## QUEENSBOROUGH COMMUNITY COLLEGE

 CITY UNIVERSITY OF NEW YORK
## COMMITTEE ON CURRICULUM

To: Peter Bales, Academic Senate Steering Committee<br>From: Lorena B. Ellis, Chairperson, Committee on Curriculum<br>Date: April 28, 2016<br>Subject: April Monthly Report for the May 10, 2016 Senate<br>CC: College Archives (CWilliams@qcc.cuny.edu)

The Committee on Curriculum has voted to send the following recommendations to the Academic Senate:

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3 0 \text { Course revisions (Item 1)}
1 0 \text { Pre-requisite revisions (Item 1)}
    2 New courses (Item 2)
1 0 \text { Course deletions (Item 3)}
2 Program revisions (Item 4)
1 \text { New program (Item 5)}
1 \text { Discontinuation of a Concentration in a Program (Item 6)}
1 \text { General Education Assessment Task Force Report to the Academic Senate (Item 7)}
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## 1. Course Revisions

## ENGINEERING TECHNOLOGY

Departmental approval: March 16, 2016

## FROM:

(Requisite and hours revision)
ET575 Introduction to C++ Programming Design and Implementation
Pre-requisites: None
Co-requisites: None
3 class hourst 3 credits

## Course Description:

This foundation course provides a general understanding of the use and development of computer software applications in fields such as science, mathematics, and business using a high level computer language. The course will concentrate on assessing the practical requirements of a software package and developing applications in $\mathrm{C}++$, which is a high level computer language that teaches the basic skills necessary for implementing it in a variety of real world applications. Topics include the analysis and use of concepts such as: primitive data types and their operators, basic I/O, control statements, decision making, looping, subprograms, arrays, strings and computer ethics. Each student will have a computer platform at his/her disposal from which he/she will design, develop, implement and test programs, while evaluating the interactions between a user and the computer.

TO:
ET575 Introduction to C++ Programming Design and Implementation
Pre-requisites: Prerequisite of MA-321 or co-requisite of MA-114 or MA119 or MA-440
Co-requisites: Prerequisite of MA-321 or co-requisite of MA-114 or MA119 or MA-440
2 class hours, 2 lab hours, 3 credits

## Course Description:

This foundation course provides a general understanding of the use and development of computer software
applications in fields such as science, mathematics, and business using a high level computer language. The course will concentrate on assessing the practical requirements of a software package and developing applications in $\mathrm{C}++$, which is a high level computer language that teaches the basic skills necessary for implementing it in a variety of real world applications. Topics include the analysis and use of concepts such as: primitive data types and their operators, basic I/O, control statements, decision making, looping, subprograms, arrays, strings and computer ethics. Each student will have a computer platform at his/her disposal from which he/she will design, develop, implement and test programs, while evaluating the interactions between a user and the computer.

## Rationale:

Course contact hours are increased to be in line with to introductory programming classes at other colleges such as Queens College and City College. Both these colleges stipulate 3 credits with 2 hours lecture and 2 hours lab for their introductory programming classes. It will be difficult for our students to get transfer credit for this course if the course has fewer contact hours.

The lab outline is provided in the syllabus form.
A math requirement has been added because we have found that students who do not have sufficient math skills do poorly in this class. Presently the course has no requisites.

## BUSINESS DEPARTMENT

## FROM:

(Requisite revision)
BU-203 Principles of Statistics
4 class hours 3 credits
Pre-requisites: MA-128 or MA-260 or MA-321 or MA-440 (Students who have taken MA-240, which is no longer offered, have satisfied the mathematics prerequisite for BU-203)

## Course Description:

An introduction to statistical methods and statistical reasoning; nature and scope of statistical inquiries; collection and presentation of data; descriptive methods with particular reference to frequency distributions, correlation, index numbers and time series analysis; elements of probability, sampling methods, sampling error and principles of estimation.

TO:
Departmental approval date April 6, 2016.
BU-203 Principles of Statistics
4 class hours 3 credits
Pre-requisites: MA-114 or MA-119 or MA-321 (Students who have taken MA-240, which is no longer offered, have satisfied the mathematics prerequisitefor BU-203.

## Course Description:

An introduction to statistical methods and statistical reasoning; nature and scope of statistical inquiries; collection and presentation of data; descriptive methods with particular reference to frequency distributions, correlation, index numbers and time series analysis; elements of probability, sampling methods, sampling error and principles of estimation.

## Rationale:

Faculty that teach BU-203 believe that MA-114 or MA-119 or MA-321 provide a sufficient basis for taking BU-203. In addition, students close to graduation often need MA-128, MA-260 or MA-440 and BU-203 in order to graduate and by requiring taking the Mathematics course and BU-203 in sequence instead of concurrently often delays graduation.

CIS-251 Analysis and Design of System Projects
2 class hours, 2 laboratory hours, 3 credits
Pre-requisites: CIS-152, CIS-208 and MA-10 or satisfactory score on the Mathematics Placement Test.

## Course Description:

Students use all previously learned data processing concepts and techniques in this laboratory course to design and implement a complete data processing application package for common business needs, such as payroll, inventory management, accounts receivable files, and management information systems.
Development of the application will be accomplished concurrently with the study of the phases of Systems Analysis and Designs.

## TO:

Departmental approval date November 4, 2015
CIS-251 Analysis and Design of System Projects
2 class hours, 2 laboratory hours, 3 credits
Pre-requisites: CIS-152, CIS-153, CIS-208 and MA-10 or satisfactory score on the Mathematics Placement Test.

## Course Description:

Students use all previously learned data processing concepts and techniques in this laboratory course to design and implement a complete data processing application package for common business needs, such as payroll, inventory management, accounts receivable files, and management information systems. Development of the application will be accomplished concurrently with the study of the phases of Systems Analysis and Designs.

## Rationale:

When the CIS (Computer Information Systems) Program revisions were submitted to the Committee on Curriculum last year, one of the pre-requisites - CIS-153 Microcomputer Operating Systems and Utility Software - was inadvertently omitted.

## FOREIGN LANGUAGES AND LITERATURES Revised courses

Departmental approval date April 16, 2016: LX111 (Requisite and course description revision)

## FROM:

LA-111 Elementary Arabic I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is designed for students who have no previous background in Arabic. It focuses on the four essential language skills: listening, speaking, reading and writing. The alphabet, sound system, and basic greetings and expressions will be covered this semester. The main focus is on Modern Standard Arabic (MSA), although students are also trained to speak using spoken Arabic. Weekly attendance in the tanguage laboratory is required.

## TO:

LA-111 Elementary Arabic I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This is an introduction to Arabic language and culture for students who wish to develop basic listening, speaking, reading and writing skills in Arabic, and explore aspects of culture in Arabic-speaking countries. The alphabet, sound system and Arabic orthography will be covered, as well as elementary greetings and expressions. Students learn Modern Standard Arabic (MSA) , with some exposure to colloquial Arabic forms. Weekly individual practice online or in the language laboratory is required.

## Rationale:

The course description for LA-111 needs to be updated in order to: 1) indicate that the culture(s) of Arabicspeaking countries are introduced alongside the teaching of Arabic language; 2) "lab" exercises emphasizing listening and speaking activities can now be completed online and/or in the language laboratory; 3) the Department of Foreign Languages has adopted a new formulation of the prerequisite; 4) the expression " lecture hours" should be replaced by "class hours," in use for all other languages.

## FROM:

LC-111 Elementary Chinese I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

An introduction to Mandarin Chinese. Practice in the four language skills-listening, speaking, reading, and writing. Emphasis on pronunciation and conversation. Both the pinyin romanization system and characters will be introduced. This is the first semester of a two-semester course of beginning Chinese. Weekly attendance in the language laboratory is required.

## TO:

LC-111 Elementary Chinese I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is an introduction to Chinese language and culture designed for students who have not learned Mandarin at home. Students will develop basic listening, speaking, reading and writing skills in Mandarin, and explore aspects of culture in Chinese-speaking countries. Both the pinyin Romanization system and characters will be introduced. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LC-111 course description for Chinese language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) this course is not for heritage speakers of Mandarin; b) the four language skills are taught in the context of, and alongside, culture; c) "lab" exercises emphasizing listening comprehension and speaking can now be completed in the language laboratory or online. It was decided to indicate that placement by Department of Foreign Languages is a prerequisite for LC-111.

## FROM:

LF-111 Elementary French I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

Elements of French grammar; learning to understand and speak the language. Intensive oral practice, as well as practice in writing simple compositions. Weekly attendance in the language laboratory is required.

## TO:

LF-111 Elementary French I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is an introduction to French language and culture designed for students who have no previous background in French. Students will develop basic listening, speaking, reading and writing skills, and explore aspects of French and Francophone cultures. Weekly listening, speaking and viewing activities
online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LF-111 course description for French language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) courses at the 111level are for beginners only; b) the four language skills are taught in the context of, and alongside, culture;
c) "lab" exercises emphasizing listening comprehension and speaking can now be completed in the language laboratory or online. It was also decided to indicate that placement by the Department of Foreign languages is a prerequisite to LF-111.

## FROM:

LG-111 Elementary German I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

Students learn the elements of German grammar and learn to understand and speak the language. Intensive oral practice as well as an introduction to writing simple compositions. Weekly attendance in the tanguage laboratory is required.

## TO:

LG-111 Elementary German I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is an introduction to German language and culture designed for students who have no previous background in German. Students will develop basic listening, speaking, reading and writing skills, and explore aspects of culture in German-speaking countries. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LG-111 course description for German language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) courses at the 111level are for beginners only; b) the four language skills are taught in the context of, and alongside, culture;
c) "lab" exercises emphasizing listening comprehension and speaking can now be completed in the language laboratory or online. It was also decided to indicate that placement by the Department of Foreign Languages is a prerequisite to LG-111.

## FROM:

LH-111 Elementary Hebrew I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

Reading of elementary Hebrew prose, understanding the spoken language; oral expression and simple written composition. Weekly attendance in the language laboratory is required.

## TO:

LH-111 Elementary Hebrew I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is an introduction to Hebrew language and culture. Students will develop basic listening, speaking, reading and writing skills, and explore aspects of Israel and Jewish culture. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LH-111 course description for Hebrew language was found to be outdated, and therefore the Department of Foreign Languages has decided to specify the following the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online. It was decided to indicate that placement by the Department of Foreign Languages is a prerequisite to LH-111.

## FROM:

LI-111 Elementary Italian I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

Introduction to reading, writing, and speaking the language; study of the grammar; oral practice. Weekly attendance in the Language Laboratory is required.

## TO:

LI-111 Elementary Italian I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is an introduction to Italian language and culture designed for students who have no previous background in standard Italian. Students will develop basic listening, speaking, reading and writing skills, and explore aspects of Italian culture. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LI-111 course description for Italian language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) courses at the 111level are for beginners only; b) the four language skills are taught in the context of, and alongside, culture; c) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online. It was also decided to indicate that placement by the Department of Foreign Languages is a prerequisite to LI-111.

## FROM:

LS-111 Elementary Spanish I
4 class hours, 4 credits
Pre-requisites: None

## Course Description:

Elements of Spanish grammar and orthography with emphasis on everyday practical vocabulary. Intensive aurat-oral practice. Weekly attendance in the Language Laboratory is required.

## TO:

LS-111 Elementary Spanish I
4 class hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages and Literatures.

## Course Description:

This course is an introduction to Spanish language and culture designed for students who have no previous background in Spanish. Students will develop basic listening, speaking, reading and writing skills, and explore aspects of Spanish and Spanish-American cultures. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LS 214 course description for Spanish language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) courses at the 111-
level are for beginners only; b) the four language skills are taught in the context of, and alongside, culture; c) "lab" exercises emphasizing listening comprehension and speaking can now be completed in the language laboratory or online. It was also decided to indicate that placement by the Department of Foreign Languages is a prerequisite to LS-111.

Departmental approval date April 16, 2016: LX112 (Requisite and course description revision)

## FROM:

LA-112 Elementary Arabic II
4 lecture hours, 4 credits
Pre-requisites: Placement by the Department of Foreign Languages

## Course Description:

This is the second semester course for elementary Modern Standard Arabic. It focuses on the four essential language skills: listening, speaking, reading and writing. Students will continue studying the tanguage through a communicative approach. They will also develop basic conversational and grammatical skills, and they will acquire additional insight into the cultural and social contexts of the Arabic-speaking World. Consistent emphasis is placed on authentic materials that are derived from the living cultural context. Weekly attendance in the language laboratory is required.

## TO:

LA-112 Elementary Arabic II
4 class hours, 4 credits
Pre-requisites: LA-111 with a grade of "C" or higher, or placement by the Department of Foreign
Languages and Literatures

## Course Description:

This course is the second half of a first-year course in Modern Standard Arabic. Emphasis is on the progressive development of listening, speaking, reading and writing skills, and learning basic grammatical constructs. Students continue to learn about cultural and social contexts of the Arabic-speaking world. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

The course description for LA-112 needs to be updated in order to: 1) indicate that the culture(s) of Arabicspeaking countries are introduced alongside the teaching of Arabic language; 2) "lab" exercises emphasizing listening and speaking activities can now be completed online and/or in the language laboratory; 3) the Department now uses a different formulation for the prerequisite to LA-112; 4) the expression "lecture hours" should be replaced by "class hours," the term in use for all other languages.

## FROM:

LC-112 Elementary Chinese II
4 class hours, 4 credits
Pre-requisites: LC-111 (or the equivalent), with a grade of $C$ or better.

## Course Description:

Gontinuation of LG-111. Further practice in the four language skills to help students develop-simple, practical conversational skills in Mandarin. Weekly attendance in the language laboratory is required.

## TO:

LC-112 Elementary Chinese II

## 4 class hours, 4 credits

Pre-requisites: LC-111 with a grade of "C" or higher, or placement by the Department of Foreign Languages
and Literatures

## Course Description:

This course is the second half of a first-year course in Mandarin. Emphasis is on the progressive
development of listening, speaking, reading and writing skills. Students continue to explore the culture of Chinese-speaking countries. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LC-112 course description for Chinese language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LC-112.

## FROM:

LF-112 Elementary French II
4 class hours, 4 credits
Pre-requisites: LF-111 (or the equivalent), with a grade of $C$ or better.

## Course Description:

Continuation of LF-111. Weekly attendance in the language laboratory is required.

## TO:

LF-112 Elementary French II
4 class hours, 4 credits
Pre-requisites: LF-111 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is the second half of a first-year course in French. Emphasis is on the progressive development of listening, speaking, reading and writing skills. Students continue to explore the culture of France and Francophone countries. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LF-112 course description for French language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LF-112.

## FROM:

LG-112 Elementary German II
4 class hours, 4 credits
Pre-requisites: LC-111 (or the equivalent), with a grade of $C$ or better.

## Course Description:

The study of basic German grammar is completed. Students learn to read easy German prose and express their ideas. Weekly attendance in the language laboratory is required.

TO:
LG-112 Elementary German II
4 class hours, 4 credits
Pre-requisites: LG-111 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is the second half of a first-year course in German. Emphasis is on the progressive development of listening, speaking, reading and writing skills. Students continue to explore the culture of German-speaking countries. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LG-112 course description for German language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LG-112.

## FROM:

LH-112 Elementary Hebrew II
4 class hours, 4 credits
Pre-requisites: $\mathrm{LH}-111$ (or the equivalent), with a grade of $G$ or better.

## Course Description:

Gontinuation of Hebrew 1. Weekly attendance in the language laboratory is required.

## TO:

LH-112 Elementary Hebrew II
4 class hours, 4 credits
Pre-requisites: $\underline{\mathrm{LH}-111 \text { with a grade of "C" or higher, or placement by the Department of Foreign Languages }}$ and Literatures

## Course Description:

This course is the second half of a first-year course in Hebrew. Emphasis is on the progressive development of listening, speaking, reading and writing skills. Students continue to explore Israel and Jewish culture. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LH-112 course descriptions for Hebrew language were found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LH-112.

## FROM:

LI-112 Elementary Italian II
4 class hours, 4 credits
Pre-requisites: L1-111 (or the equivalent), with a grade of $C$ or better.

## Course Description:

Continuation of Ll-111. Weekly attendance in the Language Laboratory is required.

## TO:

LI-112 Elementary Italian II
4 class hours, 4 credits
Pre-requisites: 니-111 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is the second half of a first-year course in Italian. Emphasis is on the progressive development of listening, speaking, reading and writing skills. Students continue to explore Italian culture. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LI-112 course description for Italian language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language
skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LI-112

## FROM:

LS-112 Elementary Spanish II
4 class hours, 4 credits
Pre-requisites: LS-111 (or the equivalent), with a grade of $C$ or better.

## Course Description:

Complete study of Spanish grammar with emphasis on everyday practical vocabulary. Weekly attendance in the Language Laboratory is required.

TO:
LS-112 Elementary Spanish II
4 class hours, 4 credits
Pre-requisites: $\underline{L S}-111$ with a grade of " C " or higher, or placement by the Department of Foreign Languages and Literatures

## Course Description:

This course is the second half of a first-year course in Spanish. Emphasis is on the progressive development of listening, speaking, reading and writing skills. Students continue to explore Spanish and Spanish-American cultures. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LS-112 course description for Spanish language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises emphasizing listening comprehension and speaking can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LS-112.

Departmental approval date April 20, 2016: LX213 (Requisite and course description revision)

## FROM:

LA-213 Intermediate Arabic I
Pre-requisites: Placement by the Department of Foreign Languages
3 lecture hours, 3 credits

## Course Description:

Intermediate Arabic I is a third-semester course, continuing to develop listening, speaking, reading and writing in Modern Standard Arabic (MSA), and fostering acquaintance with colloquial variants of Arabic. The course builds vocabulary as well as knowledge of the Arabic grammar system and conventional Arabic usage within the context of assignments designed to familiarize students with everyday activities in the Arabic-speaking world. Weekly attendance in the language laboratory is required.

## TO:

LA-213 Intermediate Arabic I
Pre-requisites: LA-112 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

Intermediate Arabic I continues to develop listening, speaking, reading and writing in Modern Standard Arabic (MSA), and to foster acquaintance with colloquial variants of Arabic. New vocabulary, idiomatic phrases and grammatical structures will be introduced within the context of assignments that familiarize students with everyday activities in the Arabic-speaking world. Weekly individual listening, speaking and
viewing activities in the language laboratory or online are part of the course.

## Rationale:

The course description for LA-213 needs to be updated in order to: 1) indicate that the culture(s) of Arabicspeaking countries are introduced alongside the teaching of Arabic language; 2) "lab" exercises emphasizing listening and speaking activities can now be completed online and/or in the language laboratory; 3) the Department of Foreign Languages has adopted a new formulation for the prerequisite; 4) the expressions "lecture hours" should be replaced by "class hours," in use for all other languages.

## FROM:

LC-213 Intermediate Chinese I
Pre-requisites: LC-112 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

This course will continue to develop students' communicative competence through the study of grammar, acquisition of new vocabulary, and practice of the four language skills - listening, speaking, reading, and writing. Content-appropriate cultural information will be presented to promote the students' understanding of the Chinese-speaking world. This is the first semester of a two-semester course of intermediate Chinese.

## TO:

LC-213 Intermediate Chinese I
Pre-requisites: $\underline{\text { LC-112 }}$ with a grade of " C " or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course will continue to develop students' communicative competence through the study of grammar, acquisition of new vocabulary, and practice of the four language skills - listening, speaking, reading and writing. Cultural material will be introduced at an appropriate level in order to foster students' understanding and appreciation of the culture of Chinese-speaking countries. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LC 213 course description for Chinese language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LF-213 Intermediate French I
Pre-requisites: LF-112 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Review of French grammar; selected readings in French literature studied and analyzed.

## TO:

LF-213 Intermediate French I
Pre-requisites: LF-112 with a grade of " C " or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course is for students who wish to strengthen and expand their vocabulary and knowledge of grammar, and improve their ability to converse on everyday subjects. Students will be exposed to
contemporary social and cultural issues of the French-speaking world through film and multimedia. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LF 213 course description for French language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, French and Francophone culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LG-213 Intermediate German I
Pre-requisites: LG-112 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Intensive review of German grammar through practice of the phonological and grammatical structure of German orally and in writing. Selected readings in contemporary German prose.

## TO:

LG-213 Intermediate German I
Pre-requisites: LG-112 with a grade of "C" or higher, or placement by the Department of Foreign
Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course will continue to develop students' communicative competence through the study of grammar, acquisition of new vocabulary, and practice of the four language skills - listening, speaking, reading and writing. Cultural material will be introduced at an appropriate level in order to foster students' understanding and appreciation of the culture of German-speaking countries. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LG-213 course description for German language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LH-213 Intermediate Hebrew I
Pre-requisites: LH-112 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

General review of grammar covered in Hebrew I (LH-111) and Hebrew II (LH-112); readings, short stories, reports, and discussion in the language.

## TO:

LH-213 Intermediate Hebrew I
Pre-requisites: LH-112 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course will continue to develop students' communicative competence through the study of grammar, acquisition of new vocabulary, and practice of the four language skills - listening, speaking, reading and writing. Cultural material will be introduced in order to broaden students' understanding and appreciation of

Israel and Jewish culture. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LH 213 course descriptions for Hebrew language were found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite to LH-213.

## FROM:

LI-213 Intermediate Italian I
Pre-requisites: $+1-112$ or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

General review of grammar; readings and discussion in Italian.

## TO:

LI-213 Intermediate Italian I
Pre-requisites: 니-112 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course provides an opportunity to acquire increased fluency in spoken Italian with an emphasis on natural, colloquial usage. New vocabulary, idiomatic phrases and grammatical structures will be introduced in a cultural context. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LI-213 course description for Italian language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LS-213 Intermediate Spanish I
Pre-requisites: $L-112$ or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Review of Spanish grammar with intensive aural-oral practice, through the use of videotapes and selected readings.

## TO:

LS-213 Intermediate Spanish I
Pre-requisites: LS-112 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course will continue to develop students' communicative competence through the study of grammar, acquisition of new vocabulary, and practice of the four language skills - listening, speaking, reading and writing. Cultural material will be introduced in order to broaden students' understanding and appreciation of Spanish-speaking cultures. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LS-213 course description for Spanish language was found to be outdated, therefore the Department of Foreign Languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite

Departmental approval date April 20, 2016: LX214 (Pre-requisite and course description revision)

## FROM:

LC-214 Intermediate Chinese II
Pre-requisites: LC213 or the equivalent, with a grade of $C$ or better or permission of the Department
3 class hours, 3 credits

## Course Description:

The focus of this course is to continue the improvement of oral communication skills, along with reading, writing and grammar. It is designed to help students expand their vocabulary, and to study more complex grammatical structures. Components of Chinese culture will be integrated through readings, discussions and realia.

TO:
LC-214 Intermediate Chinese II
Pre-requisites: $\underline{L C-213}$ with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

The focus of this course is to continue the improvement of oral communication skills, along with reading, writing and grammar. It is designed to help students expand their vocabulary, and to study more complex grammatical structures. Components of Chinese culture will be integrated through readings, discussions and realia. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LC-214 course description for Chinese language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite

## FROM:

LF-214 Intermediate French II
Pre-requisites: LF213 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Intensive training in literary analysis through study of French works. Emphasis on French composition and conversation.

## TO:

LF-214 Intermediate French II
Pre-requisites: LF-213 with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course emphasizes authentic texts, more complex grammar, and practice in oral and written expression. Social and historical topics relating to France and the Francophone world presented through literary texts, film and multimedia will form the basis for discussion and writing assignments. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course. This course is appropriate for heritage speakers.

## Rationale:

Upon review, the LF-214 course description for French language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LG-214 Intermediate German II
Pre-requisites: LG213 or the equivalent, with a grade of $G$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Intensive training in literary analysis through study of German works. Emphasis on German composition and conversation.

## TO:

LG-214 Intermediate German II
Pre-requisites: LG-213 with a grade of "C" or higher, or placement by the Department of Foreign
Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course emphasizes authentic texts, more complex grammar, and practice in oral and written expression. Social and historical topics of German-speaking countries presented through literary texts, film and multimedia will form the basis for discussion and writing assignments. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LG-214 course description for German language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LH-214 Intermediate Hebrew II
Pre-requisites: LH 213 or the equivalent, with a grade of $G$ or better or permission of the Department
3 class hours, 3 credits

## Course Description:

Gompositions, readings, and discussion of the material covered in class. Short stories, poems, scenes from plays, reports, and discussions in the language.

## TO:

LH-214 Intermediate Hebrew II
Pre-requisites: $\underline{L H-213}$ with a grade of "C" or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course emphasizes authentic texts, more complex grammar, and practice in oral and written expression. Social and historical topics of Israel and Jewish culture presented through literary texts, film and multimedia will form the basis for discussion and writing assignments. Weekly listening, speaking, and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LH 214 course description for Hebrew language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LI-214 Intermediate Italian II
Pre-requisites: H 213 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Short stories, poems, scenes from plays, reports, and discussion in Italian.

## TO:

LI-214 Intermediate Italian II
Pre-requisites: LI-213 with a grade of " C " or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course emphasizes reading and comprehension of authentic texts, including newspaper or magazine articles, and excerpts from contemporary literary works. More complex grammar and vocabulary are introduced through discussion of selected social and cultural issues presented in the reading material. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LI-214 course description for Italian language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## FROM:

LS-214 Intermediate Spanish II
Pre-requisites: LS213 or the equivalent, with a grade of $C$ or better or permission of the Department 3 class hours, 3 credits

## Course Description:

Emphasis on written composition. Selections from Spanish and Spanish-American literature read and analyzed.

## TO:

LS-214 Intermediate Spanish II
Pre-requisites: $\underline{\text { LS-213 }}$ with a grade of " C " or higher, or placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course emphasizes authentic texts, more complex grammar, and practice in oral and written expression. Social and historical topics of Spanish-speaking countries presented through literary texts, film and multimedia will form the basis for discussion and writing assignments. Weekly listening, speaking and viewing activities online or in the language laboratory are part of the course.

## Rationale:

Upon review, the LS 214 course description for Spanish language was found to be outdated, therefore the Department of Foreign languages has decided to specify the following information: a) the four language skills are taught in the context of, and alongside, culture; b) "lab" exercises including listening comprehension, speaking and/or viewing film and multimedia can now be completed in the language laboratory or online; c) the Department now uses a different formulation for the prerequisite.

## HISTORY DEPARTMENT (These items might have to be put on hold?)

Prefix + requisite revisions: Com.Curr.2-25-16; Senate 3-8-2016; Chancel. Rep. April 2016)
HIST 110 Introduction to Ancient Civilization
HIST 111 Introduction to Medieval and Early Modern Western Civilization
HIST 112 Introduction to Modern Western Civilization
HIST 127 Growth of American Civilization I: Colonial Period Through Reconstruction
HIST 128 Growth of American Civilization II: Reconstruction to the Present
(Pre-fix and requisite changes)

| FROM: | TO: |
| :---: | :---: |
| H1 123 Recent American Civilization Prorequisite: BE-122 (or BE-226) and BE-112 (or BE205), or satisfactory score on the CUNY/ACT Assessment Test 3 hours; 3 credits | HIST 123 Recent American Civilization Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits |
| H1 132 World History Since 1500 <br> Prorequisite: BE-122 (or BE-226) and BE-112 (or BE205), or satisfactory score on the CUNY/ACT Assessment Test <br> 3 hours; 3 credits | HIST 132 World History Since 1500 Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits |

HI 133 Introduction to Modern East Asian Civilization
Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT Assessment Test 3 hours; 3 credits

## HI 135 History of New York State

Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT Assessment Test
3 hours; 3 credits

HI 136 African-American History
Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT Assessment Test 3 hours; 3 credits

HI 140 Latin American History I: Ancient Times to Independence (1500 b.c. to 1825)
Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT Assessment Test
3 hours; 3 credits

HI 141 Latin American Story II: Independence to the Present

Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT Assessment Test
3 hours; 3 credits

## HI 154 History and Health Care

Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT
Assessment Test
3 hours; 3 credits

HI 178, 179 Special Topics in History
Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/ACT
Assessment Test
3 hours; 3 credits

HI 193 Introduction to the History of Borderlands
Prerequisite: BE-122 (or BE-226) and BE-112 (or BE-205), or satisfactory score on the CUNY/AGT Assessment Test
3 hours; 3 credits

HIST 133 Introduction to Modern East Asian Civilization
Prerequisite or Co-requisite: ENGLISH 101
3 hours; 3 credits

HIST 135 History of New York State Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST 136 African-American History Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST 140 Latin American History I: Ancient Times to Independence (1500 b.c. to 1825) Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST 141 Latin American History II: Independence to the Present Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST154 History and Health Care Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST 178, 179 Special Topics in History Prerequisite or Co-requisite: ENGLISH 101 3 hours; 3 credits

HIST 193 Introduction to the History of Borderlands
Prerequisite or Co-requisite: ENGLISH 101
3 hours; 3 credits

These new courses were approved by the QCC Senate in Sp-2016

| FROM | TO |
| :---: | :---: |
| HIST-186: Introduction to Legal History I: The Ancient World through the Early Modern Period Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO <br> HIST-186: Introduction to Legal History I: The Ancient World through the Early Modern Period Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-187: Introduction to Legal History II: The Enlightenment through the Present Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO <br> HIST-187: Introduction to Legal History II: The Enlightenment through the Present <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-281: History of Nationalism and the Politics of Identity Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO <br> HIST-281: History of Nationalism and the Politics of Identity <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-292: History of Fascism, Nazism, and Communism. <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO <br> HIST-292: History of Fascism, Nazism, and Communism. <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-292: History of Fascism, Nazism, and Communism. <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/AGT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits. | TO <br> HIST-292: History of Fascism, Nazism, and Communism. <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-252 History of Medieval and Early Modern Spain <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits <br> Course Description: | TO <br> HIST-252 History of Medieval and Early Modern Spain <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-205 History of the First World War: 19141918 <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT | TO: <br> HIST-205 History of the First World War: 1914- <br> 1918 |


| Assessment Test. Co-requisite: English 101 3 class hours; 3 credits | Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| :---: | :---: |
| HIST-242 History of Modern Japan: 1868-1989 Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credit | TO: <br> HIST-242 History of Modern Japan: 1868-1989 Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST-227 British History since 1688 <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT <br> Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO: <br> HIST-227 British History since 1688 <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST 211 History of Early Christianity: (See deletions below) <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO: <br> HIST 211 History of Early Christianity Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST 236 History of Germany <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO: <br> HIST 236 History of Germany <br> Pre-requisites: Prerequisite or Co-requisite: <br> English 101 <br> 3 class hours; 3 credits |
| HIST 208 History of the Romans and Their <br> Empire <br> Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO: <br> HIST 208 History of the Romans and Their Empire <br> Pre-requisites: Prerequisite or Co-requisite: English 101 <br> 3 class hours; 3 credits |
| HIST 238 History of Russia Pre-requisites: BE-122 (or 226) and BE-112 (or 205), or satisfactory score on the CUNY/ACT Assessment Test. <br> Co-requisite: English 101 <br> 3 class hours; 3 credits | TO: <br> HIST 238 History of Russia <br> Pre-requisites: Prerequisite or Co-requisite: <br> English 101 <br> 3 class hours; 3 credits |

## 2. New Courses

## FOREIGN LANGUAGES AND LITERATURES

Departmental approval date April 20, 2016

LC-322 Introduction to Chinese Linguistics
Pre-requisite: Placement by the Department of Foreign Languages and Literatures
3 class hours, 3 credits

## Course Description:

This course introduces the basic linguistic structure, history and variation of Mandarin Chinese to undergraduate students who already have prior knowledge of Chinese. Linguistic topics include: phonetics, phonology, morphology and etymology, as well as syntax, semantics and pragmatics of modern Chinese. Individual and group projects will complement lectures, readings and discussions.

## Rationale:

Queensborough Community College has a growing population of Chinese students from China, Taiwan, Malaysia and other regions of Asia. This course serves advanced-level Chinese students who would like to continue to broaden their knowledge of Chinese language and linguistics. For students who take Chinese to fulfill their language requirement, this course can serve as either the first or second course of the required language classes. Students can also take this course as an elective.

LF-217 French for Business and the Professions
Pre-requisite: A grade of "C" or higher in LF 213, or placement by the Department of Foreign
Languages and Literatures
3 class hours, 3 credits

## Course Description:

A course with emphasis on learning how business is conducted in French, for students interested in working in any business or professional capacity. Students will create conversations in formal (business) settings, acquire business vocabulary and related grammar, write a CV and cover letter, and create a marketing campaign. Fundamental work-related cultural differences of English-and French-speaking countries will be discussed. Students will also complete an oral presentation on a business, technology or economic issue in a French-speaking country. Weekly individual listening or viewing assignments online or in the language laboratory are part of the course.

## Rationale:

This course is intended to serve heritage and non-heritage speakers of French who would like to prepare to use French in a business or professional setting. Grammar, vocabulary and pragmatics will be treated at the intermediate level, and will focus on practical situations calling for an oral or written response, for example: a job interview, or writing a business letter. Students will be assigned to view videos and research topics relating to cultural and economic topics in several French-speaking countries.

Starting in Fall 2016, heritage/native speakers of French will be placed into either LF 213 or LF 214/217, depending on their level. Students who take LF 213 will be able to choose between LF 214 and LF 217 for the second half of their language requirement. Students who start in LF 214 will take LF 217 for the second half of their language requirement, and students who take LF 217 first, may take LF 214 second.

LF 214 and LF 217 will be offered in alternating semesters. The vocabulary and grammar material presented in the two courses will not be the same.

## 3. Course deletions

## DEPARTMENT OF HISTORY

Course deletions: Departmental approval 3-30-2016
HI 120 American Civilization 1 (Duplication HI 127)
3 credits, 3 hours
HI 211 American Civilization 1 (Duplication HI 127)
3 credits, 3 hours

HI 121 American Civilization 2 (Duplication HI 128)
3 credits, 3 hours
HI 221 American Civilization 2 (Duplication HI 128)
3 credits, 3 hours
HI 123 American Civilization 3 (Duplication HI 129)
3 credits, 3 hours
HI 213 American Civilization 3 (Duplication HI 129) 3 credits, 3 hours

HI 220 History and Health Care (Duplication HI 154)
3 credits, 3 hours
HI 210 A History of Modern Israel (Duplication HI 190) 3 credits, 3 hours

HI 150 Revolution if Modern Times (Duplication HI 350)
3 credits, 3 hours
HI 410 The Negro in American History (replaced by HI 136 African American History) 3 credits, 3 hours

## 4. Program Revision

VAPA Visual \& Performing Arts
(Change in title only)
(As the State of New York does not register concentrations, the titles of the new degrees need to be adjusted to the titles approved by the State of New York.)
Departmental approval: approval date March, 31, 2016
The following title changes are proposed in the QCC/Visual and Performing Arts A.S. Program:
Program: Visual and Performing Arts - Associate in Science (A.S.) Degree - Concentrations in Art and Design, Dance, Music, Theatre Arts

Program Code: 81303
HEGIS: 5610
Effective: Fall 2016

## SUMMARY OF CHANGES

| FROM: | TO: Associate in Science (A.S.) Degree in Art |
| :--- | :--- |
| Associate of Science in Visual and Performing Arts <br> (FAAS) with Concentrations in: Art and Design, Art <br> History, Dance, Music and Theatre Arts |  |
| FROM: <br> Associate of Science in Visual and Performing Arts <br> (FA-AS) with Concentrations in: Art and Design, Art <br> History, Dance, Music and Theatre Arts | TO: Associate in Science (A.S.) Degree in Dance |
| FROM: | TO: Associate in Science Degree (A.S.) in Music |



| recommended to take a Foreign Language course; or HI-110, HI- |
| :--- |
| 11, HI-112; or a Social Sciences course. |
| 4 Students who have taken a STEM Variant course in the Common |
| Core 1C have fulfilled this requirement. |
| All students must successfully complete two (2) writing-intensive |
| classes (designated "WI") to fulfill degree requirements. Sections of |
| the following courses denoted as "WI" may be taken to partially |
| satisfy the Writing Intensive Requirement: ARTH-100, ARTH-101, |
| ARTH-120, ARTH-202; MU-110; SP-142, SP-433, SP-275, SP- |
| 434, TH-111, TH-120, TH-221, DAN-111, BI-140, BI-202, GE-101, |
| GE-125, CH-101, CH-102, CH-110, CH-111; MA-301, MA-321; |
| ECON-101, ECON-102, SOCY-101, SOCY-230, SOCY-275, |
| PLSC-101, PLSC-180, PSYC-101, PSYC-220, PHIL-101, PHIL- |
| 130, PHIL-140; HI-110, HI-111, HI-112, HI-127, HI-128; LF-401, |
| LG-401, LI-401, LS-402; HE-102; PH-110 |
|  |
| CONCENTRATIONS |
| Gourses may be selected from the following categories to fulfill the |
| 21-23 credit concentration in the Fine and Performing Arts |

AND DESIGN CONCENTRATION - Students select 21-23 credits in consultation with a departmental adviser as follows:

## Six (6) credits from:

ARTH-100 Introductory Survey of Art
ARTH-101 History of Art I
ARTH-115 Modern Art
ARTH-116 American Art
ARTH-117 History of Photography
ARTH-120 Contemporary Art
ARTH-126 History of Asian Art
ARTH-202 History of Art II

## 14-20 credits from:

ARTH-115 Modern Art
ARTH-116 American Art
ARTH-117 History of Photography
ARTH-120 Contemporary Art
ARTH-126 History of Asian Art
ARTH-128 History of African Arts
ARTH-150 Art Administration
ARTS-121 Two-Dimensional Design
ARTS-122 Three-Dimensional Design: Introduction to Sculpture
ARTS-130 Art for Teachers of Children I
ARTS-131 Art for Teachers of Children II
ARTS-132 Introduction to Art Therapy
ARTS-141 Introduction to Photography
ARTS-151 Drawing I
ARTS-161 Painting I
ARTS-182 Sculpture
ARTS-186 Ceramics I
ARTS-191 Introduction to Video Art
ARTS-192 Web-Animation
ARTH-225 History of Graphic Design
ARTH-251 Art Curating
ARTH-252 Art Institutions and the Business of Art
ARTS-221 Color Theory
ARTS-242 Advanced Photographic Skills
ARTS-243 Digital Photography
ARTS-252 Drawing II
ARTS-253 IIlustration
ARTS-262 Painting II
ARTS-263 Painting III
ARTS-270 Printmaking: Relief and Stencil
ARTS-271 Printmaking: Intaglio
ARTS-286 Ceramics II
ARTS-290 Advertising Design and Layout
ARTS-291 Electronic Imaging
ARTS-292 Design for Desktop Publishing
ARTS-293 Design for Motion Graphics
ARTH-380 Gallery Internship I
ARTH-381 Gallery Internship II
ARTS-343 Large Format and Studio Photography
ARTS-344 Photography as Fine Art
ARTS-345 Creating The Documentary Image
ARTS-346 Color Photography
ARTS-348 Photographing People
to take a Foreign Language course; or HI-110, HI-11, HI-112; or a Social Sciences course.
4 Students who have taken a STEM Variant course in the Common Core 1C have fulfilled this requirement.
All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements. Sections of the following courses denoted as "WI" may be taken to partially satisfy the Writing Intensive Requirement: ARTH-100, ARTH-101, ARTH-120, ARTH-202; MU-110; SP-142, SP-433, SP-275, SP434, TH-111, TH-120, TH-221, DAN-111, BI-140, BI-202, GE-101, GE-125, CH-101, CH-102, CH-110, CH-111; MA-301, MA-321; ECON-101, ECON-102, SOCY-101, SOCY-230, SOCY-275, PLSC-101, PLSC-180, PSYC-101, PSYC-220, PHIL-101, PHIL130, PHIL-140; HI-110, HI-111, HI-112, HI-127, HI-128; LF-401, LG-401, LI-401, LS-402; HE-102; PH-110

Associate in Science (A.S.) Degree in Art

ART AND DESIGN CONCENTRATION - Students select 21-23 credits in consultation with a departmental adviser as follows:

## Six (6) credits from:

ARTH-100 Introductory Survey of Art
ARTH-101 History of Art I
ARTH-115 Modern Art
ARTH-116 American Art
ARTH-117 History of Photography
ARTH-120 Contemporary Art
ARTH-126 History of Asian Art
ARTH-202 History of Art II

## 14-20 credits from:

ARTH-115 Modern Art
ARTH-116 American Art
ARTH-117 History of Photography
ARTH-120 Contemporary Art
ARTH-126 History of Asian Art
ARTH-128 History of African Arts
ARTH-150 Art Administration
ARTS-121 Two-Dimensional Design
ARTS-122 Three-Dimensional Design: Introduction to Sculpture
ARTS-130 Art for Teachers of Children I
ARTS-131 Art for Teachers of Children II
ARTS-132 Introduction to Art Therapy
ARTS-141 Introduction to Photography
ARTS-151 Drawing I
ARTS-161 Painting I
ARTS-182 Sculpture
ARTS-186 Ceramics I
ARTS-191 Introduction to Video Art
ARTS-192 Web-Animation
ARTH-225 History of Graphic Design
ARTH-251 Art Curating
ARTH-252 Art Institutions and the Business of Art
ARTS-221 Color Theory
ARTS-242 Advanced Photographic Skills
ARTS-243 Digital Photography
ARTS-252 Drawing II
ARTS-253 Illustration
ARTS-262 Painting II
ARTS-263 Painting III
ARTS-270 Printmaking: Relief and Stencil
ARTS-271 Printmaking: Intaglio
ARTS-286 Ceramics II
ARTS-290 Advertising Design and Layout
ARTS-291 Electronic Imaging
ARTS-292 Design for Desktop Publishing
ARTS-293 Design for Motion Graphics
ARTH-380 Gallery Internship I
ARTH-381 Gallery Internship II
ARTS-343 Large Format and Studio Photography
ARTS-344 Photography as Fine Art
ARTS-345 Creating The Documentary Image
ARTS-346 Color Photography
ARTS-348 Photographing People

| ARTS-349 IIlustration and Fashion Photography ARTS-380 Artist Apprentice Internship I ARTS-381 Artist Apprentice Internship II ARTS-382 Special Problems in Studio Art I ARTS-383 Special Problems in Studio Art II ARTS-390 Portfolio Project in Studio Art | ARTS-349 IIlustration and Fashion Photography ARTS-380 Artist Apprentice Internship I ARTS-381 Artist Apprentice Internship II ARTS-382 Special Problems in Studio Art I ARTS-383 Special Problems in Studio Art II ARTS-390 Portfolio Project in Studio Art |
| :---: | :---: |
|  | Associate in Science (A.S.) Degree in Art |
| ART HISTORY CONCENTRATION - Students select 21-23 credits in consultation with a departmental adviser as follows: <br> The following courses are required ( 6 credits): <br> ARTH-101 History of Art I <br> ARTH-202 History of Art II <br> 14-20 credits from ${ }_{1}$ : <br> ARTH-115 Modern Art <br> ARTH-116 American Art <br> ARTH-117 History of Photography <br> ARTH-120 Contemporary Art <br> ARTH-126 History of Asian Art <br> ARTH-128 History of African Arts <br> ARTH-150 Art Administration <br> ARTH-251 Art Curating <br> ARTH-252 Art Institutions and the Business of Art <br> 1 One studio art course may be substituted for an art history course in consultation with a departmental advisor. | ART HISTORY CONCENTRATION - Students select 21-23 credits in <br> consultation with a departmental adviser as follows: <br> The following courses are required (6 credits): <br> ARTH-101 History of Art I <br> ARTH-202 History of Art II <br> 14-20 credits from ${ }_{1}$ : <br> ARTH-115 Modern Art <br> ARTH-116 American Art <br> ARTH-117 History of Photography <br> ARTH-120 Contemporary Art <br> ARTH-126 History of Asian Art <br> ARTH-128 History of African Arts <br> ARTH-150 Art Administration ARTH-251 Art Curating <br> ARTH-252 Art Institutions and the Business of Art1 <br> 1 One studio art course may be substituted for an art history course in consultation with a departmental advisor. |
| OM: Associate in Science in Visual and Performing Arts (FA-AS) with Concentrations in: Art and Design, Art History, Dance, Music and Theatre Arts | TO: The Associate in Science (A.S.) Degree in Dance |
| REQUIREMENTS FOR-THE A.S. DEGREE | REQUIREMENTS FOR THE Associate in Science (A.S.) Degree in Dance |
| COMMON CORE REQUIREMENTS | COMMON CORE REQUIREMENTS |
| REQUIRED CORE 1A: | REQUIRED CORE 1A: |
| English Composition I, II Take EN101 \& 1026 | English Composition I, II Take EN101 \& 1026 |
| REQUIRED CORE 1B: Mathematical \& |  |
| Quantitative Reasoning (select one from 1B) 3 | Quantitative Reasoning (select one from 1B) 3 |
| REQUIRED CORE 1C: Life and Physical Sciences (select one from 1C) | REQUIRED CORE 1C: Life and Physical Sciences (select one from 1C) |
| FLEXIBLE CORE 2A: World Cultures \& Global Issues (select one from 2A) | FLEXIBLE CORE 2A: World Cultures \& Global Issues (select one from 2A) |
| FLEXIBLE CORE 2B: U.S. Experience \& Its Diversity (select one from 2B) | FLEXIBLE CORE 2B: U.S. Experience \& Its Diversity (select one from 2B) |
| FLEXIBLE CORE 2C ${ }^{1}$ : Creative Expression (select one from 2C ${ }^{1}$ ) | FLEXIBLE CORE 2C ${ }^{1}$ : Creative Expression (select one from 2C ${ }^{1}$ ) |
| FLEXIBLE CORE 2D: Individual \& Society (select one from 2D) | FLEXIBLE CORE 2D: Individual \& Society (select one from 2D) |
| FLEXIBLE CORE 2E: Scientific World (select one from 2E) | FLEXIBLE CORE 2E: Scientific World (select one from 2E) |
| FLEXIBLE CORE 2A, 2B, 2C, 2D or 2E: (select one course ${ }^{2}$ ) Sub-total $\frac{3}{30}$ | FLEXIBLE CORE 2A, 2B, 2C, 2D or 2E: (select one course ${ }^{2}$ ) Sub-total $\frac{3}{30}$ |
| MAJOR <br> All students in the Visual and Performing Arts A.S. Degree Program must complete one of the concentrations: Art \& Design, Art History, Dance, Music, or Theatre Arts (see details following pages) to complete the degree requirements. | MAJOR |
|  | All students majoring in the Associate in Science (A.S.) Degree in |
|  | Dance must complete 21-23 credits in Dance major electives as outlined below. |
| Sub-total 21-23 |  |
| ADDITIONAL MAJOR REQUIREMENTS | ADDITIONAL MAJOR REQUIREMENTS |
| SP-211 ${ }^{3}$ Speech Communication ${ }^{3}$ ( 3 | HE-101 Intro. to Health Education or |
| HE-101 Intro. to Health Education or | HE-102 Health Behavior \& Society 1-2 |
| HE-102 Health Behavior \& Society 1-2 | One course in PE-400 or PE-500 series or DAN-100 series 1 |
| One course in PE-400 or PE-500 series or DAN-100 series 1 | Laboratory Science ${ }^{4} \mathrm{BI}-132, \mathrm{BI}-171, \mathrm{CH}-102, \mathrm{CH}-111$, |
| Laboratory Science ${ }^{4} \mathrm{BI}-132, \mathrm{BI}-171, \mathrm{CH}-102, \mathrm{CH}-111$, | CH-121 ET-842, PH-112 $0-1$ |
| Sub-total 5-7 | Sub-total 5-7 |
|  | ELECTIVES |
| ELECTIVES <br> Free Electives | Free Electives ${ }^{\text {Sub-total }}$ S $0-3$ |


| Sub-total 0-3 |  |
| :---: | :---: |
| Total Credits Required 60 | ```Total Credits Required 60 1 Recommended: ARTH-100—ARTH-128, ARTH-202, ARTH-225,``` |
| 1 Recommended: select from area different from concentration (ARTH-100—ARTH-128 including ARTH-202-\& ARTH-225, of DAN-111, or MU-110, of MU-120, or SP-471, or SP-472, or TH111). <br> 2 Recommended: select course from 2C in concentration-discipline. <br> 3 Students who have taken SP-211 in the Common Core are recommended to take a Foreign Language course; or $\mathrm{HI}-110, \mathrm{HI}-$ 11, HI-112; or a Social Sciences course. <br> 4 Students who have taken a STEM Variant course in the Common Core 1C have fulfilled this requirement. <br> All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements. Sections of the following courses denoted as "WI" may be taken to partially satisfy the Writing Intensive Requirement: ARTH-100, ARTH-101, ARTH-120, ARTH-202; MU-110; SP-142, SP-433, SP-275, SP434, TH-111, TH-120, TH-221, DAN-111, BI-140, BI-202, GE-101, GE-125, CH-101, CH-102, CH-110, CH-111; MA-301, MA-321; ECON-101, ECON-102, SOCY-101, SOCY-230, SOCY-275, PLSC-101, PLSC-180, PSYC-101, PSYC-220, PHIL-101, PHIL130, PHIL-140; HI-110, HI-111, HI-112, HI-127, HI-128; LF-401, LG-401, LI-401, LS-402; HE-102; PH-110 | MU-110, MU-120, SP-471, SP-472, or TH-111). <br> 2 Recommended: select an additional course from 2C in major discipline: DAN-111. <br> 3 Students who elect SP211 as part of the Common Core have satisfied the degree requirement of SP-211 and are recommended to take a Foreign Language course; or $\mathrm{HI}-110, \mathrm{HI}-11, \mathrm{HI}-112$; or a Social Sciences course. <br> 4 Students who have taken a STEM Variant course in the Common Core 1C have fulfilled this requirement. <br> All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements. Sections of the following courses denoted as "WI" may be taken to partially satisfy the Writing Intensive Requirement: ARTH-100, ARTH-101, ARTH-120, ARTH-202; MU-110; SP-142, SP-433, SP-275, SP434, TH-111, TH-120, TH-221, DAN-111, BI-140, BI-202, GE-101, GE-125, CH-101, CH-102, CH-110, CH-111; MA-301, MA-321; ECON-101, ECON-102, SOCY-101, SOCY-230, SOCY-275, PLSC-101, PLSC-180, PSYC-101, PSYC-220, PHIL-101, PHIL130, PHIL-140; HI-110, HI-111, HI-112, HI-127, HI-128; LF-401, LG-401, LI-401, LS-402; HE-102; PH-110 |
| CONCENTRATIONS <br> urses may be selected from the following categories to fulfill the 21-23 credit concentration in the Fine and Performing Arts |  |
| DANCE CONCENTRATION - Students select 21-23 credits In consultation with a departmental adviser as follows: <br> DAN 110 Foundations of Dance Movement (3 cr) <br> Two courses in Modern Dance technique (4cr) <br> (level determined by placement class) <br> Select from DAN 124, 125, 126, 127, 220, 221 or 222 <br> Two courses in Ballet technique (4cr) <br> (level determined by placement class) <br> Select from DAN 134, 135, 136, 137, 230, 231 or 232 <br> DAN 249 Modern Dance Improvisation (2cr) <br> DAN 251 Choreography I(2cr) <br> Two courses in Repertory or Workshop (4-6 cr) <br> Select from DAN 160, 161 260, 261 or 262 <br> (audition required for 260, 261, 262) <br> One course from Modern Dance or Ballet technique: (2cr) <br> Select from DAN 125, 126, 127, 220, 221, 222 <br> $135,136,137,230,231$ or 232 <br> Technique elective: (0-2cr) <br> Select from Modern Dance (DAN 125, 126, 127, 220, 221, 222), <br> Ballet (135, 136, 137, 230, 231, 232), <br> African/ Afro-Caribbean Dance DAN 103), <br> Advanced Beginning Jazz Dance (140), <br> Contact Improvisation (DAN 252) <br> or Special Topics in Modern Dance (DAN 270, 271, 272) <br> Note: Students are recommended to take DAN 111 as part of the Flexible Core (see note 2 above). | DANCE MAJOR - Students select 21-23 credits <br> In consultation with a departmental adviser as follows: <br> DAN 110 Foundations of Dance Movement (3 cr) <br> Two courses in Modern Dance technique (4cr) <br> (level determined by placement class) <br> Select from DAN 124, 125, 126, 127, 220, 221 or 222 <br> Two courses in Ballet technique (4cr) <br> (level determined by placement class) <br> Select from DAN 134, 135, 136, 137, 230, 231 or 232 <br> DAN 249 Modern Dance Improvisation (2cr) <br> DAN 251 Choreography I (2cr) <br> Two courses in Repertory or Workshop (4-6 cr) <br> Select from DAN 160, 161 260, 261 or 262 <br> (audition required for 260, 261, 262) <br> One course from Modern Dance or Ballet technique: (2cr) <br> Select from DAN 125, 126, 127, 220, 221, 222 <br> $135,136,137,230,231$ or 232 <br> Technique elective: (0-2cr) <br> Select from Modern Dance (DAN 125, 126, 127, 220, 221, 222), <br> Ballet (135, 136, 137, 230, 231, 232), <br> African/ Afro-Caribbean Dance DAN 103), <br> Advanced Beginning Jazz Dance (140), <br> Contact Improvisation (DAN 252) <br> or Special Topics in Modern Dance (DAN 270, 271, 272) <br> Note: Students are recommended to take DAN 111 as part of the Flexible Core (see note 2 above). |
| FROM: Associate in Science in Visual and Performing Arts (FA-AS) | TO: The Associate in Science (A.S.) Degree in Theatre |




obtaining accreditation under four separate degree programs represents a major advancement of the "four arts" at the college, strengthening each program individually and providing students with educational opportunities considerably enhanced by nationally recognized accreditation.
Dates of Votes of approval for a title change by departmental faculty:
Dept. of Speech Communication and Theatre Arts - 5/6/2015;
Dept. of Art and Design - 5/12/2015;
Dept. of Health Related Sciences -5/20/2015;
Dept. of Music - 5/21/2015.

## See details in the attachment (See original document in the attachment)

## BUSINESS DEPARTMENT

## Revisions: Certificate Program

Here is the information to include in a proposal to revise an existing degree or certificate program:
Departmental approval October 7, 2015

1. Program Name: Computer Information Systems - Certificate Program
2. Program Code:

79418
3. HEGIS number: 5101
4. Date approved by the department
5. Date the changes will be effective (if approved)

| 10 | 7 | 2015 |
| :---: | :---: | :---: |
| Month | Day | Year |
| 08 | 25 | 2016 |
| Month | Day | Year |

6. All text or items that will be deleted or changed should be marked with a strikethrough.
7. All new text, courses, credits, etc. should be marked by underlining.
8. All text or items that will be deleted or changed should be marked with a strikethrough.
9. Show the whole set o program requirements in a From/To format (see example below)

| From: |  | To: |  |
| :---: | :---: | :---: | :---: |
| Computer Information Systems - Certificate Program |  | Computer Information Systems - Certificate Program |  |
| Core Requirements | Credits | Core Requirements | Credits |
| Required Core:1 A: English Composition I: ENGL-101 | 3 | Required Core:1 A: English Composition I: ENGL-101 | 3 |
| Flexible Core: 2A, 2B, 2C, 2D, or 2E: Liberal Arts and Sciences Electives (select two courses) | 6 | Flexible Core: 2A, 2B, 2C, 2D, or 2E: Liberal Arts and Sciences Electives (select two courses) | 6 |
| Subtotal | 9 | Subtotal | 9 |
|  |  |  |  |
| Requirements for the Major |  | Requirements for Major |  |
| CIS-101 (formerly BU-500) Introduction to Microcomputer Applications | 3 | CIS-101 (formerly BU-500) Introduction to Microcomputer Applications | 3 |


| CIS-152 (formerly BU-520) Computer Programming for Business - | 3 | CIS-102 Computer Programming Fundamentals for Business | 3 |
| :---: | :---: | :---: | :---: |
| BU-509 Projects in Data Processing | 3 | CIS-153 (formerlv BU-532) <br> Microcomputer Operating Systems and Utility Software | 3 |
|  |  | CIS-206 (formerly BU-530) <br> Spreadsheet Business Applications | $\underline{3}$ |
|  |  | $\frac{\text { CIS-208 (formerly BU-508) }}{\text { Database Management Systems }}$ | $\underline{3}$ |
| Subtotal | 9 | Subtotal | 15 |
| Options (choose A or B) |  | Electives(select 2 courses from the following) |  |
| OPTION A COMPUTER PROGRAMMING |  | CIS-152 (formerly BU-520) <br> Computer Proaramming for Business I | $\underline{3}$ |
| BU-502 COBOL Programming | 3 | $\frac{\text { CIS-201 (formerly BU-534) }}{\text { Local Area Network Management }}$ | 3 |
| BU-504 Systems Analysis and Design with Business Applications | 3 | $\begin{gathered} \hline \text { CIS-204 (formerly BU-524) } \\ \text { Web Desian } \end{gathered}$ | 3 |
| GIS-202 (formerly BU-522) <br> Computer Programming for Business II | 3 | CIS-251 Analysis and Design of Systems Proiects | 3 |
| GIS-153 (formerly BU-532) <br> Microcomputer Operating Systems and Utility Software | 3 |  |  |
| Subtotal | 12 | Subtotal | $\underline{6}$ |
| Option B MICROCOMPUTER APPLICATIONS SOFTWARE |  |  |  |
| CIS-208 (formerly BU-508) Database Management Systems | 3 |  |  |
| CIS-206 (formerly BU-530) Spreadsheet Business Applications | 3 |  |  |
| GIS-153 (formerly BU-532) <br> Microcomputer Operating Systems and Utility Software | 3 |  |  |
| BU-859 Desktop Publishing (Software) | 3 |  |  |
| Subtotal | 12 |  |  |
| Total | 60 | Total | 60 |

10. Write a Rationale for all the changes

The Computer Information Systems (CIS) program was recently updated and revised. The revised CIS program was approved by the Academic Senate in May 2015. The previous program provided CIS majors with a choice of two tracks - Microcomputer Applications Software or Computer Programming. The revised program no longer provides for separate tracks. Creating a single track for CIS majors enables a more extensive set of required core courses which will better prepare our students for employment and/or college transfer. The revisions to existing courses in the revised CIS Program reflected changes to technology and industry directions. The CIS Certificate is being updated to reflect the changes in the recently approved CIS program.
11. Write a Summary for all the changes

The Computer Information Systems Certificate program is now one track and requires more courses in the major. In addition, it reflects the revised courses and course numbering of the CIS courses. All the Computer Information Systems courses have been given a new prefix: CIS (formerly BU).
12. If the program revision includes course revisions or new courses, submit the appropriate Course Revision form and/or New Course Proposal Form, along with the Syllabus and Course Objectives form.
None. [All course revisions and new courses were approved when revising the A.A.S. in Computer Information Systems which was approved by the Academic Senate May 2015.]

Courses new to the Certificate program:
CIS-102 (replaced BU-502 which was not originally required in the Certificate program.)
13. If courses will be deleted from the program, make clear whether the courses are to be deleted from the department's offerings as well.
$\mathrm{BU}-502$ is replaced with CIS-102.

BU-509 and BU-504 is replaced with CIS-251 (a new course which combines topics from the two previous courses).

BU-522 is now CIS-202 but is no longer required in the CIS Certificate program but is still offered A.A.S. in Computer Information Systems in the Business Department.

BU-859 is no longer required in the CIS Certificate program but is still offered in the A.A.S. in Office Administration and Technology program in the Business Department.
14. Explain briefly how students currently in the program will be able to complete the requirements There are only a few students in the certificate program. If a student needs a course no longer offered in the original certificate program, they should go the Business Department for a course substitution.

## 5. New Program

## ENGINEERING TECHNOLOGY

Dual-Joint Degree Program in Computer Science and Information Security with John Jay College of Criminal Justice.
Departmental approval date March 16, 2016.

QUEENSBOROUGH COMMUNITY COLLEGE

AND

JOHN JAY COLLEGE OF CRIMINAL JUSTICE
OF
THE CITY UNIVERSITY OF NEW YORK

PROPOSAL TO ESTABLISH A DUAL ADMISSION / JOINT PROGRAM IN

COMPUTER SCIENCE AND INFORMATION SECURITY (A.S. DEGREE PROGRAM)

AND

COMPUTER SCIENCE AND INFORMATION SECURITY (BS DEGREE PROGRAM)

EFFECTIVE JANUARY, 2017

SPONSORED BY
THE ENGINEERING TECHNOLOGY DEPARTMENT OF QUEENSBOROUGH COMMUNITY COLLEGE

AND

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE OF JOHN JAY COLLEGE OF CRIMINAL JUSTICE

CONTACTS:

PROFESSOR STUART ASSER, CHAIR

ENGINEERING TECHNOLOGY, QCC

DR. DOUGLAS SALANE, CHAIR

MATH AND COMPUTER SCIENCE, JJC

APPROVED BY:

DR. PAUL MARCHESE
PROVOST AND VICE PRESIDENT
FOR ACADEMIC AFFAIRS, QCC

DR. JANE BOWERS
PROVOST AND SENIOR VICE
PRESIDENT FOR ACADEMIC AFFAIRS


#### Abstract

: The Queensborough Community College (QCC) Department of Engineering Technology proposes an Associate in Science (A.S.) dual/joint degree program in Computer Science and Information Security with John Jay College of Criminal Justice (JJC). QCC students will enroll in its lower division program and upon graduation students will pursue a BS at JJC by enrolling in upper division courses at that institution. The lower division courses in computer science and information security are prerequisites for the upper division courses. In addition the curriculum will provide a solid foundation in general education with courses such as, but not limited to; English, Mathematics, and Social Science.

The field of Computer Science and Information Security provides a myriad of job opportunities and career paths. The education and training that will be jointly provided by both QCC and JJC will generate a sense of hope, purpose, and stability for the enrolled students. This is especially important in light of the current security environment of the country.


## Purpose and Goals:

Queensborough Community College proposes to develop a dual joint degree program with John Jay College of Criminal Justice in Computer Science and Information Security. The program will attract and allow students to complete their first two years of college at Queensborough and progress seamlessly to John Jay College of Criminal Justice to complete their bachelor's degree. Furthermore the dual/joint degree program will offer increased educational opportunities for Hispanics, African Americans, Asians, Woman and other underrepresented minorities in the cybersecurity field.

Most community colleges and many independent technical institutes and proprietary schools offer an associate's degree in computer science or a related information technology field. Employers usually look for people who have broad knowledge and experience related to computer systems and technologies, strong problem-solving and analytical skills, and good interpersonal skills. Courses in computer science or systems design offer good preparation for a job in computer occupations. The level of education and the type of training that employers require depend on their needs. One factor affecting these needs is changes in technology. Employers often scramble to find workers capable of implementing new technologies. Workers with formal education or experience in information security, for example, are in demand because of the growing need for their skills and services. Because jobs are better suited to the level of training provided by these programs, the dual joint degree program will offer students the flexibility and training to fill a variety of jobs titles with growth potential.

Queensborough will use existing courses from its Internet and Information Technology Program and create new courses to develop a new Associate in Science Program in Computer Science and Information Security, which will provide the fundamental knowledge required for cybersecurity. Queensborough Community College and John Jay College of Criminal Justice propose a dual admission/joint degree program (A.S./B.S.) in Computer Science and Information Security that will help address the shortage of trained and qualified cybersecurity specialists in the New York City Metropolitan area. In addition, the planned degree aims to:

1) improve student academic success at the community and senior colleges;
2) increase the rate of transfer from the associate degree to the bachelor's degree;
3) bolster opportunities for students' career entry and success in the cyber security and tech fields, and
4) ensure curricular alignment between the colleges and the needs of cybersecurity and tech employers.

## Need for Cybersecurity

Cybersecurity represents an unusually broad, remarkably well-compensated set of new and emerging occupational areas, offering a surfeit of employment opportunities in New York City due to the severe shortage of qualified cyber-workers. These occupations rank among the fastest growing professional employment opportunities in NYC. ${ }^{1}$ The NYC Department of Labor estimates overall growth in cyber-allied fields at over $20 \%$ by 2020 , with higher projections for selected categories ( $36.5 \%$ ), and with near astronomical growth rates anticipated ( $58.6 \%$ ) for the most highly skilled by 2022. ${ }^{2}$ This explosive growth places New York City second nationally-just behind Washington, D.C.-for cybersecurity employment opportunities. ${ }^{3}$

The field offers remarkable earning opportunities for successful college graduates. Entry-level positions in the cybersecurity fields are unusually well-paid, with private sector career entrants earning roughly $\$ 60,000$ to start, a figure that can double within the first two years of employment. The number of those entering the cybersecurity occupations, however, has lagged severely behind the number of openings, causing a critical gap in the public and private sectors' security defense and severe shortages of cyber-workers in specific industries, including financial services, healthcare and retail trade--among the largest industries in the NYC economy. Private sector New York employers point to the problem of inappropriately prepared applicants who lack rudimentary familiarity with the professional work world. They also underscore the dearth of knowledgeable and skills-qualified career entrants, which causes long-term job vacancies, limits the productivity of newly hired cybersecurity professionals, and stunts economic growth as the incidence and costs of cybercrime mushroom and place at grave financial risk both businesses and the public.

Queensborough Community College and John Jay will launch this collaborative program by building on their successful track-record in the CUNY Justice Academy. The CUNY Justice Academy is a unique educational partnership connecting John Jay College of Criminal Justice to CUNY's six traditional community colleges. This program currently provides academic pathways leading from associate degree study to a bachelor's degree and ultimately to exciting careers in the fields of Computer Science, Criminal Justice, Forensic Science and Forensic Financial Analysis. Assessment shows that CUNY Justice Academy programs have led to an unprecedented transfer rate of associate degree students from the participating community colleges to John Jay College when compared to the rate of non-CUNY Justice Academy transfers. The programs of the CUNY Justice Academy have also positively and significantly impacted student G.P.A.s, rates of credit

[^0]accumulation and time to degree completion. We anticipate that students who enroll in the proposed dual admission/joint degree program Computer Science and Information Security will benefit similarly.

The new degree program will benefit from a workforce development partnership with the Cybersecurity Workforce Alliance (CWA)--an association of private sector employers, technology innovators, and educators, including the Federal Reserve Bank of NY, Fidelity Bank, Bank of NY Mellon, J.P. Morgan Chase, Morgan Stanley, Goldman Sachs, SIFMA, Express Scripts, RANE, iQ4, and Capgemini, among others--formed to increase and improve the cybersecurity workforce-- and numerous public sector cybersecurity employers. The curriculum is also consistent with the framework of the National Institute for Standards and Technology's (NIST) National Initiative for Cybersecurity Education (NICE), which will increase our graduate's marketability.

Internship and other experiential learning opportunities developed by the participating colleges and also by external partners will further prepare students for the workforce. The degree program also will make use of new and emerging technologies to optimally ready students ${ }^{4}$ for cybersecurity careers, thereby expanding employment opportunities for the city's lower income college students by providing them with openings to highly paid jobs in the private sector that have been previously unavailable to them. Queensborough, as a CompTIA Authorized Academy Partner, will incorporate into this new program our existing training courses for industry certifications in A+ Certification, Network+ Certification, and Security+ Certification. CompTIA certification exams are an internationally recognized validation of foundation-level security skills and knowledge, and are used by organizations and security professionals around the globe. Computer Science and Information Security careers start with the right education, and research has shown that certified employees have superior communication skills and are better able to understand new or complex technologies. Furthermore, Queensborough' s proven track record and involvement with high schools will help ensure the high enrollment and graduation rate required to meet the workforce demand for cybersecurity specialists in the New York City Metropolitan area.

## Underrepresented Groups in the Computer Science and Information Security Workforce

The fields of computer science, programming, and information security have been growing in popularity for decades, due primarily to solid financial and professional prospects, and the incalculable effect of the digital revolution on every facet of our culture and society. However, the abundant opportunities in the world of computer science have, for the most part, been overlooked by underrepresented minority students, particularly those in the African-American, Hispanic, and Native American communities. The reasons for this problem are numerous and complex, as are its solutions.

The facts are indisputable and disheartening. The computer science education revolution has left our minority communities behind. Statistics on the subject painfully bear this out. For example, data from the National Science Foundation indicates that, although 36.4 percent of the resident population of the United States is non-white, only about 18 percent of all bachelor's degrees in

[^1]computer science in the U.S. go to non-white students. According to the Census Bureau, women make up 47 percent of the workforce, but only 27 percent work in computer related jobs. Blacks account for 11 percent of workers overall, but only 7 percent in the computer science industry. Hispanics make up 15 percent of the workforce and only 6 percent of computer jobs. And the problem appears to be getting worse.

There is no doubt that career opportunities for computer science graduates are plentiful. This is particularly true for underrepresented minority graduates, as employers continue to actively seek them out in an effort to diversify their workforce. The problem is convincing minority students to recognize these opportunities.

Queensborough is located in one of the most diverse counties in the United States and is one of the most diverse campuses in the nation. The college, with nearly 16,000 students, comprises nearly equal populations of African-Americans, Asians, Caucasians and Latinos, representing 143 nations of birth and 84 native languages. Committed equally to open-admission access for all learners and to academic excellence within an environment of diversity, Queensborough emphasizes the integration of academic and support services with a focused attention to pedagogy. Among the nearly 3,500 freshmen students enrolled annually, Hispanic students represent the largest group (31 percent), followed by Black student ( 25 percent), Asian students ( 22 percent) and Caucasian students (15 percent). The College offers Associate degree and certificate programs that prepare students for careers and for transfer to Baccalaureate degree programs. The College offers a broad base of community-oriented activities including continuing education, on- and off-campus learning centers, and cultural and recreational events. The College provides a network of developmental education and student support services designed to enable its diverse students to succeed in their college studies. Students are provided opportunities for challenge, stimulation, and growth through advanced courses, special projects, appropriate academic advisement, and personal and career counseling. Several mentoring programs reinforce this campus climate and ensure retention and will encourage transfer of students to continue on for the B.S. in Computer Science and Information Security degree at John Jay.

## Student Interest/Enrollment

The A.S. Program in Computer Science and Information Security is designed to attract students who have an interest in pursuing a career in computer science and who also wish to specialize in information security. There is a large untapped source of students in the Borough of Queens who can benefit from this type of program, especially in light of the excellent job outlook. QCC's Marketing Department, Office of Admissions and the Engineering Technology Department will market the proposed program with an aggressive information campaign. The QCC Web site will be updated with webpages devoted to the program. The Web pages will include a curriculum outline, employment outlook information, a FAQ list and, if possible, testimonials from recent graduates of John Jay's Bachelor of Science in Computer Science and Information Security. In addition, QCC will take every step necessary to ensure that every incoming student with an interest in a STEM career is made aware of the program. Every incoming freshman student will be given a flyer with a description of the program. Furthermore flyers will be distributed along with other recruitment materials to all New York City and Western Nassau High Schools through a comprehensive database which was created and is maintained by the Engineering Technology Department. A survey conducted in March 2016 among STEM students at QCC showed overwhelming interest in this dual/joint program. The survey was administered to QCC students enrolled in the engineering and
engineering technology majors. The questionnaire included a description of the program along with a list of the freshman and sophomore year required course sequences at QCC ( 60 credits). The questionnaire asked students if they would be interested in the program. Out of 529 responses, 448 respondents expressed interest in the program (approximately 85\%). We also expect the marketing of the program at both major recruitment functions and on the QCC Web site will result in an increase in transfer students to the college. Finally, we expect that this program will be popular among students currently enrolled at QCC and anticipate a slight shift of other majors to this program. According to recent figures from the Office of Institutional Research for Fall 2015 enrollment trends by curriculum, 2,070 students were enrolled in curricular programs (engineering, technology, computer science) from which to draw student interest for the cyber security program.

## Projected Student Enrollment

|  | YEAR I |  | YEAR II |  | YEAR III |  | YEAR IV |  | YEAR V |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Cont. | New | Cont. | New | Cont. | New | Cont. | New | Cont. |
| F-T | 25 | N/A | 50 | 20 | 75 | 50 | 100 | 80 | 125 | 100 |
| P-T | 20 | N/A | 20 | 15 | 30 | 30 | 40 | 40 | 50 | 50 |
| Sub-totals | 45 | N/A | 70 | 35 | 105 | 80 | 140 | 120 | 175 | 150 |
| Totals | 45 |  | 105 |  | 185 |  | 260 |  | 325 |  |

## Curriculum

The proposed Associate in Science degree in Computer Science and Information Security consists of courses that allow students to pursue further education and careers in Computer Science, Cybersecurity and Information Technology, as well as other software and computer networking related fields. The proposed program will allow students to enter the upper division baccalaureate program in Computer Science and Information Security at John Jay. The curriculum emphasizes basic computer science principles and provides a foundation in programming and cybersecurity as well as computer industry certifications. The program meets the general education requirements for the associate degree at QCC and also meets the general education requirements for the baccalaureate degree at John Jay.

## QCC/JJ Dual /Joint Degree Program: A.S. in Computer Science \& Information Security (QCC) and B.S. in Computer SCIENCE \& InFormation Security (J JC)

| QCC A.S. COMPUTER SCIENCE | CR. | JJC EQUIVALENTS | CR. |
| :---: | :---: | :---: | :---: |
| Gen Ed: Required Core |  | Gen Ed: Required Core |  |
| EN 101 English Composition I EN 102 English Composition II | $\begin{aligned} & 3 \\ & 3 \end{aligned}$ | ENG 101 College Composition I ENG 201 College Composition II | $\begin{aligned} & 3 \\ & 3 \end{aligned}$ |
| MA 119 College Algebra OR MA 440 Precalculus OR MA-441 Analytical Geometry \& Calculus I OR MA 260 Pre-calculus and Elements of Calculus for Business Students | 3-4 | MAT 105 College Algebra OR MAT 141 Pre-calculus OR MAT 241 Calculus I | $\begin{gathered} 3 \text { or } \\ +1 \mathrm{bl} \\ \hline \end{gathered}$ |
| Life and Physical Science | 3-4 | Life and Physical Science | $3+1 \mathrm{bl}$ |
| Gen Ed: Flexible Core |  | Gen Ed: Flexible Core |  |
| World Cultures \& Global Issues | 3 | World Cultures \& Global Issues | 3 |
| U.S. Experience in Its Diversity | 3 | U.S. Experience in Its Diversity | 3 |
| Creative Expression | 3 | Creative Expression | 3 |
| Individual \& Society (Recommended : 2.D. CRIM 101 Intro to the American Criminal Justice System)* | 3 | Individual \& Society | 3 |
| Scientific World | 3 | Scientific World | 3 |
| $6{ }^{\text {th }}$ Flexible Core Course | 3 | $6{ }^{\text {th }}$ Flexible Core Course | 3 |
| General Education Subtotal | 30-32 | Subtotal toward JJ Gen. Ed. | 30-32 |
| Requirements for the Major |  | Requirements for the Major |  |
| MA 440 Pre-Calculus | 4 | MAT 141 Pre-Calculus | $3+1 \mathrm{bl}$ |
| MA 441 Analytical Geometry and Calculus I | 4 | MAT 241 Calculus I | $3+1 \mathrm{bl}$ |
| MA 471 Introduction to Discrete Mathematics | 3 | MAT 204 Discrete Mathematics | 3 |
| ET 704 Networking Fundamentals I | 4 | CSCI 379 Computer Networking | $3+1 \mathrm{bl}$ |
| ET 570 Creating Smartphone Apps | 3 | CSCI blanket (can be used towards Computer Sci Elective) | 3 |
| ET 575 Intro to C++ Programming Design and Implementation | 3 | CSCI 271 Intro to Computing \& Programming | 3 |
| ET 580 Object Oriented Programming | 3 | CSCI 272 Object-Oriented Programming | 3 |
| ET 585 Computer Architecture | 3 | CSCI 274 Computer Architecture | 3 |
| Subtotal toward Major | 27 | Subtotal toward Major | 27 |
| Electives |  |  |  |
| Computer Sci/Security Elective ** | 3 | CSCI blanket | 3 |
| TOTAL CREDITS REQUIRED FOR A.S. | 60 | TOTAL CREDITS ACCEPTED TO JJ | 60 |

Note: *Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements. All students must complete two (2) WI designated classes to fulfill degree requirements.
**Elective: ET 725 Computer Network Security strongly recommended

## Junior and Senior Year - Courses to be taken at John Jay

| Course and Title |  |
| :---: | :---: |
| General Education (College Option) and other Required Courses |  |
|  | Credits |
| Justice Core II. Either Justice in Global Perspective OR Struggle for Justice and Equality in U.S. | 3 |
| Learning from the Past OR Communications | 3 |
|  |  |
| PART ONE. Major Core Courses |  |
| CSCI 360 Cryptography and Cryptanalysis | 3 |
| CSCI 373 Advanced Data Structures | 3 |
| CSCI 374 Programing Languages | 3 |
| CSCI 375 Operating Systems | 3 |
| CSCI 377 Computer Algorithms | 3 |
| CSCI 411 Computer Security and Forensics | 3 |
| CSCI 412 Network Security and Forensics | 3 |
| PART TWO. Required Math Courses |  |
| MAT 301 Probability and Statistics | 3 |
| PART THREE. ELECTIVES |  |
| Computer Science Elective (if not taken at QCC: CSCI 362 or 376 or 380) | 0-3 |
| Mathematics Elective (if not taken at QCC: MAT 242 or 310 or 351 or 371 or 380) | 0-3 |
| PART FOUR. ETHICS |  |
| PHI 3XX Ethics and Information Technology | 3 |
| PART FIVE. CAPSTONE COURSES |  |
| CSCI 400 Capstone Experience in Digital Forensics/Cybersecurity I \& II | 6 |
|  |  |
| Subtotal | 33-39 |
| Electives | 15-21 |
|  |  |
| Total Credits at John Jay College of Criminal Justice | 60 |

Total Degree credits for the Bachelor of Science in Computer Science \& Information Security - 120

## Faculty

No additional full-time faculty will be needed for the proposed program in the first three years. Current QCC faculty members already teach the courses that represent the general and major requirements in the program. Additional adjunct faculty will be needed, however, for additional sections of courses required to run the program.

## Cost

There are minimal additional facilities or equipment costs associated with this program. QCC has state-of-the-art computer laboratories already equipped with hardware and software that will support this program. Normal ongoing computer and software updates would be made for the courses already being taught.

The White House: FACT SHEET: Cybersecurity National Action Plan (CNAP)
https://www.whitehouse.gov/the-press-office/2016/02/09/fact-sheet-cybersecurity-national-action-plan
The White House: The Comprehensive National Cybersecurity Initiative
https://www.whitehouse.gov/issues/foreign-policy/cybersecurity/national-initiative
Department Of Homeland Security: Join DHS Cybersecurity
https://www.dhs.gov/homeland-security-careers/dhs-cybersecurity
Forbes Magazine: One Million Cybersecurity Job Openings in 2016
http://www.forbes.com/sites/stevemorgan/2016/01/02/one-million-cybersecurity-job-openings-in-2016/\#4509bb127d27
Forbes Magazine: College Degrees with the Highest Starting Salaries
http://www.forbes.com/sites/susanadams/2013/04/15/college-degrees-with-the-highest-starting-salaries-3/\#147b84077f0b
Computer Science Online: A Guide to Computer Science Careers
http://www.computerscienceonline.org/careers/

Computer Science Zone: The 50 Highest Paying Jobs in Computer Science
http://www.computersciencezone.org/50-highest-paying-jobs-computer-science/

## Additional Computer Science and Information Resources

Codecademy: Interactive tool for learning how to program
https://www.codecademy.com/
MIT: Open Courseware - Online self-study courses in Computer Science
http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/
Harvard: Intensive Introduction to Computer Science Open Learning Course
https://www.extension.harvard.edu/open-learning-initiative/intensive-introduction-computer-science
Stack Exchange: Computer Science Q\&A for Students
http://cs.stackexchange.com/

## Related Sites

Google Developer
https://developers.google.com/
Apple Developer
https://developer.apple.com/
Microsoft Developer
https://msdn.microsoft.com/en-us
Github: Collaborative programming for private and public projects https://github.com/

## Appendices

## Appendix A:

## COURSE DESCRIPTIONS FOR REQUIRED COURSES

ENGL-101 English Composition $\mathrm{I}_{2}\left(1 \mathrm{~A}_{1}\right)$ (formerly EN-101)
3 class hours 1 conference hour 3 credits Prerequisite: A score of 480 on the SAT, or $75 \%$ on the New York State English Regents, or a passing score on the CUNY/ACT Writing and Reading tests. Note: Credit will not be given to students who have successfully completed EN-103.
Development of a process for producing intelligent essays that are clearly and effectively written; library work; 6,000 words of writing, both in formal themes written for evaluation and in informal writing such as the keeping of a journal. During the recitation hour, students review grammar and syntax, sentence structure, paragraph development and organization, and the formulation of thesis statements.
ENGL-102 English Composition II: Introduction to Literature ${ }_{2}\left(1 \mathrm{~A}_{1}\right)($ formerly $\mathrm{EN}-102$ )
3 class hours 1 conference hour 3 credits Prerequisite: EN-101
Continued practice in writing combined with an introduction to literature: fiction, drama, and poetry. During the recitation hour, students review basic elements of writing and analytical and critical reading skills and research strategies.

## MA-119 ${ }_{3}$ College Algebra ${ }_{4}\left(\mathbf{1 B}_{2}\right)$

3 class hours 1 recitation hour 3 credits Prerequisite: MA-10 or exempt from remedial mathematics or permission of Department Corequisite: May be taken as a corequisite to MA-121.
A basic presentation of the fundamental concepts of college algebra, systems of linear equations, inequalities, linear, quadratic, exponential and logarithmic functions. During the recitation hour, students review properties of signed numbers, graphing of linear equations, basic geometric concepts, solution of linear equations, factoring algebraic expressions and its applications to rational expressions. A graphing calculator will be required.

## MA-440 Pre-Calculus Mathematics ${ }_{3}\left(\mathbf{1 B}_{2}\right)$

3 class hours 2 recitation hours 4 credits Prerequisite: MA-119 and MA-121 with a $C$ or better in both courses or MA-114 with a grade of $C$ or better, or satisfactory score on the Mathematics Placement Test, Level II.
Mathematical foundations necessary for the study of the calculus. An introduction to analytic geometry, and the elementary functions of analysis, including algebraic, trigonometric, logarithmic, and exponential functions. The use of the graphing calculator will be included.

## MA-441 Analytic Geometry and Calculus I (1B2)

4 class hours 1 recitation hour 4 credits Prerequisite: MA-440 (with a grade of $C$ or better).
Functions and graphs; derivative of algebraic and trigonometric functions with applications; indefinite and definite integrals with applications; the fundamental theorem of integral calculus; conic sections. Students will develop problem solving skills and construct mathematical models in the computer laboratory using software such as MAPLE, DERIVE, CONVERGE, and MATHCAD.

## MA-471 Introduction to Discrete Mathematics

3 class hours 3 credits Prerequisite: MA-440
Concepts in set theory, functions, logic, proofs, elementary number theory, introduction to abstract algebra.
CRIM-101 Introduction to the American Criminal Justice System ${ }_{4}$ (2D $_{1}$ )
3 class hours 3 credits Offered as needed Prerequisite: BE-122 (or BE-226), or satisfactory score on the CUNY/ACT Assessment Test
This course is an introductory survey of the American criminal justice system with a view to its social and institutional context and its structure and functioning. The course provides an overview of the foundations and components of the criminal justice system, including (substantive and procedural) criminal law, police, courts and corrections. The main emphasis will be placed on the criminal justice process and how the various institutions of criminal justice interact. Key issues will be addressed as they arise at different stages of the process, such as the conflict between crime control and due process, and conflicts related to, for example, gender, class and ethnicity. This course will satisfy the Social Sciences elective requirement for all QCC degree programs.

## ET 570 Creating Smartphone Apps $_{1}\left(2 \mathrm{E}_{2}\right)$

3 Class Hours 3 Credits
This course introduces the use and features of smartphones in modern life and how to create working applications. Students will create apps using existing modules and building blocks. No prior programming knowledge is necessary. After this initial experience, basics of the Java programming language will be introduced along with a minimum of XML programming to introduce the student to the needs of more advanced apps. Software development kits (SDK), along with the development environment will also be covered. In addition, students will have the opportunity to distribute apps into the Marketplace.ET-575 Introduction to C++ Programming Design and Implementation (2E1)
ET-575 Introduction to $\mathrm{C}_{++}$Programming Design and Implementation ( $\mathbf{2 E}_{1}$ )
2 Class Hours, 2 Lab Hours, 3 Credits
Prerequisite MA-321 or corequisite MA-114 or MA-119 or MA-440
This foundation course provides a general understanding of the use and development of computer software applications in fields such as science, mathematics, and business using a high level computer language. The course will concentrate on assessing the practical requirements of a software package and developing applications in C++, which is a high level computer language that teaches the basic skills necessary for implementing it in a variety of real world applications. Topics include the analysis and use of concepts such as: primitive data types and their operators, basic l/O, control statements, decision making, looping, subprograms, arrays, strings and computer ethics. Each student will have a computer platform at his/her disposal from which he/she will design, develop, implement and test programs, while evaluating the interactions between a user and the computer.

## ET-580 Object Oriented Programming

3 Class Hours 3 Credits
Prerequisite ET-575
This course covers object-oriented programming principles and techniques using $\mathrm{C}++$. Topics include pointers, classes, overloading, data abstraction, information hiding, encapsulation, inheritance, polymorphism, file processing, templates, exceptions, container classes, and low-level language features.

## ET-585 Computer Architecture

3 Class Hours 3 Credits
Prerequisite ET-575
The course covers the basic principles of computer organization, operation and performance. It also deals with embedded systems, peripheral devices, memory management, and processor family evolution patterns.

## ET-704 Networking Fundamentals I

3 class hours 3 laboratory hours 4 credits Prerequisite and/or corequisites: None
This is an introductory level course that provides students with the basic terminology and skills needed to design, build and maintain small to medium networks. Topics include: OSI model; electronics and signals, collisions and collision domains, MAC addressing, LANs, structured cabling, cabling tools, Ethernet, network design and documentation, power supply issues, Internet Protocol addressing and subnetting, network protocols. This course is the first in a series of four courses designed to prepare students for taking the Cisco Certified Network Associate (CCNA) certification exam. Students are provided with classroom and laboratory experience in current and emerging networking technology.

## ET-725 Computer Network Security

3 Class Hours 3 Credits
Prerequisite ET-704 or Department Permission
This course covers computer network security design and vulnerabilities. Topics include: Cryptography and encryption, denial-of-service attacks, firewalls and intrusion prevention systems, software and operating system [OS] security, legal and ethical aspects of cybercrime and computer crime.

## Appendix B:

## PROGRAM CONTENT AND REQUIREMENTS

| Program Content and Requirements |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| List each course required for the college core (if applicable) | Course Number and Course Title | No. of Credits | Is this a new course? | Is this a revised course? |
|  | Required Core 1A - ENGL-101, ENGL-102 English Composition I, II* | 6 | No | No |
|  | Required Core 1B - MA 119, College Algebra or higher)* <br> MA 121 Trigonometry (if required) | 3-4 | No | No |
|  | Required Core 1C - Life \& Physical Science* <br> One science laboratory course (STEM variant in common core satisfies this requirement): Applicable courses include $\mathrm{BI}-132$, BI-171; CH-102, CH-111, CH-121; ET-842; PH-112. | 3-4 | No | No |
|  | Flexible Core 2A - World Cultures \& Global Issues* | 3 | No | No |
|  | Flexible Core 2B-U.S. Experience in Its Diversity* | 3 | No | No |
|  | Flexible Core 2C - Creative Expression * | 3 | No | No |
|  | Flexible Core 2D - Individual \& Society ( Recommended: CRIM101 Intro to the American Criminal Justice System)* | 3 | No | No |
|  | Flexible Core 2E - Scientific World * | 3 | No | No |
|  | Flexible Core $2 \mathrm{~A}, \mathrm{~B}, \mathrm{C}, \mathrm{D}$, or $\mathrm{E}^{*}$ | 3 | No | No |
| List each course required for the major (include any field experience, research, thesis, or capstone course) | General Education Core subtotal | 30-32 |  |  |
|  | MA-440 Pre-Calculus* | 4 | No | No |
|  | MA-441 Analytical Geometry and Calculus* | 4 | No | No |
|  | MA-471 Introduction to Discrete Mathematics* | 3 | No | No |
|  | ET-704 Networking Fundamentals I | 4 | No | No |
|  | ET-570 Creating Smartphone Apps | 3 | No | No |
|  | ET-575 Intro to C++ Programming Design and Implementation | 3 | No | No |
|  | ET-580 Object Oriented Programming | 3 | Yes | No |
|  | ET-585 Computer Architecture | 3 | Yes | No |
|  | Major Requirements subtotal | 27 |  |  |
| List each free electives | Computer Science/Security Elective ( Recommended: ET 725 Computer Network Security)** | 3 | No | No |
| Total credits |  | 60 |  |  |

*Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements. All students must complete two (2) WI designated classes to fulfill degree requirements.
**Elective: ET 725 Computer Network Security strongly recommended.

## Computer Science \& Information Security A.S. / B.S. <br> Dual/Joint Degree Program with John Jay College of Criminal Justice

Common Core
Credits
REQUIRED CORE: I. A: English Composition I, II (Take ENGL 101 \& 102) ..... 6
REQUIRED CORE: I. B: Mathematical \& Quantitative Reasoning (Required: MA 119 or higher)* ..... 3-4
REQUIRED CORE: I. C: Life \& Physical Sciences ..... 3-4
FLEXIBLE CORE: II. A: World Cultures \& Global Issues (Select one course) ..... 3
FLEXIBLE CORE: II. B: U.S. Experience in Its Diversity (Select one course) ..... 3
FLEXIBLE CORE: II. C: Creative Expression (Select one course) ..... 3
FLEXIBLE CORE: II. D: Individual \& Society (Select one course - Recommended: CRIM 101 ..... 3
Intro to the American Criminal Justice System)
FLEXIBLE CORE: II. E: Scientific World (Select one course) ..... 3
FLEXIBLE CORE: II: $\underline{A}, \underline{B}, \underline{C}, \underline{D}$ or $\underline{E}$ (Select one course) ..... 3
Subtotal ..... 30-32
Major
MA 440 Pre-Calculus ..... 4
MA 441 Analytical Geometry and Calculus I ..... 4
MA 471 Introduction to Discrete Mathematics ..... 3
ET 704 Networking Fundamentals I ..... 4
ET 570 Creating Smartphone Apps ..... 3
ET 575 Intro to C++ Programming Design and Implementation ..... 3
ET 580 Object Oriented Programming ..... 3
ET 585 Computer Architecture ..... 3
Subtotal ..... 27
Elective(s)
Computer Science/Security Elective** ..... 3

[^2]
## Appendix C:

## PROGRAM SCHEDULING

Freshman and Sophomore year course sequences at Queensborough Community College (60 CREDITS)

| FRESHMAN YEAR: FALL |  | FRESHMAN YEAR: SPRING |  |
| :--- | :---: | :--- | :---: |
| COURSE TITLE | Credits | COURSE TITLE | Credits |
| RC: EN 101 English Composition I | 3 | RC: EN 102 English Composition II | 3 |
| RC: MA 119 or higher | $3-4$ | MA 440 Pre-Calculus | 4 |
| FC: Creative Expression | 3 | FC: Individual \& Society <br> (Recommended : 2.D. CRIM 101 Intro to <br> the American Criminal Justice System)* | 3 |
| RC: Life \& Phys Sci | $3-4$ | ET 575 Intro C++ Programming | 3 |
| FC: U.S. Experience | 3 | ET 570 Creating Smartphone Apps | 3 |
| Total Credits |  |  |  | $\mathbf{1 6}$.


| SOPHOMORE YEAR: FALL |  | SOPHOMORE YEAR: SPRING |  |
| :--- | :---: | :--- | :---: |
| COURSE TITLE | Credits | COURSE TITLE | Credits |
| MA 441 Analytical Geo \& Calc I | 4 | ET 704 Network Fundamentals | 4 |
| ET 580 Object Oriented Program | 3 | MA 471 Intro Discrete Math | 3 |
| ET 585 Computer Architecture | 3 | FC: 6 ${ }^{\text {th }}$ Flex Core | 3 |
| FC: World Cultures | 3 | Computer Sci elective | 3 |
| FC: Scientific World | 3 |  | $\mathbf{1 3}$ |
| Total Credits |  |  |  |
| $\mathbf{1 6}$ |  |  |  |
| Total credits required for A.S. in Computer Science |  |  |  |

## Junior and Senior Year Course Sequences to be taken at John Jay College of Criminal justice ( 60 Credits) - Sample Program

| JUNIOR YEAR: FALL |  | JUNIOR YEAR: SPRING |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
| COURSE TITLE | Credits | COURSE TITLE | Credits |  |  |
| Col Opt | Justice in Global Perspective | 3 | Col Opt | Learning fr Past or Com | 3 |
| CSCI 373 | Advanced Data Structures | 3 | CSCI 375 | Operating Systems | 3 |
| MAT 301 | Probability \& Statistics | 3 | CSCI 377 | Computer Algorithms | 3 |
| CSCI 374 | Programming Languages | 3 | MAT | Mathematics Elective | 3 |
|  | Elective or Minor | 3 |  | Elective or Minor | 3 |
| Total Credits |  |  |  |  |  |
| $\mathbf{1 5}$ |  |  |  |  |  |


| SENIOR YEAR: FALL |  |  | SENIOR YEAR: SPRING |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| COURSE TITLE |  | Credits | COURSE TITLE |  | Credits |
| CSCI 411 | Computer Security \& Forensics | 3 | CSCI 412 | Network Security \& Forensics | 3 |
| CSCI 400 | Capstone Exp in Cybersecurity I | 3 | CSCI 401 | Capstone Exp in Cybersecurity II | 3 |
| PHI 3XX | Ethics \& Info Technology | 3 | CSCI 360 | Cryptography \& Cryptanalysis | 3 |
|  | Elective or Minor | 3 |  | Elective or Minor | 3 |
|  | Elective or Minor | 3 |  | Elective or Minor | 3 |
|  |  |  |  | Total Credits | 15 |
| Total credits to be taken at John Jay College |  |  |  |  | 60 |
| Total credits for the Dual / Joint A.S. in Computer science (QCC)/ B.S. in COMPUTER SCIENCE \& INFORMATION SECURITY (JJC) |  |  |  |  | 120 |

## Appendix D:

## FACULTY TEACHING ASSIGNMENTS

Faculty Assignment

| Faculty Member | Title of Position at Institution | Full-time (FT) or Adjunct (Adj.) at the Institution | Full-time (FT) or Parttime (PT) in the Program | If Part-time in the Program, Specify Other Course Responsibilities |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Titles of Courses Taught Which Are Not Part of the Program | Related Credits |
| Stuart Asser | Professor | Full-time | Full-time |  |  |
| Belle Birchfield | Professor | Full-time | Full-time |  |  |
| John Buoncora | Lecturer | Full-time | Full-time |  |  |
| Nathan Chao | Professor | Full-time | Full-time |  |  |
| Edward Davis | Assistant Prof. | Full-time | Full-time |  |  |
| Merlinda Drini | Assistant Prof. | Full-time | Full-time |  |  |
| Marvin Gayle | Associate Prof. | Full-time | Full-time |  |  |
| Joseph Goldenberg | Associate Prof. | Full-time | Full-time |  |  |
| MD.Shahadat Hossain | Assistant Prof. | Full-time | Full-time |  |  |
|  |  |  | Full-time |  |  |
| Robert Kueper | Assistant Prof. | Full-time | Full-ti |  |  |
| Danny Mangra | Associate Prof. | Full-time |  |  |  |
|  |  |  | Full-time |  |  |
| Mike Metaxas | Assistant Prof. | Full-time | Full-time |  |  |
| Hamid Namdar | Associate Prof. | Full-time | Full-time |  |  |
| Kee Park | Assistant Prof. | Full-time | Full-time |  |  |
| Jeffrey Schwartz | Assistant Prof. | Full-time | Full-time |  |  |
| Dugwon Seo | Assistant Prof. | Full-time | Full-time |  |  |
| Dimitrios Stroumbakis | Assistant Prof. | Full-time | Full-time |  |  |
| Graig Weber | Associate Prof. | Full-time | Full-time |  |  |
| Richard Yuster | Professor | Full-time | Full-time |  |  |
| Kuaile Zhao | Assistant Prof. | Full-time | Full-time |  |  |
| Faculty Member | Title of Position at Institution | Full-time (FT) or Adjunct (Adj.) at the Institution | Full-time (FT) or Parttime (PT) in the Program | If Part-time in the Program, Specify Other Course Responsibilities |  |
|  |  |  |  |  |  |
|  |  |  |  | Titles of Courses Taught Which Are Not Part of the Program | Related Credits |



Academic Senate Agenda—May 10, 2016—Attachment F

## FACULTY

| Course Title (a) | No. of Credits <br> (b) | Faculty Member(s) Assigned to Each Course. (Use "D" to Specify Program Director) (c) | Highest Earned Degree \& Discipline, College or University (d) | Relevant Occupational Experience (e) | Relevant other experience (sucl as certification/ licensure) (f) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ET 575 Intro <br> C++ <br> Programming | 3 | Merlinda Drini <br> Nathan Chao <br> Steven Trowbridge <br> Hamid Namdar <br> Richard Yuster <br> Mike Metaxas <br> Joann Sun <br> Vaughn Nystrom | Ph.D. EE 2009 CCNY <br> Ph.D. EE 1975 Cooper Union <br> MA Computer <br> Science, 2012 <br> MSCSci, 1994, NYIT <br> MSEE, 1967 NYU <br> MSEE, Polytechnic U. <br> of NY 1973 <br> MS Comp Sci, 1995, NYIT <br> MBA, St. John's University, 1976 | PE, State of NY <br> PE, State of NY <br> PE, State of NY <br> PE, State of NY |  |
| ET 570 <br> Creating <br> Smartphone <br> Apps | 3 | Nathan Chao <br> Robert Kueper <br> Mike Metaxas <br> Michael Lawrence <br> Vaughn Nystrom <br> Marvin Gayle | Ph.D. EE 1975 Cooper Union BSET, 1989 ESC MSEE, Polytechnic U. of NY 1973 USAF Acad. BS Eng. 1978 <br> MBA, St. John's University, 1976 <br> MSEE, 1997 CCNY | PE, State of NY <br> PE, State of NY <br> PE, State of NY |  |
| ET 580 Object Oriented Program | 3 | Merlinda Drini Steven Trowbridge Joann Sun <br> Michael Lawrence <br> Vaughn Nystrom <br> Omar Ellis | Ph.D. EE 2009 CCNY <br> MA Computer <br> Science, 2012 <br> MS Comp Sci, 1995, NYIT <br> USAF Acad. BS Eng. 1978 <br> MBA, St. John's University, 1976 <br> MS Manag. Info. Sys. Devry, 2009 |  |  |
| ET 585 <br> Computer Architecture | 3 | Merlinda Drini Steven Trowbridge <br> Belle Birchfield | Ph.D. EE 2009 CCNY MA Computer Science, 2012 PhD EE, Columbia 1995 MSEE, 1993, MIT |  |  |


| Course Title (a) | No. of Credits (b) | Faculty Member(s) <br> Assigned to Each Course. <br> (Use "D" to Specify <br> Program Director) (c) | Highest Earned Degree \& Discipline, College or University (d) | Relevant Occupational Experience (e) | Relevant other experience (suc as certification/ licensure) ( f ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Jeffrey Schwartz <br> Hamid Namdar <br> Richard Yuster <br> Mike Metaxas | MSCSci, 1994, NYIT MSEE, 1967 NYU MSEE, Polytechnic U. of NY 1973 | PE, State of NY <br> PE, State of NY <br> PE, State of NY <br> PE, State of NY |  |
| ET 704 <br> Network <br> Fundamentals | 4 | Merlinda Drini Danny Mangra <br> Andrei Szabo <br> Brian Toyota <br> Kimmon Stair | Ph.D. EE 2009 CCNY MSEE, Polytechnic U. of NY 2002 <br> MSEE, Polytechnic Inst. Bucharest 1977 MS Telecom Mgt., 2009, Stevens Inst. Of Tech. MBA, LIU 2010 | PE, State of NY |  |
| ET 725 <br> Computer <br> Network <br> Security | 3 | Merlinda Drini Marvin Gayle Michael Lawrence <br> Andrei Szabo | Ph.D. EE 2009 CCNY MSEE, 1997 CCNY USAF Acad. BS Eng. 1978 <br> MSEE, Polytechnic Inst. Bucharest 1977 | PE, State of NY |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## FACULTY TO BE HIRED

Not applicable

Appendix E New Resources
Appendix F Projected Revenue
Appendix G Supporting Materials for Projected Revenue Appendix H Five-year Financial Projections

## Appendix I

## STUDENT SURVEY

## Student Interest Survey

Queensborough Community College (QCC) is planning to offer an Associate in Science (A.S) degree in Computer Science and Information Security. Computer security, also known as cybersecurity or IT security, is the protection of information systems from theft or damage to the hardware or software. The proposed degree program will be a jointly registered, dual admission program, with John Jay College of Criminal Justice's Bachelor of Science in Computer Science and Information Security. On successful completion of the lower division at QCC, students will have a seamless transition to the upper division of the baccalaureate program at John Jay.

The following page lists the freshman and sophomore year course sequences at QCC (60 credits).

Circle Yes or No
Would you be interested in this program? Yes No

Appendix J
NEW COURSES

1. Department:

Engineering Technology
ET-580 Object Oriented Programing

- ET-575

Co-requisites (if any):
4. Hours (Class, recitation, laboratory, studio) \& Credits:

3 hours, 3 credits hrs.
5. Date Approved by Department:
6. Date Submitted to Curriculum Committee:

| Month | Day | Year |
| :---: | :---: | :---: |
| 3 | 16 | 2016 |
| 3 | 26 | 2016 |

7. In order to avoid unnecessary delays or difficulties, please state if the proposal was discussed with other department chair(s) with similar interests.

*If yes, which department(s): Math \& Business
8. Course Description for college catalog:

This course covers object-oriented programming principles and techniques using C++. Topics include pointers, classes, overloading, data abstraction, information hiding, encapsulation, inheritance, polymorphism, file processing, templates, exceptions, container classes, and low-level language features.

## 9. Rationale - why the course is needed or desired:

Object Oriented programming is a programming style that is associated with the concept of objects, having data fields and related member functions.
Objects are instances of classes and are used to interact amongst each other to create applications Instance means, the object of class on which we are currently working. C++ can be said to be as C language with classes. In C++ everything revolves around object of class, which have their methods \& data members.
This course will help students master all techniques of software development in the C++ Programming Language and demonstrate these techniques by the solution of a variety of problems spanning the breadth of the language.
10. Curricula into which the course would be incorporated and the requirements it will satisfy:

```
Computer Science and Information Security (Required)
Internet and Information Technology (Elective)
Electronic Engineering Technology (Elective)
Computer Engineering Technology (Elective)
Telecommunications Technology (Elective)
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11. Curricular objectives addressed by this course:
A. Demonstrate proficiency in factual knowledge and conceptual understanding required for transfer to the junior year in computer science, information technology or a related discipline.

B: Engineering Competence: Graduates will be competent technicians with problem solving and design skills, and have the ability to apply mathematics, science and modern engineering software to solve computer science and computer engineering technology problems.

C: Demonstrate an understanding of professional and ethical responsibility
12. General Education Objectives: Check those that will be assessed:

1. Communicate effectively through reading, writing, listening and speaking
2. Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
3. Reason quantitatively and mathematically as required in their fields of interest and in everyday life
4. Use information management and technology skills effectively for academic research and lifelong learning
5. Integrate knowledge and skills in their program of study
6. Differentiate and make informed decisions about issues based on multiple value systems
7. Work collaboratively in diverse groups directed at accomplishing learning objectives
8. Use historical or social sciences perspectives to examine formation of ideas, human behavior, social institutions, or social processes
9. Employ concepts and methods of the natural and physical sciences to make informed judgments 10.Apply aesthetic and intellectual criteria in the evaluation or creation of works in the humanities or the arts

| General Education Objectives <br> addressed by this course: Select from <br> list. (There is no minimum required for <br> these objectives.) | Briefly describe activities in the course which help <br> students meet each of these General Education <br> Objectives. |
| :---: | :--- |
| - use analytical reasoning to |  |
| identify issues or problems and |  |
| evaluate evidence in order to |  |
| make informed decisions |  |$\quad$| Homework problems and exams with require them to solve |
| :--- |
| network engineering problems using calculations and |
| judgment. |

13. Course categories and attributes (for CUNYfirst):

14. Course objectives/expected student learning outcomes.

| Course objectives | Learning outcomes |
| :---: | :---: |


| - To understand object oriented programming and advanced C++ concepts | Students should: <br> - Be able to explain the difference between object oriented programming and procedural programming. <br> - Use C++ to build object-oriented programs that include objects in an inheritance hierarchy |
| :---: | :---: |
| - Take a problem and develop the structures to represent objects and the algorithms to perform operations. | Students should: <br> - Perform object oriented programming to develop solutions to problems demonstrating usage of control structures, modularity, I/O. and other standard language constructs. |
| - .Understand and demonstrate the concepts of objectoriented design, polymorphism, information hiding, and inheritance. | Students should: <br> - Demonstrate adeptness of object oriented programming in developing solutions to problems demonstrating usage of data abstraction, encapsulation, and inheritance. <br> - Demonstrate ability to implement one or more patterns involving realization of an abstract interface and utilization of polymorphism in the solution of problems which can take advantage of dynamic dispatching. |
| - Take a problem and develop the structures to represent objects and the algorithms to perform operations. | Students will be able to: <br> - Apply standards and principles to write truly readable code. <br> - Test a program and, if necessary, find mistakes in the program and correct them. |

15. Attach department course syllabus (see Recommended Syllabus template, Form 4):
16. Example texts/readings/bibliography/other materials required or recommended for the course (as applicable):
Object-Oriented Programming in C++ (4th Edition) 4th Edition
by Robert Lafore, ISBN-10: 0672323087, ISBN-13: 978-0672323089
17. Methods of Instruction (such as lecture, performance, web-enhanced, online, video, writing intensive, etc.):
This course will have $50 \%$ lecture and $50 \%$ laboratory. If the students are unable to finish the assigned lab work within the class time, they will need to visit the departmental open labs.
18. Methods by which student learning will be evaluated (describe the types of evaluation methods to be employed; note whether certain evaluation methods are required for all sections):

- One midterm examination
- One final cumulative examination
- Quizzes
- Projects
- Homework assignments

19. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:
This course is targeted to senior-level undergraduate students.
20. Faculty availability:

|  | Instructor 1 | Instructor 2 | Instructor 3 |
| ---: | :--- | :--- | :--- | :--- |
| Name <br> Degree: | Merlinda Drini | Steven Trowbridge | Joann Sun |
|  | Ph.D. EE CCNY | MA Comp Sci Queens Col | MS Comp Sci, NYIT |
| Years in Profession: | 15 |  |  |
| Years Teaching: | $\mathbf{7}$ | 15 | 15 |
|  |  | 5 | $\mathbf{1 0}$ |

21. Facilities and technology availability:

Existing ET facilities.
22. List of courses to be withdrawn, or replaced by this course, if any:

None
23. Enrollment limit and frequency the course is offered (each semester, once a year, or alternating years):
Each semester.
24. What changes in any programs will be necessitated or requested as a result of this course's additions/charges
None

## Glossary of Terms

Note: These definitions of terms are for the purposes of this assessment project only

| Entry-level course | A credit course with no pre-requisites other than passing placement <br> exams or required remediation; usually considered a first semester <br> course; this course may be a pre-requisite for mid-level courses |
| :--- | :--- |
| Mid-level course | A course which has at least one credit course as a pre-requisite; usually a <br> second or third semester course; this course may be a pre-requisite for <br> upper-level courses |
| Upper-level course | A course, usually taken in the third or fourth semester, which has several <br> credit course pre-requisites |
| (Student) Learning <br> objectives | An explicit statement of the skills and knowledge a student is expected to <br> learn and be able to demonstrate either in general education, in a <br> curriculum, or in a course |
| (Student) Learning <br> outcomes | Student behaviors, performance, or activities that demonstrate that <br> students are meeting or have met the learning objective(s) |
| General education | Desired student learning in general education skills and in the liberal arts <br> and sciences: communication, analytic reasoning and problem solving, |


| objectives | quantitative skills and mathematical reasoning, information management, <br> integration of knowledge, differentiation of values, development of <br> personal and collaborative skills, history, social sciences, mathematics <br> and sciences, the humanities and the arts |
| :--- | :--- |
| Curricular objectives | An explicit statement of the major points of learning that students must <br> achieve to complete a program of study; these include both general <br> education objectives and objectives specific to the curriculum |
| Course objectives | Major points of learning that students must achieve to complete a course; <br> course objectives include general education objectives, curricular <br> objectives, and objectives specific to the course |

1. A detailed course syllabi of pertinent courses [include a laboratory outline when applicable] [see Recommended Syllabus template, Attachment 7]:

| Week | Topics |
| :---: | :---: |
| 1 | Ch. 1 Introduction to Object Oriented Programming <br> - Characteristics of Object Oriented Language <br> - C++ and C <br> - The Unified Modelling Language (UML) |
| 2 | Ch. 2 Overview of C++ Programming <br> - Program Construction <br> - Output <br> - Directives <br> - Comments <br> - Variables <br> - Input <br> - Arithmetic Operations <br> - Library Functions |
| 3 | Ch. 3 Loops and Decisions <br> - Relational Operations <br> - Loops <br> - Decisions <br> - Logical Operations <br> - Precedence |
| 4 | Ch. 4 Structures <br> - Defining the Structure <br> - Accessing Structure Members <br> - Enumerations |
| 5 | Ch. 5 Functions <br> - Simple Functions <br> - Passing Arguments <br> - Returning Values <br> - Reference Arguments <br> - Overloaded Functions |


| 6 | Ch. 6 Objects and Classes <br> - A Simple Class <br> - C++ Objects as Physical Objects <br> - C++ Objects as Data Types <br> - Constructors <br> - Objects as Function Arguments <br> Exam 1 |
| :---: | :---: |
| 7 | Ch. 6 Objects and Classes cont. \& Ch. 7 Arrays and Strings <br> - Returning Objects from Classes <br> - Structures and Classes <br> - Classes, Objects, and Memory <br> - Introduction to Arrays <br> - Arrays as Class Member Data <br> - Arrays as Objects <br> - C-Strings <br> - The Standard C++ string Objects |
| 8 | Ch. 8 Operator Overloading <br> - Overloading Unary and Binary Operators <br> - Data Conversion <br> - UML Class Diagram |
| 9 | Ch. 9 Inheritance <br> - Derived Class and Base Class <br> - Derived Class Constructors <br> - Class Hierarchies <br> - Levels of Inheritance <br> - Multiple Inheritance |
| 10 | Ch. 10 Pointers <br> - Addresses and Pointers <br> - Pointers and Arrays <br> - Pointers and Functions <br> - Pointers and C-Type Strings <br> - Pointers to Objects <br> - Pointers to Pointers <br> - Memory Management |
| 11 | Ch. 12 Streams and Files <br> - Stream Classes <br> - Stream Errors |


|  | - Disk File I/O with Streams <br> - File Pointers <br> - Error Handling <br> - File I/O with Member Functions |
| :---: | :---: |
| 12 | Ch. 14 Templates and Exceptions <br> - Function Templates <br> - Class Templates <br> - Exceptions |
| 13 | Ch. 15 The Standard Template Library <br> - Introduction to the Standard Template Library STL <br> - Algorithms <br> - Sequence Containers <br> - Iterators <br> - Specialized Iterators <br> - Associative Containers |
| 14 | Ch. 16 Object Oriented Software Development <br> - Software Development Process <br> - Use Case Modeling <br> - The Programming Problem <br> - From Use Cases to Classes <br> - Writing the Code <br> - Interacting with the Program <br> - Final Thoughts |
| 15 | Final |

1. Department:

Engineering Technology
2. Course, prefix, number, \& title: ET-585 Computer Architecture
3. Pre-requisites (if any): - ET-575

Co-requisites (if any):
4. Hours (Class, recitation, laboratory, studio) \& Credits: 3 hours, 3 credits.
5. Date Approved by Department:
6. Date Submitted to Curriculum Committee:

| Month | Day | Year |
| :---: | :---: | :---: |
| 3 | 16 | 2016 |
| 3 | 26 | 2016 |

7. In order to avoid unnecessary delays or difficulties, please state if the proposal was discussed with other department chair(s) with similar interests.

*If yes, which department(s): Math \& Business
8. Course Description for college catalog:

The course covers the basic principles of computer organization, operation and performance. It also deals with embedded systems, peripheral devices, memory management, and processor family evolution patterns.
9. Rationale - why the course is needed or desired:

This course provides a strong foundation for students to understand modern computer system architecture and to apply these understandings and principles to future computer designs. It is structured around the three primary building blocks of general-purpose computing systems: processors, memories, and networks. It will prepare the students for jobs in the computer science and computer engineering industry and can act as a spring board to more advance level courses.
10. Curricula into which the course would be incorporated and the requirements it will satisfy:

Computer Science and Information Security (Required)
nternet and Information Technology (Elective)
Electronic Engineering Technology (Elective)
Computer Engineering Technology (Elective)
Telecommunications Technology (Elective)
11. Curricular objectives addressed by this course:
A. Demonstrate proficiency in factual knowledge and conceptual understanding required for transfer to the junior year in computer science, information technology or a related discipline.

B: Engineering Competence: Graduates will be competent technicians with problem solving and design skills, and have the ability to apply mathematics, science and modern engineering software to solve computer science and computer engineering technology problems.

C: Demonstrate an understanding of professional and ethical responsibility
12. General Education Objectives: Check those that will be assessed:

1. Communicate effectively through reading, writing, listening and speaking
2. Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions

3. Reason quantitatively and mathematically as required in their fields of interest and in everyday life
4. Use information management and technology skills effectively for academic research and lifelong learning
5. Integrate knowledge and skills in their program of study
6. Differentiate and make informed decisions about issues based on multiple value systems
7. Work collaboratively in diverse groups directed at accomplishing learning objectives
8. Use historical or social sciences perspectives to examine formation of ideas, human behavior, social institutions, or social processes
9. Employ concepts and methods of the natural and physical sciences to make informed judgments 10.Apply aesthetic and intellectual criteria in the evaluation or creation of works in the humanities or the arts

| General Education Objectives <br> addressed by this course: Select from <br> list. (There is no minimum required for <br> these objectives.) | Briefly describe activities in the course which help <br> students meet each of these General Education <br> Objectives. |
| :---: | :--- |
| use analytical reasoning to <br> identify issues or problems and <br> evaluate evidence in order to <br> make informed decisions | Homework problems and exams with require them to solve <br> network engineering problems using calculations and <br> judgment. |
| reason quantitatively and <br> mathematically as required in <br> their fields of interest and in <br> everyday life | Throughout the semester students will be applying <br> mathematics to real world computer problems, including <br> design problems, which often require not only calculation <br> but judgment as well. |
| e integrate knowledge and skills in |  |
| their program of study |  |$\quad$| During the course period, students implement top down |
| :--- |
| design methodologies using a high-level hardware |
| description language, develop hierarchical design structures |
| and employ systematic debugging to solve problems. They |
| will also be asked to document their processes as they |
| develop their designs. |

13. Course categories and attributes (for CUNYfirst):

*If yes, submit Common Core Course Submission Form \& Syllabus to Dr. A. Corradetti
14. Course objectives/expected student learning outcomes.

| Course objectives | Learning outcomes |
| :--- | :--- |


| - To understand the structure and operation of modern computer systems | Students should: <br> - Understand and identify the components, and their interaction, in a typical modern day processor. <br> - Describe the components of computer systems and their interrelationships |
| :---: | :---: |
| - To understand how high level language constructs, such as C, are implemented in a machine assembly language | Students should: <br> - Understand and write assembly language programs. <br> - Understand how compiler generates machine code for simple C programs |
| - Understand basic hardware concepts (digital circuits -- gates, number representation, combinational and sequential circuits) | Students will: <br> - Explain and use different numbering systems, data representations, and arithmetic and logical operations <br> - Implement different computer instruction sets |

15. Attach department course syllabus (see Recommended Syllabus template, Form 4):
16. Example texts/readings/bibliography/other materials required or recommended for the course (as applicable):
Introduction to Computing Systems: From bits \& gates to C \& beyond 2nd Edition by Yale Patt, Sanjay Patel
ISBN-13: 978-0072467505
ISBN-10: 0072467509
17. Methods of Instruction (such as lecture, performance, web-enhanced, online, video, writing intensive, etc.):
This course will have $75 \%$ lecture and $25 \%$ laboratory. If the students are unable to finish the assigned lab work within the class time, they will need to visit the departmental open labs.
18. Methods by which student learning will be evaluated (describe the types of evaluation methods to be employed; note whether certain evaluation methods are required for all sections):

- One midterm examination
- One final cumulative examination
- Quizzes
- Homework assignments

19. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:
This course is targeted to senior-level undergraduate students.
20. Faculty availability:

|  | Instructor 1 |  | Instructor 2 | Instructor 3 |
| ---: | :--- | :--- | :--- | :--- |
| $\begin{array}{rl}\text { Name } \\ \text { Degree: }\end{array}$ | Merlinda Drini | Belle Birchfield |  |  |$)$ Jeffery Schwartz

21. Facilities and technology availability:

Existing ET facilities.

## 22. List of courses to be withdrawn, or replaced by this course, if any:

None
23. Enrollment limit and frequency the course is offered (each semester, once a year, or alternating years):
Each semester.
24. What changes in any programs will be necessitated or requested as a result of this course's additions/charges
None

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| :--- | :--- |
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| Upper-level course | A course, usually taken in the third or fourth semester, which has several <br> credit course pre-requisites |
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| (Student) Learning <br> outcomes | Student behaviors, performance, or activities that demonstrate that <br> students are meeting or have met the learning objective(s) |
| General education <br> objectives | Desired student learning in general education skills and in the liberal arts <br> and sciences: communication, analytic reasoning and problem solving, <br> quantitative skills and mathematical reasoning, information management, <br> integration of knowledge, differentiation of values, development of <br> personal and collaborative skills, history, social sciences, mathematics <br> and sciences, the humanities and the arts |
| Curricular objectives | An explicit statement of the major points of learning that students must <br> achieve to complete a program of study; these include both general <br> education objectives and objectives specific to the curriculum |
| Course objectives | Major points of learning that students must achieve to complete a course; <br> course objectives include general education objectives, curricular <br> objectives, and objectives specific to the course |

2. A detailed course syllabi of pertinent courses [include a laboratory outline when applicable] [see Recommended Syllabus template, Attachment 7]:

| Week | Topics |
| :---: | :---: |
| 1 | Ch. 1 Introduction to Computer System <br> - Computers as universal computational devices <br> - How do we get the electrons to do the work? |
| 2 | Ch. 2 Bits, Data Types, and Operations <br> - Bits and data types <br> - Integer data types <br> - 2's Complement Integers <br> - Binary-Decimal conversion <br> - Decimal-Binary conversion |
| 3 | Ch. 2 Bits, Data Types, and Operations cont. <br> - Operation on bits (Arithmetic) <br> - Operation on bits (Logical Operations) <br> - Other data representation |
| 4 | Ch. 3 Digital Logic Structures <br> - The transistor <br> - Logic Gates <br> - Combinational Logic Circuits <br> - Basic Storage Elements <br> - The Concept of Memory <br> - Sequential Logic Circuits |
| 5 | Ch. 4 The von Neumann Model \& Ch5. LC3 <br> - Basic Components <br> - Instruction Processing <br> - Changing the Sequence of Execution <br> - Stopping the Computer <br> - Operate, Data Movement, Control Instructions |
| 6 | Ch. 6 Programming \& Ch. 7 Assembly Language Programming <br> - Problem Solving <br> - An Assembly Language Program <br> - The Assembly Process <br> - Beyond the Assembly of a Single Assembly Language Program <br> Exam 1 |
| 7 | Ch. 8 Overview of I/O |


|  | - I/O Basics <br> - Input from the Keyboard <br> - Output to the Monitor <br> - Interrupt Driven I/O <br> - Implementation of Memory-Mapped I/O |
| :---: | :---: |
| 8 | Ch. 9 TRAP Routines and Subroutines <br> - Introduction <br> - TRAP Mechanism, Instruction <br> - TRAP Routines <br> - Subroutines |
| 9 | Ch. 10 The Basic Structure of the Stack <br> - Introduction <br> - Interrupt-Driven I/O <br> - Arithmetic Using a Stack <br> - Data Type Conversion |
| 10 | Ch. 11 Program Execution in C <br> - Translating High-Level Language <br> - Interpretation <br> - Compilation <br> - The C Compiler |
| 11 | Ch. 15 Testing and Debugging <br> - Types of Errors <br> - Testing <br> - Debugging <br> - Programming for Correctness |
| 12 | Ch. 16 Pointers and Arrays \& Ch. 17 Recursion <br> - Pointers <br> - Arrays <br> - Recursion <br> - Fibonacci Numbers <br> - Binary Search <br> - Integer to ASCII |
| 13 | Ch. 18 I/O in C <br> - The C Library <br> - I/O, One Character at a Time <br> - Formatted I/O <br> - I/O from Files |


| 14 | Ch. 19 Data Structures <br> - Structures <br> - Arrays of Structures <br> - Dynamic Memory Allocation <br> - Linked Lists <br> - Summary |
| :---: | :---: |
| 15 | Final |

## 6. Discontinuation of a Concentration in a Program (Management - Real Estate-Insurance)

Concentration of the AAS in Management program
Program Code: 01525 Hegis Code: 5004
Departmental approval 11-04-2015
Effective Date for Discontinuation/Deletion: 08-25-2016

## 7. Attachment: General Education Task Force Report

The committee discussed the General Education Assessment Task Force Report to the Academic Senate. The committee unanimously issues the following statement:
"With regard to the Action Plan proposed for the General Education Task Force for the coming academic year 2016-2017, members of the Committee on Curriculum would like to express concerns regarding Part B, Item No. 5, 'Propose that discipline-specific outcomes, especially \#8 (social sciences and history), \#9 (science), and \#10 (arts and humanities) be dropped as general education outcomes; they can be better assessed as part of academic program review.' We believe that the elimination of discipline-specific outcomes would not be desirable, as discipline-specific learning outcomes constitute a valuable--indeed, critical-- component of general education."


[^0]:    ${ }^{1}$ According to the U.S. Bureau of Labor Statistics, growth in information security jobs is projected at $37 \%$ from 2012-2022, a rate two and one-half times faster than the average for all occupations: http://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm.
    ${ }^{2}$ See http://www.labor.ny.gov/stats/Isproj.shtm for 2012-2022 growth projections and http://burning-glass.com/wpcontent/uploads/Cybersecurity_Jobs_Report_2015.pdf for industry-specific cybersecurity employment increases over the last 5 years. Cybersecurity workers earn 2-3 times more than the national average for similarly educated employees.
    ${ }^{3}$ http://www.washingtonpost.com/news/capital-business/wp/2014/03/05/evidence-that-the-d-c-area-really-is-a-hotbed-for-cybersecurity-jobs/and http://www.burning-glass.com/research/cybersecurity/; cybersecurity postings have grown 74\% from 2007-2013 nationally.

[^1]:    ${ }^{4}$ John Jay students are among the poorest of senior college students at CUNY according to the most recent IPEDS' Pell eligibility reporting data. CJA community college students rank in the bottom half of all CUNY college students, with one exception, using the same criterion.

[^2]:    *Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements.
    All students must complete two (2) WI designated classes to fulfill degree requirements.
    **Elective: ET 725 Computer Network Security strongly recommended.

