3. Discovering Computers & Microsoft Office 2013, Misty Vermaat ISBN-13: 1-305-40903-3 Cengage ,2016
4. Excel 2013 Brief by Shelley Gaskin and Alicia Vargas Pearson, 2014, ISBN13: 978-0-13-341442-4
5. Computer Concepts Getting Started by Shelley Gaskin and Jill Carney Pearson, 2014, ISBN13: 978-0-13-334991-7
6. New Perspectives on Computer Concepts 2016 by June Jamrich Parsons, Introductory, 18th Edition, Cengage 2016, ISBN-13: 9781305387751
7. Computing Essentials 2015 Intro by Timothy O'Leary and Linda O'Leary and Daniel O'Leary, 25th Edition, McGraw Hill, 2015, ISBN 13: 9781259605871
8. Our Digital World: Introduction to Computing by Jon Gordon,Karen Lankisch, Nancy Muir, Denise Seguin, and Anita Verno,3rd edition, Paradigm 2015, ISBN: 978-0-76386-310-4
9. Benchmark Series: Microsoft Excel 2013 Level 1 by Nita Rutkosky, Audrey Roggenkamp, and Ian Rutkosky , Paradigm 2015, ISBN: 978-0-76385-390-7
10. COMPUTER Concepts, by Denise Seguin, Paradigm 2015, ISBN: 978-0-76385-181-1

CUNY Common Core
Course Submission Form

Instructions: All courses submitted for the Common Core must be liberal arts courses. Courses submitted to the Course Review Committee may be submitted for only one area of the Common Core and must be 3 credits. Colleges may submit courses to the Course Review Committee before or after they receive college approval. STEM waiver courses do not need to be approved by the Course Review Committee. This form should not be used for STEM waiver courses.

College	**KINGSBOROUGH COMMUNITY COLLEGE**
Course Prefix and Number (e.g., ANTH 101, if number not assigned, enter XXX)	CP 3
Course Title	Computers and Society
Department(s)	Mathematics & Computer Science
Discipline	Computer Science
Credits	3
Contact Hours	3
Pre-requisites (if none, enter N/A)	Exit from all remediation (Math, reading, and writing)
Co-requisites (if none, enter N/A)	N/A
Catalogue Description	Introduction to computers and how they are used, as well as the impact they have had on society.
Special Features (e.g., linked courses)	
Sample Syllabus	Syllabus must be included with submission, 5 pages max recommended

Indicate the status of this course being nominated:

☐ current course ☐ revision of current course ☒ a new course being proposed

CUNY COMMON CORE Location

Please check below the area of the Common Core for which the course is being submitted. (Select only one.)

Required Core	Flexible Core
☐ English Composition	☐ World Cultures and Global Issues (A)
☐ Mathematical and Quantitative Reasoning	☐ US Experience in its Diversity (B)
☐ Life and Physical Sciences	☐ Creative Expression (C)
	☒ Individual and Society (D)
	☐ Scientific World (E)

Learning Outcomes **In the left column explain the course assignments and activities that will address the learning outcomes in the right column.**	
I. Required Core (12 credits)	
A. English Composition: Six credits A course in this area must meet all the learning outcomes in the right column. A student will:	
	• Read and listen critically and analytically, including identifying an argument's major assumptions and assertions and evaluating its supporting evidence.
	• Write clearly and coherently in varied, academic formats (such as formal essays, research papers, and reports) using standard English and appropriate technology to critique and improve one's own and others' texts.
	• Demonstrate research skills using appropriate technology, including gathering, evaluating, and synthesizing primary and secondary sources.
	• Support a thesis with well-reasoned arguments, and communicate persuasively across a variety of contexts, purposes, audiences, and media.
	• Formulate original ideas and relate them to the ideas of others by employing the conventions of ethical attribution and citation.
B. Mathematical and Quantitative Reasoning: Three credits A course in this area must meet all the learning outcomes in the right column. A student will:	
	• Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.
	• Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.
	• Represent quantitative problems expressed in natural language in a suitable mathematical format.
	• Effectively communicate quantitative analysis or solutions to mathematical problems in written or oral form.
	• Evaluate solutions to problems for reasonableness using a variety of means, including informed estimation.
	• Apply mathematical methods to problems in other fields of study.

C. Life and Physical Sciences: Three credits A course in this area must meet all the learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a life or physical science.
	• Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
	• Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
	• Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
	• Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.
II. Flexible Core (18 credits) Six three-credit liberal arts and sciences courses, with at least one course from each of the following five areas and no more than two courses in any discipline or interdisciplinary field.	
A. World Cultures and Global Issues	
A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.A) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring world cultures or global issues, including, but not limited to, anthropology, communications, cultural studies, economics, ethnic studies, foreign languages (building upon previous language acquisition), geography, history, political science, sociology, and world literature.
	• Analyze culture, globalization, or global cultural diversity, and describe an event or process from more than one point of view.
	• Analyze the historical development of one or more non-U.S. societies.
	• Analyze the significance of one or more major movements that have shaped the world's societies.
	• Analyze and discuss the role that race, ethnicity, class, gender, language, sexual orientation, belief, or other forms of social differentiation play in world cultures or societies.
	• Speak, read, and write a language other than English, and use that language to respond to cultures other than one's own.

B. U.S. Experience in its Diversity A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.B) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the U.S. experience in its diversity, including, but not limited to, anthropology, communications, cultural studies, economics, history, political science, psychology, public affairs, sociology, and U.S. literature.
	• Analyze and explain one or more major themes of U.S. history from more than one informed perspective.
	• Evaluate how indigenous populations, slavery, or immigration have shaped the development of the United States.
	• Explain and evaluate the role of the United States in international relations.
	• Identify and differentiate among the legislative, judicial, and executive branches of government and analyze their influence on the development of U.S. democracy.
	• Analyze and discuss common institutions or patterns of life in contemporary U.S. society and how they influence, or are influenced by, race, ethnicity, class, gender, sexual orientation, belief, or other forms of social differentiation.
C. Creative Expression	
A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.C) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring creative expression, including, but not limited to, arts, communications, creative writing, media arts, music, and theater.
	• Analyze how arts from diverse cultures of the past serve as a foundation for those of the present, and describe the significance of works of art in the societies that created them.
	• Articulate how meaning is created in the arts or communications and how experience is interpreted and conveyed.
	• Demonstrate knowledge of the skills involved in the creative process.
	• Use appropriate technologies to conduct research and to communicate.

D. Individual and Society A Flexible Core course must meet the three learning outcomes in the right column.	
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Writing assignment where students are asked to explore the impact computer systems have on society (race, class, gender, religion, belief) and balance the ability of the public to quickly and easily access information versus the privacy needs of an individual	• Gather, interpret, and assess information from a variety of sources and points of view.
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Students will write a paper critically analyzing the role of government in monitoring, rating, and allowing minors access to social media information.	• Evaluate evidence and arguments critically or analytically.
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Students will participate in class discussions using historical data and information to critically analyze claims advocating or opposing the need for computer literacy. Students will answer essay questions on both the midterm and final addressing this topic	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.D) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the relationship between the individual and society, including, but not limited to, anthropology, communications, cultural studies, history, journalism, philosophy, political science, psychology, public affairs, religion, and sociology.
	• Examine how an individual's place in society affects experiences, values, or choices.
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Students will write a paper to evaluate the underlying ethical considerations of wikileaks – "the	• Articulate and assess ethical views and their underlying premises.

right of the public to know" versus the need for secrecy in diplomatic environments. Does the same right apply to everybody or only a select few?	
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Students will engage in a debate concerning the ability of computers to quickly calculate and tabulate public information and the resultant consequences to privacy concerns. Students will be asked to write an essay on this topic on the midterm exam.	• Articulate ethical uses of data and other information resources to respond to problems and questions.
Learning objectives are assessed by individual/group presentations, exam questions, and or written assignments. Example: Students will give oral presentations on a a particular trend (youtube videos, ice bucket challenge, etc.) and using websites, newspapers, journals, and other insructor – approved sources, analyze the impact on societal movements and individual behavior	• Identify and engage with local, national, or global trends or ideologies, and analyze their impact on individual or collective decision-making.

E. Scientific World

A Flexible Core course must meet the three learning outcomes in the right column.

	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.

A course in this area (II.E) must meet at least three of the additional learning outcomes in the right column. A student will:

	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the scientific world, including, but not limited to: computer science, history of science, life and physical sciences, linguistics, logic, mathematics, psychology, statistics, and technology-related studies.
	• Demonstrate how tools of science, mathematics, technology, or formal analysis can be used to analyze problems and develop solutions.
	• Articulate and evaluate the empirical evidence supporting a scientific or formal theory.
	• Articulate and evaluate the impact of technologies and scientific discoveries on the contemporary world, such as issues of personal privacy, security, or ethical responsibilities.
	• Understand the scientific principles underlying matters of policy or public concern in which science plays a role.

Some other projects for students:

Body Mass Index calculator

The BMI (Body Mass Index) is based on the relationship between a persons weight and height. BMI Categories are:

Underweight: <18.5
Normal weight: 18.5 to less than 25
Overweight: 25 to less than 30
Obesity: BMI of 30 or greater

Formulas needed: Meters=inches/39.36

Kilograms=pounds/2.2

BMI=kilograms/meters^2

Create a flowchart that accepts as input a height in inches and a weight in pounds. Your program is to calculate and display the persons BMI and BMI category.

Example: a 5'7" adult that weighs 145 pounds has a BMI of 23 which is normal weight

calculations:

1.7 meters = 67inches/39.36;

65.91 kilograms= 145 pounds/2.2
23 BMI = 65.91 kilograms/(1.7 meters)^2

Analyze the Advantage of Collecting Social Security Early or Delaying For a Higher Payout

Research the consequences in beginning to collect Social Security at age 62 versus collecting at 70. How long would one live to come out ahead. Develop an Excel spreadsheet that will determine results for different income brackets.

Real Estate Multiple Dwelling Analyzer

Develop a spreadsheet that will analyze the affordability of various multiple dwelling buildings. Include in your analysis current and projected costs (insurance maintenance, taxes, etc.), current and projected income (rents, laundry, vending machines, etc.), and various incentives (government, corporate and private loan sources, etc.).

Compare a number of scenarios and decide on the best deal