QUEENSBOROUGH COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
COMMITTEE on CURRICULUM
of the Academic Senate


From: P. Pecorino

Date: April 29, 2013

Re: The Curriculum Committee meeting on April 30, 2013 at 2pm in H-345.

AGENDA

1.) Approval of Agenda

2.) Approval of Minutes of April 23, 2013

3.) Chairperson’s Report—
Minutes of 2-19-13
The committee approved curriculum changes in AS degree in Engineering Science and LS 1(Liberal Arts and Sciences). Health sciences has no changes in the program

Sent to the QCC Academic Senate meeting for March 2013

5.) DEPARTMENTS of SCIENCES and ENGINEERING TECHNOLOGY

AS Degree Program in Engineering
AS Degree program in Science
AS Health Sciences

4.) Response of President Diane Bova Call
   • On Governance
   • On STEM Courses
   • Review of latest revisions

5.) DEPARTMENT of ART and DESIGN

New Art History Concentration

Rationale: Art and Design Concentration" listed in the catalog. Amongst the choices are sufficient art history courses, which when elected could form a concentration of 20-26 credits. We propose to aggregate them into a separate option, and call it an "Art History Concentration." We offer a broad range of art history courses, but students may not realize that they can create a concentration in them. We are not seeking to modify the degree itself so much as create a clear option for those interested in Art History as a path of study.

6.) DEPARTMENT of HEALTH, PHYSICAL EDUCATION and DANCE

A. NEW COURSES:

PE 826 Concepts of Personal Training I  Three hours
Prerequisites: HE 102, PE 540, or Instructor Permission

Description:
This course is part of a sequence that will introduce the student to the personal training profession and an overview of the skills and models commonly utilized by members of the profession. It will provide a strong foundation to sit for various Personal Training Certification exams. The course will cover anatomy, physiology and biomechanics as it relates to personal training. In addition, Nutrition, body composition, weight control and assessment will be covered.

Rationale: The class will be required of the Personal Training Concentration in the Department of Health Physical Education and Dance.

According to the U.S. Bureau of Labor Statistics, "Employment of fitness trainers and instructors is expected to grow by 24 percent from 2010 to 2020, faster than the average for all occupations. As businesses and insurance organizations continue to recognize the benefits of health and fitness programs for their employees, incentives to join gyms or other fitness facilities will increase the need for workers in these areas."

Increasingly, health clubs, hospitals, YMCAs, and the similar organizations are seeking trainers with degrees or concentrations in personal training rather than just certification.

Personal Training I will be offered in the fall semester and Personal Training II will be offered in spring.

NEW COURSE:
PE 827 Concepts of Personal Training II  There Credits Three hours
Prerequisites: PE 826 Personal Training I or Instructor Permission

Description:
This course is a continuation of PE 826, Personal Training I. There is an emphasis on advanced, specific training principles. Students will learn to design optimal exercise programs, workouts and/or training schedules that will improve both physical fitness and athletic performance. Students will examine the design and delivery of cardiovascular fitness programs, anaerobic training programs, and programs for special populations.

Rationale: The class will be required of the Personal Training Concentration in the Department of Health Physical Education and Dance.

According to the U.S. Bureau of Labor Statistics, “Employment of fitness trainers and instructors is expected to grow by 24 percent from 2010 to 2020, faster than the average for all occupations. As businesses and insurance organizations continue to recognize the benefits of health and fitness programs for their employees, incentives to join gyms or other fitness facilities will increase the need for workers in these areas.”

Increasingly, health clubs, hospitals, YMCAs, and the similar organizations are seeking trainers with degrees or concentrations in personal training rather than just certification.

Personal Training I will be offered in the fall semester and Personal Training II will be offered in spring.

B. NEW CONCENTRATION in AA Degree Program LA1
<table>
<thead>
<tr>
<th>Current</th>
<th>Credits</th>
<th>Revised</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art (AR 300 series); or Dance (PE-711); or Music (MU100 series); or Speech Communication and Theatre Arts (SP-471, 472, or TH-111)</td>
<td>3</td>
<td>PATHWAYS COMMON CORE REQUIREMENTS</td>
<td>6</td>
</tr>
<tr>
<td>English: EN-101 and 102, and one course selected from the EN-200, 300, or 400 series</td>
<td>9</td>
<td>Required Core: I.A English Composition EN-101, 102 English Composition I, II</td>
<td>3(-4)</td>
</tr>
<tr>
<td>Foreign Language Two sequential language courses are required (level and sequence of courses are determined by students' previous knowledge and/or performance on departmental placement exam).*</td>
<td>6-8</td>
<td>Required Core: I.B Mathematical and Quantitative Reasoning Select one course (see note in Major requirements)</td>
<td>3(-4)</td>
</tr>
<tr>
<td>Mathematics Students may select one of the following: MA-120♣, 301, 303, 315, 321, 336, 440, 441, 442 (♣ MA-120 fulfills the mathematics requirement only for the A.A. in Liberal Arts &amp; Science and for the A.S. in Visual and Performing Arts.)</td>
<td>3-4</td>
<td>Flexible Core: I.IA World Cultures and Global Issues Select one course</td>
<td>3</td>
</tr>
<tr>
<td>Laboratory Science To be chosen in accordance with laboratory science requirements listed under Understanding Program Requirements. Elective in Mathematics (any course in the list above), Natural Science (any non-laboratory or laboratory science course — see list below of non-laboratory science courses), Computer Literacy (CS-100 or ET-820), or Computer Science (CS-101)</td>
<td>4-4 1/2</td>
<td>Flexible Core: I.IB U.S. Experience in Its Diversity Select one course</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>Flexible Core: I.II.C Creative Expression Select one course</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>Flexible Core: I.III.D Individual and Society Select one course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flexible Core: I.III.E Scientific World Select one course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flexible Core: I.IV.A, B, C, D, or E Select one course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub-total</td>
<td>30(-32)</td>
</tr>
<tr>
<td>Health Education (HE-101 or 102)</td>
<td>1-2</td>
<td>(Note: Credits beyond 30 in the Common Core will be counted toward the Liberal Arts &amp; Sciences component of the Major.)</td>
<td></td>
</tr>
<tr>
<td>History Hi-110, 111, or 112, and one additional course in the HI-100 series</td>
<td>6</td>
<td>***CONCENTRATION PROGRAM REQUIREMENTS – Liberal Arts and Sciences</td>
<td></td>
</tr>
<tr>
<td>Two courses in Physical Education or Dance from the PE-400, 500, or 600 series</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>Social Sciences</td>
<td>6</td>
<td></td>
<td></td>
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<tr>
<td>Speech Communication: SP-211</td>
<td>3</td>
<td></td>
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<tr>
<td>Liberal Arts and Sciences elective(s) **to make up a minimum of 48 Liberal Arts and Sciences credits</td>
<td>0-5</td>
<td></td>
<td></td>
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<tr>
<td>Sub-total</td>
<td>51-52</td>
<td></td>
<td></td>
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<tr>
<td>ELECTIVES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free electives</td>
<td>8-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits Required</td>
<td>60</td>
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</tbody>
</table>

* Students with prior study in languages not taught at the College should consult with the chair of the Department of Foreign Languages and Literatures for evaluation and choose another Foreign Language offered by the department.

** See section on Understanding Program Requirements.

Non-laboratory Science Electives
Geology 100, Geology 105, Geology 125 Biology 110, Biology 120, Biology 170I Chemistry 101, Chemistry 103‡, Chemistry 110‡, Chemistry 120‡, Chemistry 130‡ Physics 103t, Physics 120‡
‡ Courses with the option of a laboratory.

<table>
<thead>
<tr>
<th>PATHWAYS COMMON CORE REQUIREMENTS</th>
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<tbody>
<tr>
<td>Required Core: I.A English Composition EN-101, 102 English Composition I, II</td>
</tr>
<tr>
<td>Required Core: I.B Mathematical and Quantitative Reasoning Select one course (see note in Major requirements)</td>
</tr>
<tr>
<td>Required Core: I.C Life and Physical Sciences Select one course (see note in Major requirements)</td>
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<td>Flexible Core: I.IA World Cultures and Global Issues Select one course</td>
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<td>Flexible Core: I.IV.A, B, C, D, or E Select one course</td>
</tr>
<tr>
<td>Sub-total</td>
</tr>
</tbody>
</table>

***CONCENTRATION PROGRAM REQUIREMENTS – Liberal Arts and Sciences

Personal Training – To complete a concentration in Personal Training, students must complete the major requirements below:

- Two Foreign Language courses (two sequential courses are required, level and sequence to be determined by department placement)
- HI-110 or HI-111 or HI-112 (if already taken in common core, one course from HI-100 series is required; if two History courses have been taken in common core, one additional course from Anthropology, Economics, Sociology, Political Science, Psychology is required)
- SP-211 if already taken in common core, one course from HI-100 series is required; if two History courses have been taken in common core, one additional course from PSYC-100 series is required)
- One English course from EN-200, EN-300, or EN-400 series
- One science lab. course (students who take STEM variant in common core have satisfied this requirement)

<table>
<thead>
<tr>
<th>ADDITIONAL CONCENTRATION REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE-101 or 102</td>
</tr>
</tbody>
</table>
Two courses in Physical Education PE 400 and 500 series, series (Recommended : PE 540 or PE-416)  

Sub Total  

3-4  

*****CONCENTRATION Personal Training  

PE 826 Concepts of Personal Training I (3)  
PE 827 Concepts of Personal Training II (3)  
Select from:  
PE 540 Introduction to Physical Fitness (1)  
PE 825 Introduction to Exercise Science (3)  

(*PE 416 Weight Lifting if HE101 is taken instead of HE102)  

Sub Total  

8-9  

Total credits for the degree program:  

60

7.) DEPARTMENT of ENGINEERING TECHNOLOGY

New Course: ET-842 Energy Production and Conservation for a Sustainable World 1 credit, 3 lab hours  
Co-requisite ET-841  
Description:  
This course provides students with the opportunity to relate their daily energy use to various renewable and non-renewable energy sources. Students will also participate in hands-on laboratory experiments that demonstrate how energy can be controlled and conserved in order to reduce harmful carbon emissions and costs.

Rationale:  
This course is necessitated due the Pathway revision of the Liberal Arts and other Curriculums which now includes a 1 credit laboratory component. Alternative and Renewable Energy and Sustainability are extremely important topics for students. The course is one of the most relevant science core courses for students since much of the material and lab experiments are based upon the study of student surroundings and current life habits. This course explains and measures different types of energy sources. Through this science course they will gain a better understanding and appreciation of new conservation imperatives and new technologies to help them navigate a more successful life.

Course Revision: ET-375 Robotics  
From: ET-375 Introduction to Robotics  
Prerequisite: [ET-510 or ET 540 or ET-110] or permission of the [ECET] Department  
To: ET-375 Introduction to Robotics  
Prerequisite: ET-110 and either ET-510 or ET-540, or permission of the ET Department  
Rationale: In order to approach the topics at an appropriate level for most students, it is advisable for students to have taken both a course in introductory circuits and digital circuits. The department name has changed to Engineering Technology (ET).

Course Revisions:  

MT 122, 125, 219, 293, 341,453, 484,486,488,489,490,492,500,513,514,900,991,992,993
The Engineering Technology Department at its March 13th meeting unanimously approved the attached submissions to the Academic Senate Curriculum Committee. After the merger of the ECET and MTDD Departments it became apparent that many of the catalog course descriptions were not accurate and that many of the prerequisites needed revision. The attached changes address these weaknesses.

**Course Revisions:** MT 122, 125, 219, 293, 341,453,
484,486,488,489,490,492,500,513,514,900,991,992,993

**Rationale:**
The Engineering Technology Department at its March 13th meeting unanimously approved the attached submissions to the Academic Senate Curriculum Committee. After the merger of the ECET and MTDD Departments it became apparent that many of the catalog course descriptions were not accurate and that many of the prerequisites needed revision. These changes address these weaknesses.

**From:** MT-122 Manufacturing Processes
2 class hours 3 laboratory hours 3 credits

[Co-requisite: MA-010, or satisfactory score on the Mathematics Placement Test, or permission of the Department.]
Production techniques in manufacturing, including introduction to materials, gaging, machining, welding, casting and molding, forming and finishing processes. Laboratory practice in the use of hand tools, machine tools, and precision measuring instruments.

**To:** MT-122 Manufacturing Processes
2 class hours 3 laboratory hours 3 credits

Production techniques in manufacturing, including introduction to materials, gaging, machining, welding, casting and molding, forming and finishing processes. Laboratory practice in the use of hand tools, machine tools, and precision measuring instruments.

**Rationale:**
The co-requisite is written in error. All necessary math skills are covered as part of the lecture portion of the class, making the co-requisite unnecessary.

**From:** MT-125 Metallurgy and Materials Laboratory
3 laboratory hours 1 credit

Co-requisite: MT-124
The laboratory complement to MT-124. Students perform “hands-on” experiments that emphasize the major topics discussed in MT-124. [Experiments include hardness of materials, concrete slump test, metallographical methods in the study of the recrystallization of alpha brass, solidification of lead-tin alloys, the metallography of plain carbon steels, the Jominy bar test and non-destructive inspection techniques]. Students will be required to produce formal laboratory reports [for selected experiments] and deliver oral presentations.

**To:** MT-125 Metallurgy and Materials Laboratory
3 laboratory hours 1 credit

Co-requisite: MT-124
The laboratory complement to MT-124. Students perform “hands-on” experiments that emphasize the major topics discussed in MT-124. Students will be required to produce formal laboratory reports and deliver oral presentations.

**Rationale:**
Experiments in the Metallurgy and Materials Lab are continually being updated and improved. A specific list of experiments is generally out of date. Further, students write formal reports for all
experiments, not selected experiments. Finally, there should be no surprise when the oral presentations are assigned.

From: MT-219 Surveying and Layouts
2 class hours 3 laboratory hours 3 credits
[Co-requisite: MA-010, or satisfactory score on the Mathematics Placement Test, or permission of the Department]

To: MT-219 Surveying and Layouts
2 class hours 3 laboratory hours 3 credits

Rationale:
The co-requisite is written in error. All necessary math skills are covered as part of the lecture portion of the class, making the co-requisite unnecessary.

From: MT-293 Parametric Computer Aided Design [Drafting]
1 lecture hour, 2 recitation hours 3 laboratory hours 3 credits
[Co-requisite: MT-111]
Introduction to the use of computer hardware and software for Mechanical Design Drafting. Applications of Parametric Computer Aided Design Drafting for increasing productivity. Concepts, commands and parameters involved in CAD systems. Students generate working drawings by interacting with the computer using graphics display terminals, parametric software, mouse and plotter. Use of mechanical design software to build parametric models of parts and assemblies. Students create parts using techniques such as extrude, revolve and sweep. Emphasis is on the concepts of design intent and scalability. Assemblies are created using appropriate geometric constraints. Theory of engineering graphics is covered so that appropriate working drawings can be created from the parametric models. Introduction to the theory and practice of basic engineering drawing and blueprint reading. Multi-view projection including sectional and auxiliary views. Principles of dimensioning.

To: MT-293 Parametric Computer Aided Design
1 lecture hour, 2 recitation hours 3 laboratory hours 3 credits
Use of mechanical design software to build parametric models of parts and assemblies. Students create parts using techniques such as extrude, revolve and sweep. Emphasis is on the concepts of design intent and scalability. Assemblies are created using appropriate geometric constraints. Theory of engineering graphics is covered so that appropriate working drawings can be created from the parametric models. Introduction to the theory and practice of basic engineering drawing and blueprint reading. Multi-view projection including sectional and auxiliary views. Principles of dimensioning.

Rationale:
The course name is shortened to emphasize the design nature of the course. The co-requisite is being deleted and the requisite knowledge from MT-111 being added to this course. This is in preparation for the possibility of transitioning to a completed computer based curriculum. The course description has
been updated to provide more specific information for those students who transfer, maximizing the potential for full transfer credit.

From: MT-341 Applied Mechanics
[2 class hours 2 recitation hours] 3 class hours 3 credits
Pre-requisite: MA-114 with a grade of C or better

To: MT-341 Applied Mechanics
3 class hours 3 credits
Pre-requisite: MA-114 with a grade of C or better
Vector treatment of the static equilibrium of particles and rigid bodies. Equivalent force and couple systems. Distributed force systems. Application of basic analytical techniques to mechanical devices and structures. Centroids, center of gravity, moments of inertia. Friction and impending motion.

Rationale:
Improved coordination between the Engineering Technology department, the Math Center and the Tutoring center has made recitation hours unnecessary. The course description has been updated to provide more specific information for those students who transfer, maximizing the potential for full transfer credit.

From: MT-453 Piping Systems
[2 class hours 4 laboratory hours] 3 class hours 3 credits
Prerequisite: MT-488
Design and layout of piping systems and related equipment for heat power, heating, air conditioning, and petrochemical industries. National piping and pressure vessel codes utilized in conjunction with manufacturers’ catalog data and piping handbook. Use of three-dimensional computer-aided design drafting system for piping software is introduced, and associated equipment layout.

To: MT-453 Piping Systems
3 class hours 3 credits
Prerequisite: MT-488
Design and layout of piping systems and related equipment for heat power, heating, air conditioning, and petrochemical industries. National piping and pressure vessel codes utilized in conjunction with manufacturers’ catalog data and piping handbook. Use of piping software is introduced.

Rationale:
To remain current with industry trends, the emphasis of the course is being shifted more towards design aspects and less towards drafting aspects. Design principles are explained during lecture, and as such the number of lecture hours has been increased. Practical design examples are assigned as homework, making the lab component of the course redundant.

From: MT-484 Construction Methods [with CAD Applications]
1 lecture hour 2 recitation hours 3 laboratory hours 3 credits
Prerequisite: [MT-111 and] MT-488.
Construction elements and materials used in the building industry. Types of framing and assembly systems for commercial buildings. Manual and CADD work on preparation of working drawings to
code, with an emphasis on comprehension of the total building process. This course assists in the production of a design studio portfolio.

To: MT-484 Construction Methods
1 lecture hour 2 recitation hours 3 laboratory hours 3 credits
Prerequisite: MT-488.
Construction elements and materials used in the building industry. Types of framing and assembly systems for commercial buildings. Preparation of working drawings to code, with an emphasis on comprehension of the total building process. This course assists in the production of a design studio portfolio.

Rationale:
The course name is modified because “CAD Applications” is superfluous. The pre-requisites have been adjusted in preparation for the transition to a completely computer based curriculum.

3 class hours 3 laboratory hours 3 credits
Pre-requisite: [MT-488, Co-requisite: MT-484 or Permission of the Department] MT-481
In depth use of AutoDesk Architectural Desktop software for the creation of architectural designs, professional prints and presentation drawings. Topics include: using the double wall and wall break tools in floor plans, inserting doors, windows and other elements from the software library, extruding designs into 3D, implementing the 3D roof generator, stair generator and producing wall sections, building sections and perspective views. A continuation of the design concepts begun in MT-481. Students create advanced architectural designs, professional prints and presentation drawings. Use of advanced software is introduced. Design problems are structured so as to necessitate the resolution of multiple issues simultaneously and interdependently. This course assists in the production of a design studio portfolio.

To: MT-486 Architectural Design II
2 class hours 3 laboratory hours 3 credits
Pre-requisite: MT-481
A continuation of the design concepts begun in MT-481. Students create advanced architectural designs, professional prints and presentation drawings. Use of advanced software is introduced. Design problems are structured so as to necessitate the resolution of multiple issues simultaneously and interdependently. This course assists in the production of a design studio portfolio.

Rationale:
This course is being re-branded to emphasize the design content rather than the particular tools being used. This will benefit transfer students, who are more likely to get full credit from all schools considered. The course name is modified to emphasize that change and to recognize that there is a complementary course. Since the course is more of a hands-on nature where the instructor talks with each student individually, the number of lecture hours has been reduced. 3 credits is more appropriate for the course content than four.

From: MT-488 Computer-Aided Design [Drafting (CADD)] I
1 class hour 2 recitation hours 3 laboratory hours 3 credits
[Corequisite: MT-111 or permission of the Dept.]
Introduction to the use of computer hardware and software for design drafting. Applications of computer-aided design drafting for increasing productivity. Concepts, commands, and parameters involved in CADD systems. Students generate working drawings by interacting with the computer using graphics display terminals, light pen, tablet digitizer, function keyboard, and plotter. A general overview of how CAD operates in a modern design environment. Introduction to major commercial CAD
software. Production of two dimensional images of design concepts. Problems chosen to develop recognition and skill in such areas as orthographics, auxiliaries, sections, intersections and developments. Introduction to the theory and practice of basic engineering drawing and blueprint reading. Multi-view projection including sectional and auxiliary views. Principles of dimensioning.

To: MT-488 Computer Aided Design I
1 class hour 2 recitation hours 3 laboratory hours 3 credits
A general overview of how CAD operates in a modern design environment. Introduction to major commercial CAD software. Production of two dimensional images of design concepts. Introduction to the theory and practice of basic engineering drawing and blueprint reading. Multi-view projection including sectional and auxiliary views. Principles of dimensioning.

Rationale:
The course name is shortened to emphasize the design nature of the course. The co-requisite is being deleted and the requisite knowledge from MT-111 being added to this course. This is in preparation for the possibility of transitioning to a completed computer based curriculum. The course description has been updated to provide more specific information for those students who transfer, maximizing the potential for full transfer credit.

From: MT-489 [Advanced] Computer Aided Design [Drafting (ADCADD)] II
1 class hour 2 recitation hours 3 laboratory hours 3 credits
Prerequisite: MT-488.
Further development of CAD principles and concepts, applications with respect to three-dimensional views; orthographic and isometric views, rotation and translation of parts in space. Generation of surface forms and intersection of surfaces. Construction of three-dimensional assembly drawings. Design problems chosen from mechanical and architectural applications.

To: MT-489 Computer Aided Design II
1 class hour 2 recitation hours 3 laboratory hours 3 credits
Prerequisite: MT-488.
Further development of CAD principles and concepts. Design problems chosen from mechanical and architectural applications.

Rationale:
The course name is shortened to emphasize the design nature of the course. The course description has been updated to provide more specific information for those students who transfer, maximizing the potential for full transfer credit.

3 class hours [3 laboratory hours] [4] 3 credits
[Co-requisite: MT-486 and MT-500 or Permission of the Department]
Pre-requisite: MT-488
Practical application of AutoDesk VIZ advanced architectural software to the generation of 3D models, rendering and the creation of animated visuals for architectural designs. Topics include: creating designs in 3D space [using tools such as the 2D shaper and 3D lofter], editing 3D designs, viewing objects in 3D space, setting lights, cameras, applying color and materials to surfaces, background color and objects; rendering creation of scenes tracking animation and walk-throughs. This course assists in the production of a design studio portfolio.

To: MT-490 Advanced Architectural Modeling
3 class hours 3 credits
Pre-requisite: MT-488
Practical application of advanced architectural software to the generation of 3D models, rendering and the creation of animated visuals for architectural designs. Topics include: creating designs in 3D space, editing 3D designs, viewing objects in 3D space, setting lights, cameras, applying color and materials to surfaces, background color and objects; rendering creation of scenes tracking animation and walkthroughs. This course assists in the production of a design studio portfolio.

Rationale:

This course is being re-branded to emphasize the design content rather than the particular tools being used. This will benefit transfer students, who are more likely to get full credit from all schools considered. The course name is modified to emphasize that change. Design principles are explained during lecture. Practical design examples are assigned as homework, making the lab component of the course redundant.

From: MT 492 Introduction to Virtual Automation

1 class hour 3 Laboratory hours 2 credits

Prerequisites: MT-161
Pre- or Co- requisite: Either MT-293 or MT-369 Offered in Spring
A study of the principles and practices involved in conceiving, designing, producing and measuring products quickly and effectively, using the latest RP (Rapid Prototyping) methods and CMM (Coordinate Measuring Machines) technology. Students will learn Stereolithography Technology on a Z Corporation’s 3D printer. Students will be instructed in the latest techniques in quality control and operate a Zeiss CNC controlled CMM.

To: MT 492 Introduction to Virtual Automation

1 class hour 3 Laboratory hours 2 credits

Pre- or Co- requisite: Either MT-293 or MT-369 Offered in Spring
A study of the principles and practices involved in conceiving, designing, producing and measuring products quickly and effectively, using the latest RP (Rapid Prototyping) methods and CMM (Coordinate Measuring Machines) technology. Students will learn Stereolithography Technology on a Z Corporation’s 3D printer. Students will be instructed in the latest techniques in quality control and operate a Zeiss CNC controlled CMM.

Rationale:

Pre-requisite is listed in error.

From: MT-500 Principles of CAD Management

3 class hours 3 credits

Co-requisite: MT-486 and MT-490 or Permission of the Department
Pre-requisite: MT-488 or MT-293
A study of the computer management skills needed by the [architectural] CAD professional, [working in today’s shared network environment.] Topics include: templates, managing access to software and files, mapping network drives, organizing jobs and folders, [managing via the AutoDesk design center.] profiles, custom icon and command creation. [, installation and maintenance of AutoDesk software packages, installing plotters.]

To: MT-500 Principles of CAD Management

3 class hours 3 credits

Pre-requisite: MT-488 or MT-293
A study of the computer management skills needed by the CAD professional. Topics include: templates, managing access to software and files, mapping network drives, organizing jobs and folders, profiles, custom icon and command creation.

Rationale:
The course description is being updated to benefit transfer students, who are more likely to get full credit from all schools considered. A lab component is not necessary for a course such as this. The number of credits has been adjusted to a more appropriate number.

From: MT-513 Thermo-Fluid Systems
2 class hours 2 recitation hours 3 credits
Offered in [Fall] Spring.
Prerequisites: [MT-341, MA-128 or MA-441] MT-345 with a grade of C or better
Corequisites: [MT-368,] MT-514
An integrated approach to thermodynamics and fluid mechanics principles, emphasizing the ways in which different types of energy are converted from one form to another. [The associated fluid machinery and equipment required to convey and utilize energy.] Topics include thermo fluid properties, work and heat transfer in a thermal system, properties of fluids, fluid statics, flow of real incompressible fluids, laws of thermodynamics, steady flow process, pipe flow, impulse momentum principle, introduction to thermoelectric, thermionic converters and electrochemical fuel cells.

To: MT-513 Thermo-Fluid Systems
2 class hours 2 recitation hours 3 credits
Offered in Spring.
Prerequisites: MT-345 with a grade of C or better
Corequisites: MT-514
An integrated approach to thermodynamics and fluid mechanics principles, emphasizing the ways in which different types of energy are converted from one form to another. Topics include thermo fluid properties, work and heat transfer in a thermal system, properties of fluids, fluid statics, flow of real incompressible fluids, laws of thermodynamics, steady flow process, pipe flow.

Rationale:
Pre-requisites were listed in error. Not all those courses are required background knowledge. Co-requisite listed in error a course that does not exist. Course description updated to more accurately reflect the course offering. Semester offering listed in error.

From: MT-514 Thermo-Fluid Systems Laboratory
3 laboratory hours 1 credit Offered in [Fall] Spring.
Corequisite: MT-513
Laboratory practice in the use and calibration of instruments. Engineering tests of energy systems, fluid machinery, heat transfer, heat balances, digital data acquisition.

To: MT-514 Thermo-Fluid Systems Laboratory
3 laboratory hours 1 credit Offered in Spring.
Corequisite: MT-513
Laboratory practice in the use and calibration of instruments. Engineering tests of energy systems, fluid machinery, heat transfer, heat balances, digital data acquisition.

Rationale:
Semester offering listed in error.

1 class hour plus appropriate work experience
3 credits Offered as needed.
Open only to matriculated students who have completed at least 12 pertinent credits in [the Mechanical and Engineering Technology or the Computerized Architectural and Industrial Design] related curricula

Students enrolled in the cooperative education experience are required to complete a project. Projects are formulated by the student and instructor and may include:

- employment experience or internship
- research on a topic or development of a design

Students participate in a weekly seminar and complete an additional minimum of 90 hours per semester. Students participating in internships submit complete written reports, related to the work experience. Students who complete research or design projects submit a written report containing a complete set of design prints and project descriptions. Students receive a grade or pass or fail.

To: MT-900 Cooperative Education/Design Projects in Engineering Technology
1 class hour plus appropriate work experience
3 credits Offered as needed.

Open only to matriculated students who have completed at least 12 pertinent credits in an Engineering Technology related curricula

Students enrolled in the cooperative education experience are required to complete a project. Projects are formulated by the student and instructor and may include:

- employment experience or internship
- research on a topic or development of a design

Students participate in a weekly seminar and complete an additional minimum of 90 hours per semester. Students participating in internships submit complete written reports, related to the work experience. Students who complete research or design projects submit a written report containing a complete set of design prints and project descriptions. Students receive a grade or pass or fail.

Rationale:
The course title and description have been updated to reflect the ET/MT merger and provide consistency between similar courses in each curriculum.

From: ET-991, 992, 993 Cooperative Education in [Electrical and Computer] Engineering Technology
1 class hour plus appropriate work experience for each credit; 1 credit each course

Open only to matriculated students who have achieved a minimum grade-point average of 2.0 in their major field of study; have completed at least 12 pertinent credits in an [the Electronic or Computer] Engineering Technology related curricula; and are recommended and approved by the chairperson of the Department and the coordinator of Cooperative Education.

The cooperative education experience in [Electronic or Computer] Engineering Technology includes employment in a field experience which supplements classroom theory and laboratory instruction with related on-the-job professional training. Students are placed in a work situation for 45 hours, participate in a monthly seminar, and submit a term project related to the work experience. A written evaluation is provided by the employer. Students receive a grade of Pass or Fail.

To: ET-991, 992, 993 Cooperative Education in Engineering Technology
1 class hour plus appropriate work experience for each credit; 1 credit each course

Open only to matriculated students who have achieved a minimum grade-point average of 2.0 in their major field of study; have completed at least 12 pertinent credits in an Engineering Technology related curricula; and are recommended and approved by the chairperson of the Department and the coordinator of Cooperative Education.

The cooperative education experience in Engineering Technology includes employment in a field experience which supplements classroom theory and laboratory instruction with related on-the-job professional training. Students are placed in a work situation for 45 hours, participate in a monthly
seminar, and submit a term project related to the work experience. A written evaluation is provided by
the employer. Students receive a grade of Pass or Fail.

Rationale:
The course title and description have been updated to reflect the ET/MT merger and provide consistency
between similar courses in each curriculum.

8.) DEPARTMENT OF SOCIAL SCIENCES

LA1-Concentration in Education
New Concentration in the AA degree program

Rationale: This concentration will provide a curricular structure for students who are interested in pursuing a degree in education,
but who are not interested in participating in the Dual/Joint AA/BA program with Queens College. Such student groups will
include those interested in the following areas: secondary education, special education, physical education, elementary
education at institutions other than Queens College; in addition it will be a fall-back option for students dropped from the LE1
program due to GPA below 2.75. At present there is no clearly articulated degree program for those groups of students.
**Liberal Arts and Sciences (LA 1) Program**

**Education Concentration**

<table>
<thead>
<tr>
<th>Current</th>
<th>Credits</th>
<th>Revised</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art (AR 300 series); or Dance (PE-711); or Music (MU100 series); or Speech Communication and Theatre Arts (SP-471, 472, or TH-111 (formerly SP-532)</td>
<td>3</td>
<td>PATHWAYS COMMON CORE REQUIREMENTS</td>
<td></td>
</tr>
<tr>
<td>English: EN-101 and 102, and one course selected from the EN-200, 300, or 400 series</td>
<td>9</td>
<td>Required Core: I.A English Composition EN 101, EN 102</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>6-8</td>
<td>Required Core: I.B Mathematical and Quantitative Reasoning</td>
<td>3-(4)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3-4</td>
<td>Flexible Core: II.A World Cultures and Global Issues</td>
<td></td>
</tr>
<tr>
<td>Students may select one of the following: MA-119, 301, 303, 315, 321, 336, 440,</td>
<td></td>
<td>Flexible Core: II.B U.S.</td>
<td></td>
</tr>
</tbody>
</table>
441, 442

<table>
<thead>
<tr>
<th>Laboratory Science</th>
<th>Experience in Its Diversity</th>
<th>Flexible Core: II.C Creative Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select one course</td>
<td>Select one course</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Flexible Core: II.D Individual and Society

Flexible Core: II.E Scientific World

Flexible Core: II.A, B, C, D, or E

Select one course

3-4 ½

Elective in Mathematics (any course in the list above), Natural Science (any non-laboratory or laboratory science course – see list below of non-laboratory science courses), Computer Literacy (CS-100 or ET-820), or Computer Science (CS-101)

Select one course

30-32

Please note that BU-500 does not satisfy this requirement, but may be taken as a free elective.

<table>
<thead>
<tr>
<th>History</th>
<th>Flexible Core: II.A, B, C, D, or E</th>
</tr>
</thead>
<tbody>
<tr>
<td>HI-110, 111, or 112, and</td>
<td>Select one course</td>
</tr>
<tr>
<td>6</td>
<td>30-32</td>
</tr>
</tbody>
</table>

(Note: Credits beyond 30 in the Common Core will be counted toward the Liberal Arts & Sciences component of the Major.)
<table>
<thead>
<tr>
<th></th>
<th>Sub-total</th>
<th>Sub-total</th>
</tr>
</thead>
<tbody>
<tr>
<td>one additional course in the HI-100 series (HI 127 or 128 is recommended)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two courses in Physical Education or Dance from the PE-400, 500, or 600 series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Sciences</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Speech Communication: SP-211</td>
<td>6</td>
<td>0-6</td>
</tr>
<tr>
<td>Liberal Arts and Sciences elective(s) **to make up a minimum of 48 Liberal Arts and Science credits</td>
<td>3</td>
<td>0-6</td>
</tr>
<tr>
<td>Sub-total</td>
<td>0-5</td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION CONCENTRATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROGRAM REQUIREMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>– Liberal Arts and Sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following requirements may be met by taking courses in the Common Core and/or in the Major:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Foreign Language courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HI-110,-111, or-112, and one course from this group:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ELECTIVES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HI-127 - Growth of American Civilization I: Colonial Period Through Reconstruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HI-128 - Growth of American Civilization II: Reconstruction to the Present</td>
<td></td>
<td>0-6</td>
</tr>
<tr>
<td>Total Credits Required</td>
<td>51-52</td>
<td>0-3</td>
</tr>
<tr>
<td>Two Social Sciences courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Communication SP21</td>
<td>8-9</td>
<td></td>
</tr>
</tbody>
</table>
* Students with prior study in languages not taught at the College should consult with the chair of the Department of Foreign Languages and Literatures for evaluation and choose another Foreign Language offered by the department.

** See section on Understanding Program Requirements.

### Non-laboratory Science Electives

- Geology 100, Geology 105, Geology 125
- Biology 110, Biology 120, Biology 170‡
- Chemistry 101‡, Chemistry 103‡, Chemistry 110‡, Chemistry 120‡, Chemistry 130‡
- Physics 103‡, Physics 120‡

‡ Courses with the option of a laboratory.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>One English course from the - 200, - 300, OR - 400 series</td>
<td>0-3</td>
</tr>
<tr>
<td>RECOMMENDED COURSES:</td>
<td></td>
</tr>
<tr>
<td>EN -216 Popular Culture; EN - 224, 225Special Topics in Writing as Craft: The Immigrant Experience or Navigating Difference: Reading and Writing About being “Other” or Be Home Before Dark: Reading and Writing about Family</td>
<td></td>
</tr>
<tr>
<td>One science laboratory class, to be taken as a co-requisite to the Science course in I.C. (students who take a 4-credit lab science course in I.C. have fulfilled this requirement)</td>
<td>0-1</td>
</tr>
<tr>
<td>Liberal arts and sciences electives to make up a minimum of 48 Liberal Arts and Sciences credits.</td>
<td>0-5</td>
</tr>
</tbody>
</table>

**Sub-total**

(16)-18
<table>
<thead>
<tr>
<th><strong>EDUCATION CONCENTRATION REQUIREMENTS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MU 261 - Music for Teachers</td>
<td>9-(10)</td>
</tr>
<tr>
<td>EDUC 101 - Contemporary Education</td>
<td></td>
</tr>
<tr>
<td>PSYCH 215 – Child Development</td>
<td></td>
</tr>
<tr>
<td>EDUC 215 – Special Education *</td>
<td>1</td>
</tr>
</tbody>
</table>

**EDUCATION Additional Concentration Requirements**

| HE 110                                 | 60-(61) |

**Total credits for the degree program:**
This section is part of the LA basic requirements:

### ADDITIONAL MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 101 or HE-102</td>
<td>1-2</td>
</tr>
<tr>
<td>Two courses in Phys. Ed. or Dance from PE 400 and 500 series or DAN 100 series</td>
<td>2</td>
</tr>
</tbody>
</table>

**Sub-total**: 3-4

- The concentration section includes the 14-18 credits of Liberal Arts and Sciences that can be adjusted for the particular concentration, along with the 8-9 Concentration credits. The CUNY Education major (at QCC) consists of three courses: PSYC 215 (3 credits), plus EDUC 101 and MU 261 (total 7 credits). Because PSYC 215 can’t fit in the 8-9 Concentration, it has to go into the 14-18 credits, but that bumps the HI/SS line, so I suggest adding *(if already taken in common core, choose from HI 110, 111, or 112)* to the SP 211 requirement. The 7 credits don’t fill up the 8-9, so I have suggested “remaining credits may be selected from Common Core courses or free electives” as a potential solution.

### Education – To complete a concentration in Education, students must complete the major requirements below:

- Two Foreign Language courses *(two sequential courses are required, level and sequence to be determined by Foreign Languages & Literature department placement)*
- PSYC 215
- SP-211 *(if already taken in common core, choose from HI 110, 111, or 112)*
- One English course from EN-200, 300, or 400 series; recommended courses: EN-216, EN-224, EN 225
- One science lab. course *(STEM variant in common core satisfies this requirement)*: Applicable courses include BI-132, BI-171; CH-102, CH-111, CH-121; ET-842; PH-112.

**Education Concentration (8-9 credits):** Take EDUC 101 and MU 261; remaining credits may be selected from Common Core courses or free electives

### NOMINATIONS for the CUNY Common Core—already sent to the CUNY CCCRC’s 4-16-13

- ANTH -160
- ANTH-170
- PSYC-240
- SOCY-220

### 8. ) DEPARTMENT OF BIOLOGY and GEOLOGY

**BIO-132 Foundations of Biology Laboratory** 3 laboratory hours, 1 credit

Prerequisites and/or co-requisites: BE-112 (or 205) and BE-122 (or 226) or satisfactory scores on the CUNY ACT Assessment test, MA – 030/ MA - 013

9.) Old Business

10.) New Business