

QUEENSBOROUGH COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
CURRICULUM COMMITTEE

To: Philip Pecorino, Academic Senate Steering Committee
From: Aránzazu Borrachero, Chairperson, Committee on Curriculum
Date: November 14, 2013

Subject: Monthly Report

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

1. Changes in Courses
2. Program Revisions

1. CHANGES IN COURSES

DEPARTMENT OF ACADEMIC LITERACY

BE-205 Advanced Composition for ESL Students

<p>From: BE-205 Advanced Composition for ESL Students Hours and Credits: 3 class hours 1 recitation hour 1 laboratory hour 0 credit Prerequisite: BE-201 and BE-203 (if required) or placement in BE-205. <i>Pre- or co-requisite: BE-226 or Exempt Reading.</i> Course Description: Designed for students who speak English as a second language and have had some experience in English composition, but who still require remedial work before taking content area courses. It is also the final course of the sequence for ESL students with serious writing deficiencies. Emphasis is on advanced grammar and organizing and writing a five-paragraph essay.</p>	<p>From: BE-205 Advanced Composition for ESL Students Hours and Credits: 3 class hours 1 recitation hour 1 laboratory hour 0 credit Prerequisite: BE-201 and BE-203 (if required) or placement in BE-205. <i>Pre- or co-requisite: BE-226 or Exempt Reading.</i> <u>Students may only enroll in this course two times. If students have not passed after taking this course twice, they will be advised to enroll in a CATW Writing Immersion Seminar.</u> Course Description: Designed for students who speak English as a second language and have had some experience in English composition, but who still require remedial work before taking content area courses. It is also the final course of the sequence for ESL students with serious writing deficiencies. Emphasis is on advanced grammar and organizing and writing a five-paragraph essay.</p>
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Rationale: BE205 is an advanced composition course for English-Language Learners. At the end of this course, the students are expected to pass the CUNY Aligned Test of Writing (CATW). However, since many of the students in this class are unable to acquire the academic skills needed to pass this exam, they become “multiple repeaters.” As a result, at the present 60% of the students in BE205 have taken this course at least two or more times. In fact, some have taken the course as many as ten times. Thus, the Department of Academic Literacy desires to limit students so that they can only take this course two times. After they have failed this course twice, they will be required to participate in a CATW Immersion Seminar that will be specifically designed to enhance their writing skills so that they can retake this standardized exam and pass it.

BE-226 College Reading and Study Skills for ESL Students

<p>From: BE-226 College Reading and Study Skills for ESL Students Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-225 or placement in BE-226. Description: Designed for students who speak English as a second language who need to develop college level reading and study skills. It is also the second course of a two-semester sequence (with BE-225) for students with serious skill deficiencies in reading. Emphasis is placed on development of fluency, patterns of organization in text type material, vocabulary in context, note-taking skills, test-taking skills, library and reference techniques, and knowledge of English idioms.</p>	<p>To: BE-226 College Reading and Study Skills for ESL Students Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-225 or placement in BE-226. <i>Students may only enroll in this course two times. If students have not passed after taking this course twice, they will be advised to enroll in a ACT Reading Immersion Seminar.</i> Description: Designed for students who speak English as a second language who need to develop college level reading and study skills. It is also the second course of a two-semester sequence (with BE-225) for students with serious skill deficiencies in reading. Emphasis is placed on development of fluency, patterns of organization in text type material, vocabulary in context, note-taking skills, test-taking skills, library and reference techniques, and knowledge of English idioms.</p>
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Rationale: BE226 is an advanced reading course for English-Language Learners. At the end of this course, the students are expected to pass the standardized ACT Reading Compass Exam. However, since these students are English Language Learners, many are unable to acquire the academic skills required to pass this exam. Thus, they become “multiple repeaters.” As a result, at the present 43% of the students in BE226 have taken this course at least two or more times. In fact, some have taken the course as many as ten times. Thus, the Department of Academic Literacy desires to permit students to take this course only two times. After they have failed this course twice, they will be required to participate in a Reading Immersion Seminar that will be specifically designed to enhance their reading skills so that they retake the ACT Compass standardized exam and pass it.

BE-112 Composition Workshop

<p>From: BE-112 Composition Workshop Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-111 or placement in BE-112. <i>Pre- or co-requisite: BE-122 or Exempt Reading.</i> Description: For students with special writing problems who need intensified instruction, as determined by a standard skills assessment or placement test and screening results. Paragraph and essay composition and preparation of reports stressed, with emphasis on organization, thought development, and grammar.</p>	<p>From: BE-112 Composition Workshop Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-111 or placement in BE-112. <i>Pre- or co-requisite: BE-122 or Exempt Reading. Students may only enroll in this course two times. If students have not passed after taking this course twice, they will be advised to enroll in a CATW Writing Immersion Seminar.</i> Description: For students with special writing problems who need intensified instruction, as determined by a standard skills assessment or placement test and screening results. Paragraph and essay composition and preparation of reports stressed, with emphasis on organization, thought development, and grammar.</p>
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Rationale: BE 112 is an advanced composition course for students whose primary language is English. At the end of this course, the students are expected to pass the CUNY Aligned Test of Writing (CATW). However, since many of the students in this class are unable to acquire the academic skills needed to pass this exam, they become “multiple repeaters.” As a result, at the present almost 40% of the students in BE112 have taken this course at least two or more times. Thus, the Department of Academic Literacy desires to limit students so that they can only take this course two times. After they have failed this course twice, they will be required to participate in a Writing Immersion Seminar that will be specifically designed to enhance their writing skills so that they can retake this standardized exam and pass it.

BE-122 College Reading

<p>From: BE-122 College Reading and Study Skills Improvement Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-121 or placement in BE-122. Description: Workshop in college reading improvement to help develop reading skills and effective use of time in required college reading. Emphasis on organizing ideas, increasing speed, improving comprehension and interpretation, developing vocabulary, and reading to remember facts.</p>	<p>From: BE-122 College Reading and Study Skills Improvement Hours: 3 class hours 1 recitation hour 0 credit Prerequisite: BE-121 or placement in BE-122. <u>Students may only enroll in this course two times. If students have not passed after taking this course twice, they will be advised to enroll in a ACT Reading Immersion Seminar.</u> Description: Workshop in college reading improvement to help develop reading skills and effective use of time in required college reading. Emphasis on organizing ideas, increasing speed, improving comprehension and interpretation, developing vocabulary, and reading to remember facts.</p>
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Rationale: BE122 is an advanced reading course for students whose primary language is English. At the end of this course, the students are expected to pass the standardized ACT Reading Compass Exam. However, many students are unable to acquire the academic skills required to pass this exam. Thus, they become “multiple repeaters.” As a result, at the present 23% of the students in BE122 have taken this course at least two or more times. In fact, some have taken the course as many as ten times. Thus the Department of Academic Literacy desires to permit students to take this course two times. After they have failed this course twice, they will be required to participate in a Reading Immersion Seminar that will be specifically designed to enhance their reading skills so that they retake this standardized ACT Compass exam and pass it.

DEPARTMENT OF BUSINESS

BU-916 Medical Coding and Billing I

<p>From: BU-916 Medical Coding and Billing I Prerequisites: BI-520 and either BI-403 or BU-903</p>	<p>To: BU-916 Medical Coding and Billing I</p>
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Rationale:
**Please note: This is just a change in prerequisites; no changes are proposed in the Medical Office Assistant A.A.S, the Medical Office Assistant Certificate or the Healthcare Office Administration: Managing, Coding, and Billing Certificate curricula.*

The prerequisites that are presently required in BU-916 are unnecessary for the following reasons:

- The textbook used in this course includes an overview of medical terminology as well as overview of anatomy and physiology. This textbook incorporates coding chapters which correlate directly with the ICD-9, ICD-10 and CPT coding manuals. Students have the opportunity to look up any medical terms with which they are unfamiliar prior to coming up with appropriate medical and billing codes.
- This course is often desired by students who come to QCC with diverse employment and educational backgrounds--some have employment experience in healthcare, some have completed the associate, baccalaureate, or advanced degrees. By eliminating this course's prerequisites, BU-916 will be available to be used as a free elective or as a business elective.
- Scheduling issues will become a lot more palatable, especially for evening students. Those needing BU-916 often have difficulty with scheduling these prerequisites. They often wind up with the need to take one of the prerequisites and BU-916 in their last semester.

Prerequisite overrides are often granted so that students can complete their curricula and graduate.

BU-111 Computer Applications in Accounting

<p>FROM BU-111 COMPUTER APPLICATIONS IN ACCOUNTING <i>3 class hours 2 laboratory hours 3 credits</i> <i>Prerequisite: BU-500 & [BU-102, both] with the minimum grade of C. [The prerequisite of BU-102 may be waived for students in the Office Administration Assistant Certificate Program in the Accounting/Office Administration Option who have earned a minimum grade of C in BU-101].</i></p> <p>A review of business applications currently used to enhance the productivity of the accountant. The student is expected to be able to apply new tools, such as electronic spreadsheets, integrated accounting and data base management, to solve selected business problems through hands-on experience in a microcomputer laboratory.</p>	<p>TO BU-111 COMPUTER APPLICATIONS IN ACCOUNTING <i>3 class hours 2 laboratory hours 3 credits</i> <i>Prerequisite: BU-500 & BU-101, both with the minimum grade of C.</i> A review of business applications currently used to enhance the productivity of the accountant. The student is expected to be able to apply new tools, such as electronic spreadsheets, integrated accounting and data base management, to solve selected business problems through hands-on experience in a microcomputer laboratory.</p>
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RATIONALE

A minimum grade of C in BU-101 will sufficiently prepare students for BU-111. The material covered in BU-101 is all that is needed for the integrated accounting software. The material covered in BU-102 is not part of the curriculum in BU-111. This will open this course to students right after they have completed BU-101 and the content is fresh in their memory.

BU-909 Cooperative Education in Business: Office Administration and Technology
BU-910 Cooperative Education Business: Management
BU-911 Cooperative Education in Business: Computer Information Systems
BU-912 Cooperative Education in Business: Accounting/Office Administration and Technology

<p>From: [BU-909 Cooperative Education in Business: Office Administration and Technology BU-910 Cooperative Education in Business: Management BU-911 Cooperative Education in Business: Computer Information Systems BU-912 Cooperative Education in Business: Accounting/Office Administration and Technology]</p> <p>Hours to be arranged; 3 credits</p> <p>Course Description: [BU-909 Cooperative Education in Business: Office Administration and Technology] Open to matriculated business majors in certificate or degree programs [in Office Administration and Technology, Management, Computer Information Systems, Health Care Office Administration, Microsoft Office Applications Proficiency Preparation, and Accounting/Office.] Students planning to register for the internship should contact the business faculty coordinator in their area in the semester prior to registering. The cooperative education experience in business includes employment in a field [experience or internship] which supplements classroom [theory]. Students are placed with cooperative employers for a specified number of hours (minimum 135 hours). Students participate in seminars and submit a final paper related to the work experience. A written evaluation from the employer may be required. Students receive a grade of pass or fail.</p>	<p>To: <u>BU-600 Business Internships</u></p> <p><u>Prerequisites: minimum 2.5 cumulative GPA, matriculated business major in degree or certificate curricula, or enrollment in the Medical Office Assistant A.A.S. or Medical Office Assistant Certificate curricula.</u></p> <p><u>A student is usually accepted as an intern only if the student is near the end of his/her curricula.</u> Hours to be arranged; 3 credits</p> <p>Course Description: BU-600 <u>Business Internships</u> Open to matriculated business majors in degree or certificate programs <u>and to students enrolled in the Medical Office Assistant A. A. S and the Medical Office Certificate curricula.</u> Students planning to register for the internship should contact the <u>Business Department Internship Faculty Coordinator</u> and should have a <u>minimum 2.5 cumulative GPA.</u> Students are usually <u>accepted as an interns only if they are near the end of their curricula.</u> The <u>internship (cooperative) experience in business includes employment in a field that supplements classroom learning.</u> Students will be assisted with their search for an internship and are required to work a minimum of 135 hours during the semester. Students participate in seminars and submit a final paper related to their work experience. A written evaluation from the employer may be required. Students receive a grade of pass or fail.</p>
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Rationale:

Replacing “cooperative” with “internship” in the course title makes it easier for the student body to understand the nature and purpose of the course.

BU-600 (Business Internships) is offered to students who have a minimum 2.5 cumulative GPA, matriculated as a business major in degree or certificate curricula or enrolled in the Medical Office Assistant A.A.S. or Medical Office Assistant Certificate curricula, and are nearing the end of their curricula. These requirements provide assurance to participating employers that QCC is sending well-trained, qualified students to their companies or professional establishments.

At the present time, the Business Department offers four separate internship courses—one for each of the areas in the Business Department which includes Accounting/Office Administration Technology,

Management/Marketing, Computer Information Systems, and Office Administration and Technology. Running four separate internship courses (BU-909, 910, 911, 912) is cumbersome and unnecessarily tedious as it relates to enrollment issues. It is extremely difficult and usually impossible to run separate internship courses for different business majors. We consistently run two internship courses per semester with a maximum of 15 students in each course.

One internship course that welcomes all qualified business students is the best way to offer our very capable accounting, management/marketing, computer information systems, office administration and technology/medical office assistant students this opportunity. One internship course (with multiple sections) assures that no student will be denied an internship because the Business Department is unable to fill an entire section with students who have the same major.

In addition, all students enrolled in BU-600 (Business Internships) will be required to attend scheduled seminars and will have an opportunity to share their work experiences with students who are working in different aspects of the business world. Students must submit a final paper related to their work experience. A written evaluation from the employer may be required. Students receive a grade of pass or fail.

2. PROGRAM REVISIONS

DEPARTMENT OF BUSINESS

Health Care Office Administration: Managing, Coding, and Billing – Certificate

From:

General Education Core Requirements

Credits

EN-101 or EN-103	English Composition I Writing for the New Media	3
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Requirements for the Major

BI_520	Public Health Science	4
BU-850	Fundamentals of Microsoft Windows	1
BU-903	Medical Office Procedures	3
BU-907	Word/Information Processing Using Microsoft Word for Windows	3
BU-909	Cooperative Education in Business	3
BU-914	Critical Issues in Health Care Administration	3
BU-916	Medical Coding and Billing I	3
Two courses selected from the following (dependent on typing ability) BU-801 BU802 BU-812	Typewriting/Keyboarding I Typewriting/Keyboarding II Transcription and Dictation of Business Documents	4
Choose three credits: BI-150 BI-403 SS-640 HE-101 or HE-102 or CPR	Organization & Delivery of health Care Medical Terminology Medical Ethics Health Education CPR	3
Total		30

To:

General Education Core Requirements		Credits
EN-101 or EN-103	English Composition I Writing for the New Media	3

Requirements for the Major

BI_520	Public Health Science	4
BU-850	Fundamentals of Microsoft Windows	1
BU-903	Medical Office Procedures	3
BU-907	Word/Information Processing Using Microsoft Word for Windows	3
<u>BU-917</u>	<u>Healthcare Information Management</u>	3
BU-916	Medical Coding and Billing I	3
Two courses selected from the following (dependent on typing ability) BU-801 BU802 BU-812	Typewriting/Keyboarding I Typewriting/Keyboarding II Transcription and Dictation of Business Documents	4
<u>Business Electives</u>		<u>3</u>
Choose three credits: BI-150 BI-403 SS-640 HE-101 or HE-102 or CPR	Organization & Delivery of health Care Medical Terminology Medical Ethics Health Education CPR	3
	Total	30

<p>From:</p> <p>BU-909 Cooperative Education in Business Office Administration and Technology 3 credits</p> <p>BU-914 Critical Issues in Health Care Administration]</p>	<p>To:</p> <p><u>Business Electives</u> 3 credits</p> <p><u>BU-917 Healthcare Information Management</u></p>
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Rationale:

BU-909 (Cooperative Education in Business Office Administration and Technology) is offered to students who have a minimum 2.5 cumulative GPA, are matriculated as a business major in degree or certificate curricula or are enrolled in the Medical Office Assistant A.A.S. or the Medical Office Assistant Certificate curricula, and are nearing the end of their curricula. These requirements provide assurance to participating employers that QCC is sending well-trained, qualified students to their companies or professional establishments.

However, not every student enrolled in the Health Care Office Administration Certificate can meet the above requirements, nor will every student enrolled in this curriculum benefit from a business internship. Students enrolled in this program have diverse employment and educational backgrounds. Some students have employment experience in healthcare, while others may have completed the associate, baccalaureate, or advanced degrees. Many of these students will be better served by substituting 3

credits of business electives that will contribute to their future career objectives instead of participating in a business internship.

As a result of this change, BU-909 (Cooperative Education in Business Office Administration and Technology) can be used to fulfill the 3-credit business elective requirement in the Health Care Office Administration Certificate; BU-909 (Cooperative Education in Business Office Administration and Technology) will no longer be listed as a requirement in the Health Care Office Administration: Managing, Coding, and Billing – Certificate.

BU-914 (Critical Issues in Health Care Administration) is no longer offered at Queensborough and has been replaced by BU-917 (Healthcare Information Management).

DEPARTMENT of ENGINEERING TECHNOLOGY

Mechanical Engineering Technology (A.A.S.)

SUMMARY OF CHANGES

The proposed changes to the MT curriculum will maintain the same number of credits and hours needed for graduation as in the existing MT curriculum. Furthermore, there are no changes to the general education and liberal arts and sciences course requirements.

The Engineering Technology Department strives to keep all its curriculums up to date in order to provide our students with the best preparation for current jobs and for successful transfer to quality baccalaureate programs upon graduation. This proposal is in full compliance with the ETAC/ABET accreditation guidelines and will remove the shortcoming from the recent evaluation visit.

New Courses

- 1.) MT-101 Introduction to Engineering & Technology 3 Lab Hours/1 Credit

Rationale:

Students often come to Mechanical Engineering technology without a clear sense of the discipline or what it entails. Before a long-term commitment is made to study the material in-depth, it is wise to give a broad overview of the entire profession and other related disciplines. For those students who continue on in the major, this overview will give them a firm foundation in technical skills on which to build future studies.

- 2.) MT-140 Engineering Analysis 3 Lab Hours/1 Credit

Rationale:

This course introduces students to a variety of topics, all of which will be studied in more detail in future courses. This course is designed to help them to see inter-relationships between various topics, and how the pieces fit together to form the entire discipline. Further, the course creates a bridge to help students transition from abstract mathematical reasoning to the type of physical problem solving common in engineering practice.

- 3.) MT-523 Thermodynamics 3 Class hours/3 Credits

Rationale:

The curriculum currently contains a survey course (MT-513, Thermo-Fluid Systems). An excessive number of topics and limited time prevent an in-depth study of any particular topic. MT-523 (which will replace MT-513) focuses exclusively on thermodynamics in order to allow an in-depth study of the subject matter. This is also more aligned with other schools such as NYCCT and SUNY Farmingdale, which will

allow for a more efficient transfer process. The fluid mechanics portion of the survey course will be proposed as a separate new course.

4.) MT-525 Measurement Techniques in the Thermal Sciences 3 Lab hours/1 Credit

Rationale:

This new course replaces a survey course (MT-514, Thermo-Fluid Systems Lab). The new course is focused on the use of laboratory equipment in practical settings and the application of this equipment to pursue and satisfy scientific curiosity. This will allow students to investigate the thermal sciences from a conceptual standpoint prior to undertaking a more formal study with the appropriate mathematical rigor. The course will be offered as an elective.

Course Revisions

From required courses to electives:

1.) MT-125 Metallurgy & Materials Laboratory 3 Lab Hours/1 Credit

Rationale:

MT-125, Metallurgy & Materials Lab, is being removed as a required course in order to make room for new courses to be added to the curriculum. MT-125 will continue to be offered as an elective course.

2.) MT-346 Strength of Materials Laboratory 3 Lab Hours/1 Credit

Rationale:

MT-346, Strength of Materials Lab, is being removed as a required course in order to make room for new courses to be added to the curriculum. MT-346 will continue to be offered as an elective course.

3.) MT-514 Thermo-Fluid Systems Laboratory 3 Lab Hours/1 Credit

Rationale:

MT-514, Thermo-Fluid Systems Lab, is being removed as a required course in order to make room for new courses to be added to the curriculum. MT-514 will be replaced by MT-525, Measurement Techniques in the Thermal Sciences, which will be offered as an elective course.

4.) MT-900 Cooperative Education/Design Projects 1 Class Hour/3 Credits

Rationale:

The Cooperative Education course is being removed as a required course, but will be offered as an elective course.

Other revisions:

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

[Prerequisites (and/or) co-requisites: none]

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

Prerequisite or Co-requisite: MT-111

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

Rationale:

The prerequisite or co-requisite has been added to ensure that students taking this course will have the necessary background knowledge.

2.) From: 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.

To: From: MT-293 Parametric Computer-Aided Design *1 lecture hour 2 recitation hours 3 laboratory hours 3 credits*

Prerequisite or Co-requisite: MT-111

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 prerequisite or co-requisite has been added in order to relate the subject matter to fundamentals of drafting and engineering graphics. The fundamentals of engineering graphics, which are introduced in MT-111, are expanded on and refined in this course.

3.) From: MT-341 Applied Mechanics *3 class hours 3 credits*

Prerequisite: [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.

To: MT-341 Applied Mechanics *3 class hours 3 credits*

Prerequisite: PH-201 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:

The pre-requisite has been changed in order to ensure that students are more familiar with the background knowledge that is necessary for success in this course. This will ensure that the instructor has the appropriate time available for an in-depth coverage of the subject matter.

From:

GENERAL EDUCATION CORE REQUIREMENTS

		Credits
EN-101, 102	English Composition I, II	6
MA-114❖	College Algebra & Trigonometry for Technical Students	4
MA-128❖	Calculus for Technical and Business Students	4
PH-201*, 202*	General Physics I, II	8
SS- or HI-	Electives in Social Science§ or History§ (HI-100 series)	6
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Sub-total		28

REQUIREMENTS FOR THE MAJOR

MT-111	Technical Graphics	2
MT-122	Manufacturing Processes	3
MT-124§	Metallurgy and Materials	3
[MT-125§	Metallurgy Laboratory	1]
MT-161	Fundamentals of Computer Numerical Control	3
MT-293	Parametric Computer-Aided Design	3
MT-341	Applied Mechanics	3
MT-345§	Strength of Materials	3
[MT-346§	Strength of Materials Laboratory	1]
MT-369	Computer Applications in Engineering Technology	3
MT-491	Computer Controlled Manufacturing	2
MT-492	Introduction to Virtual Automation	2
[MT-513	Thermo-Fluid Systems	3]
[MT-514§	Thermo-Fluid Systems Laboratory	1]
[MT-900	Cooperative Education/Design Projects	3]
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Sub-total		36
Total Credits Required		64

To:

GENERAL EDUCATION CORE REQUIREMENTS

		Credits
EN-101, 102	English Composition I, II	6
MA-114❖	College Algebra & Trigonometry for Technical Students	4
MA-128❖	Calculus for Technical and Business Students	4
PH-201*, 202*	General Physics I, II	8
SS- or HI-	Electives in Social Science§ or History§ (HI-100 series)	6
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Sub-total		28

REQUIREMENTS FOR THE MAJOR

<u>MT-101</u>	<u>Introduction to Engineering & Technology</u>	<u>1</u>
MT-111	Technical Graphics	2
MT-122	Manufacturing Processes	3
MT-124§	Metallurgy and Materials	3
MT-161	Fundamentals of Computer Numerical Control	3
<u>MT-140</u>	<u>Engineering Analysis</u>	<u>1</u>
MT-293	Parametric Computer-Aided Design	3

MT-341	Applied Mechanics	3
MT-345§	Strength of Materials	3
MT-369	Computer Applications in Engineering Technology	3
MT-491	Computer-Controlled Manufacturing	2
MT-492	Introduction to Virtual Automation	2
MT-523	Thermodynamics	3

ELECTIVES

MT-xxx	MT Electives	4
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	Sub-total	36
Total Credits Required		6

