New York City College of Technology, CUNY CURRICULUM MODIFICATION PROPOSAL FORM

This form is used for all curriculum modification proposals. See the <u>Proposal Classification Chart</u> for information about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

Title of Proposal	CET 2023 Minor Curriculum Changes
Date	9/14/2023
Major or Minor	Minor
Proposer's Name	Yu Wang, Farrukh Zia, Aparicio Carranza, Ohbong Kwon
Department	Computer Engineering Tech
Date of Departmental Meeting	10/9/2023
in which proposal was	
approved	
Department Chair Name	Sunghoon Jang
Department Chair Signature and Date	Sunghoon Jang Digitally signed by Sunghoon Jang Date: 2023.10.05 13:17:27 -04'00'
Academic Dean Name	Gerarda Shields
Academic Dean Signature and Date	Gerarda M. Shields Digitally signed by Gerarda M. Shields Date: 2023.10.05 16:37:53 -04'00'
Brief Description of Proposal (Describe the modifications contained within this proposal in a succinct summary. More detailed content will be provided in the proposal body.	Modifications in this proposal include: Updates to course Pre-requisite(s) or Pre/Co-requisite(s): EMT 1220, CET 3525, CET 3625, CET 4711, CET 4960, and CET 4962 Updates to Course Titles: CET 4705, CET4805, CET 4960, and CET 4962 Updates to Course Descriptions : CET4805, CET 4960, and CET 4962
Brief Rationale for Proposal (Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body).	The changes of pre-requisites or pre/co-requisites make sure students, especially for transfer students, are prepared for their middle- and upper-level coursework. The modification of the course titles and descriptions will provide our students with more appropriate information on the content of the courses. Change of course title, and course description reflects up to date industry trends.
Proposal History (Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list).	This is the first submission of this proposal.

Please include all appropriate documentation as indicated in the Curriculum Modification Checklist.

For each new course, please also complete the New Course Proposal and submit in this document.

Please submit this document as a single .doc or .rtf format. If some documents are unable to be converted to .doc, then please provide all documents archived into a single .zip file.

ALL PROPOSAL CHECK LIST

Completed CURRICULUM MODIFICATION FORM including:		
Brief description of proposal	Х	
Rationale for proposal	Х	
Date of department meeting approving the modification	Х	
Chair's Signature		
Dean's Signature		
Evidence of consultation with affected departments		
List of the programs that use this course as required or elective, and courses that use this as a prerequisite.		
Documentation of Advisory Commission views (if applicable).		
Completed <u>Chancellor's Report Form</u> .	Х	

EXISTING PROGRAM MODIFICATION PROPOSALS

Documentation indicating core curriculum requirements have been met for new programs/options or program changes.	
Detailed rationale for each modification (this includes minor modifications)	Х

CET Minor Curriculum Changes and Rationale in 2023

This proposal indicates the Computer Engineering Technology Department to change some of EMT and CET major course descriptions, course titles, course prerequisites and pre/corequisites. The changes of Prerequisites or Pre/corequisites make sure students, especially for transfer students, are prepared for their middle- and upper-level coursework. The modification of the course titles and descriptions will provide our students with more appropriate information on the content of the courses. Change of course title and course description reflects up to date industry trends.

1. Changes to Existing Courses EMT 1220 (Mechanism) (Prof. Wang and Prof. Kwon)

The current EMT 1220 prerequisites and pre/co-requisites are as follows: **CURRENT COURSE PREREQUISITES**: EMT 1120, EMT 1130 **CURRENT COURSE PRE/COREQUISITES**: MAT 1275 or higher, PHYS 1433/PHYS 1441

UPDATED COURSE PREREQUISITES: EMT 1120 and EMT 1130 UPDATED COURSE PRE/COREQUISITES: MAT 1275CO or MAT 1275 or higher, PHYS 1433/PHYS 1441

Rationale: Since MAT 1275 became "MAT 1275 or and MAT 1275CO" for prerequisite purposes, MAT 1275 should be changed to MAT 1275CO or MAT 1275 as pre/co-requisite for this course.

2. Changes to Existing Courses CET3525 (Electrical Networks) (Prof. Wang and Prof. Kwon) CURRENT COURSE PRE/COREQUISITE(S): MAT 1575 or higher

UPDATED COURSE PREREQUISITE: CET 2350 UPDATED COURSE PRE/COREQUISITE: MAT1575 or higher

Rationale: The change of prerequisites makes sure students, especially transfer students, are prepared for their middle- and upper-level coursework. It will eliminate the mistake of registering CET3525 without the background of the electronics and electrical circuits. The course sequence was advised by faculty advisor in the past.

 Changes to Existing Courses CET 4711 (Computer Controlled System Design) (Prof. Wang and Prof. Zia) The current CET 4711 prerequisites and pre/co-requisites are as follows: CURRENT COURSE PREREQUISITE : CET 3640 CURRENT COURSE PRE/COREQUISITE : CET4705

UPDATED COURSE PRE/COREQUISITES: CET 3640 and CET 4705

Rationale: Experience in the class showed that students can be successful when taking CET3640 as a pre-requisite or co-requisite instead of a pre-requisite and brought the class in line with new sequence with CET3640. The changes make sure students, especially transfer students, are prepared for their middle- and upper-level coursework and reduce the number of overrides required each semester.

4. Changes to Existing Courses CET 3625 (Applied Analysis Laboratory) (Prof. Wang and Prof. Kwon) The current CET 3625 prerequisites and pre/co-requisites are as follows: CURRENT COURSE PRE/COREQUISITE: MAT 2680

UPDATED COURSE PRE/COREQUISITE: MAT 2680 UPDATED COURSE PREREQUISITE: CET 3525

Rationale: The content taught in CET 3525 prepares students to study CET 3625. The course sequence with CET 3625 and CET 3525 was advised by faculty advisor in the past. The changes make sure students, especially transfer students, are prepared for their middleand upper-level coursework. It will eliminate the mistake to register CET3625 without the background of CET 3525.

5. Changes to Existing Courses CET 4705 (Component and Subsystem Design I) (Prof. Wang and Prof. Kwon)

UPDATED COURSE CODE AND TITLE: CET 4705 - Component and Subsystem Design

Rationale: CET 4705 course name is modified from "Component and Subsystem Design I" to "Component and Subsystem Design," since CET 4805 course name is proposed to be changed from "Component and Subsystem Design II" to "Digital System Design Using HDL".

6. Changes to Existing Courses CET 4960 - Applied Digital Technology (Prof. Carranza)

CURRENT COURSE DESCRIPTION:

An introduction to the use of digital computer for measurements of real-world signals and control of real world devices. Students program data acquisition and control hardware in a high-level language such as C.

CURRENT COURSE PREREQUISITES: MAT 1575 or higher; EMT 2410 or CST 2403

UPDATED COURSE PREREQUISITE: CET3510

UPDATED COURSE CODE AND TITLE: CET 4960 - Applied Cybersecurity Technology

UPDATED COURSE DESCRIPTION:

The course focuses on the principles of Cybersecurity. The practical hands-on experimentations are performed in a contained Environment. Students perform practical guided research activity on Cybersecurity topics such as: Penetration Testing, Vulnerability Analysis, Devices and Infrastructure, Cryptography and Public Key Infrastructure (PKI), Wireless Threats, Virtualization and Cloud Security, Security of Mobile Devices, Security of Data and Applications, Computer Forensics and Recovery, etc., and develop a formal comprehensive technical report paper.

7. Changes to Existing Courses CET 4962 - Applied Software Technology (Prof. Carranza)

The current and updated course title, description, prerequisites and co-requisites for CET 4962 is presented below:

CURRENT COURSE CODE AND TITLE: CET 4962 - Applied Software Technology

CURRENT COURSE DESCRIPTION: Development of hardware-oriented programming skills. Students write programs to access external devices via a serial port or other interfaces. **CURRENT COURSE PREREQUISITES**: MAT 1575 or higher; EMT 2410 or CST 2403

UPDATED COURSE CODE AND TITLE: CET 4962 – Applied Information Technology **UPDATED COURSE DESCRIPTION:**

The course focuses on the principles of Information Technology (IT) and Information Systems (IS). Students perform guided practical research activity on key Emerging Technologies such as: Software Defined Networking (SDN), Network Programming, Cloud Computing, Networking and Security, Cloud Database, Quantum Computing, Cryptography, Enterprise Computing, etc., and develop a formal comprehensive technical report paper.

UPDATED COURSE PREREQUISITE: CET3510

Rationale: The current course titles and course descriptions have been active since the year 2000. The modification of the course titles and descriptions will provide our students with more appropriate information on the content of both courses (CET 4960 and CET 4962). The updated versions will permit us to prepare our Computer Engineering Technology students with practical skills in Cybersecurity and Information Technology. The practical nature of the courses will also motivate them to further pursue their knowledge in these ever changing technical fields. The updated prerequisite allows the flexibility to CET students in the BTECH program while still ensuring the relevant coursework has been completed.

8. Changes to Existing Courses CET 4805 – Component and Subsystem Design II (Prof. Wang and Prof. Kwon)

The current and updated course title, description, prerequisites for CET 4805 is presented below:

CURRENT COURSE CODE AND TITLE: CET 4805 - Component and Subsystem Design II **CURRENT COURSE DESCRIPTION:** Continuation of CET 4705. Further design of systems requiring solution by differential equations. Worst-case designs and component tolerances, development of control systems.

CURRENT COURSE PREREQUISITES: CET4705

UPDATED COURSE CODE AND TITLE: CET 4805 - Digital System Design Using HDL

UPDATED COURSE DESCRIPTION:

Introduce theory and modern design methodologies that allow complex digital systems to be rapidly designed, verified, and implemented using a hardware description language (HDL) and programmable ICs. Topics include coding for different levels of abstraction, implementation of combinational and sequential circuits and finite state machines, hierarchical designs, reusable component design, design constraints and verification. Contemporary CAD tools and target digital technologies including Field Programmable Gate Arrays (FPGAs) are utilized.

Rationale: The proposed change in the course description aims to provide students with relevant, practical, and up-to-date skills in digital system design, aligning the curriculum with current industry needs and technological trends. This shift ensures that graduates are well-prepared to make meaningful contributions in the rapidly evolving field of digital engineering and embedded systems.

CUNYFirst Course ID	038713		
Course Number	EMT 1220 Mechanism		
FROM:		то:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title		Course Title	
Prerequisite	EMT 1120, EMT 1130	Prerequisite	<u>EMT 1120; EMT 1130</u>
Corequisite		Corequisite	
Pre- or corequisite	MAT 1275 or higher, PHYS 1433/PHYS 1441	Pre- or corequisite	MAT 1275CO or MAT 1275 or higher, PHYS 1433/PHYS 1441
Hours		Hours	
Credits		Credits	
Description		Description	
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	
Course Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diver [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	_{si} Çourse Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diversity [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts
Effective Term	Spring 2024		
Rationale:	1 0 -		

Since MAT 1275 became "MAT 1275 or and MAT 1275CO" for prerequisite purposes, MAT 1275 should be changed to MAT 1275CO or MAT 1275 as pre/co-requisite for this course.

CUNYFirst Course ID	0376475		
Course Number	CET3525 Electrical Networks	-	
FROM:		то:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title		Course Title	
Prerequisite		Prerequisite	<u>CET 2350</u>
Corequisite		Corequisite	
Pre- or corequisite	MAT 1575 or higher	Pre- or corequisite	Mat 1575 or higher
Hours		Hours	
Credits		Credits	
Description		Description	
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	
Course Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diver [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	_{si} Çourse Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diversity [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts
Effective Term	Spring 2024		
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Rationale:

The change of prerequisites makes sure students, especially transfer students, are prepared for their middle- and upper-level coursework. It will eliminate the mistake of registering CET3525 without the background of the electronics and electrical circuits. The course sequence was advised by faculty advisor in the past.

CUNYFirst Course ID	037656		
Course Number	CET 4711 Computer Controlled	System Design	
FROM:		то:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title		Course Title	
Prerequisite	- CET 3640	Prerequisite	
Corequisite		Corequisite	
Pre- or corequisite	CET 4705	Pre- or corequisite	CET 3640 and CET 4705
Hours		Hours	
Credits		Credits	
Description		Description	
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	
Course Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diver [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	_{si} Çourse Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diversity [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts
Effective Term	Spring 2024		
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Rationale:

Experience in the class showed that students can be successful when taking CET3640 as a pre-requisite or co-requisite instead of a pre-requisite and brought the class in line with new sequence with CET 3640. The changes make sure students, especially transfer students, are prepared for their middle- and upper-level coursework and reduce the number of overrides required each semester.

CUNYFirst Course ID	037652		
Course Number	CET 3625 Applied Analysis Labo	ratory	
FROM:		то:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title		Course Title	
Prerequisite		Prerequisite	<u>CET 3525</u>
Corequisite		Corequisite	
Pre- or corequisite	MAT 2680	Pre- or corequisite	<u>MAT 2680</u>
Hours		Hours	
Credits		Credits	
Description		Description	
Requirement		Requirement	
Liberal Arts	[]Yes [x]No Liberal Arts []Yes [x]No		
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	
Course Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Divertion [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	_{si} Çourse Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diversity [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts
Effective Term	Spring 2024		
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Rationale:

The content taught in CET 3525 prepares students to study CET 3625. The course sequence with CET 3625 and CET 3525 was advised by faculty advisor in the past. The changes make sure students, especially transfer students, are prepared for their middle- and upper-level coursework. It will eliminate the mistake of registering CET 3625 without the background of CET 3525.

CUNYFirst Course ID	037655		
Course Number	CET 4705 Component and Subsy	vstem Design I	
FROM:		TO:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title	Component and Subsystem Design I	Course Title	Component and Subsystem Design
Prerequisite		Prerequisite	
Corequisite		Corequisite	
Pre- or corequisite		Pre- or corequisite	
Hours		Hours	
Credits		Credits	
Description		Description	
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors,		Course Attribute (e.g. Writing Intensive, Honors,	
Course Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Divertion [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	sif Applicability	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Diversity [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts
Effective Term	Spring 2024		

Rationale:

CET 4705 course name is modified from "Component and Subsystem Design I" to "Component and Subsystem Design," since CET 4805 course name is proposed to be changed from "Component and Subsystem Design II" to "Digital System Design Using HDL".

Changes to be offere	ed in the computer Enginee	ing rechnology Dep	artment
CUNYFirst Course ID	037660		
Course Number	CET 4805 Component and Su	bsystem Design II	
FROM:		TO:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title	Component and Subsystem Design II	Course Title	<u>Digital System Design</u> <u>Using HDL</u>
Prerequisite		Prerequisite	
Corequisite		Corequisite	
Pre- or corequisite		Pre- or corequisite	
Hours		Hours	
Credits		Credits	
Description	-Continuation of CET 4705. Further design of systems requiring solution by differential equations. Worst-case designs and component tolerances, development of control systems.	Description	Introduce theory and modern design methodologies that allow complex digital systems to be rapidly designed, verified, and implemented using a hardware description language (HDL) and programmable ICs. Topics include coding for different levels of abstraction, implementation of combinational and sequential circuits and finite state machines, hierarchical designs, reusable component design, design constraints and verification. Contemporary CAD tools and target digital technologies including Field Programmable Gate Arrays (FPGAs) are utilized.
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	

	 [x] Major [] Gen Ed Required [] English Composition [] Mathematics 		 [x] Major [] Gen Ed Required [] English Composition [] Mathematics 	
Course Applicability	 [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Div [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	/ଫରିüં¥se Applicability	 [] Science [] Gen Ed - Flexible [] World Cultures [] US Experience in its Div [] Creative Expression [] Individual and Society [] Scientific World [] Gen Ed - College Option [] Speech [] Interdisciplinary [] Advanced Liberal Arts 	versity
Effective Term	Spring 2024			

Rationale:

The proposed change in the course description aims to provide students with relevant, practical, and up-to-date skills in digital system design, aligning the curriculum with current industry needs and technological trends. This shift ensures that graduates are well-prepared to make meaningful contributions in the rapidly evolving field of digital engineering and embedded systems.

CUNYFirst Course	037670		
Course Number	CET 4960 Applied Digital Technology		
FROM:		то:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title	Applied Digital Technology	Course Title	Applied Cybersecurity Technology
Prerequisite	MAT 1575 or higher; EMT 2410 or CST 2403	Prerequisite	<u>CET 3510</u>
Corequisite		Corequisite	
Pre- or corequisite		Pre- or corequisite	
Hours		Hours	
Credits		Credits	
Description	An introduction to the use of digital computers for measurements of real-world signals and control of real world devices.Students program data acquisition and control hardware in a high- level language such as C.	Description	The course focuses on the principles of Cybersecurity. The practical hands-on experimentations are performed in a contained Environment. Students perform practical guided research activity on Cybersecurity topics such as: Penetration Testing, Vulnerability Analysis, Devices and Infrastructure, Cryptography and Public Key Infrastructure (PKI), Wireless Threats, Virtualization and Cloud Security, Security of Mobile Devices, Security of Data and Applications, Computer Forensics and Recovery, etc., and develop a formal comprehensive technical report paper.
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	

Rationale:

The current course titles and course descriptions have been active since the year 2000. The modification of the course prerequisites, titles, and descriptions will provide our students with more appropriate information on the content of the course. The updated versions will permit us to prepare our Computer Engineering Technology students with practical skills in Cybersecurity and Information Technology. The practical nature of the courses will also motivate them to further pursue their knowledge in these ever changing technical fields. The updated prerequisite allows the flexibility to CET students in the BTECH program while still ensuring the relevant coursework has been completed.

CUNYFirst Course	037671		
Course Number	CET 4962 - Applied Software Technology		
FROM:		TO:	
Department(s)		Department(s)	
Course Number		Course Number	
Course Title	Applied Software Technology	Course Title	Applied Information Technology
Prerequisite	MAT 1575 or higher; EMT 2410 or CST 2403	Prerequisite	<u>CET 3510</u>
Corequisite		Corequisite	
Pre- or corequisite		Pre- or corequisite	
Hours		Hours	
Credits		Credits	
Description	-Development of hardware- oriented programming skills. Students write programs to access external devices via a serial port or other interfaces.	Description	The course focuses on the principles of Information Technology (IT) and Information Systems (IS). Students perform guided practical research activity on key Emerging Technologies such as: Software Defined Networking (SDN), Network Programming, Cloud Computing, Networking and Security, Cloud Database, Quantum Computing, Cryptography, Enterprise Computing, etc., and develop a formal comprehensive technical report paper.
Requirement		Requirement	
Liberal Arts	[] Yes [x] No	Liberal Arts	[] Yes [x] No
Course Attribute (e.g. Writing Intensive, Honors, etc		Course Attribute (e.g. Writing Intensive, Honors, etc	

Rationale:

The current course titles and course descriptions have been active since the year 2000. The modification of the course prerequisites, titles, and descriptions will provide our students with more appropriate information on the content of the course. The updated versions will permit us to prepare our Computer Engineering Technology students with practical skills in Cybersecurity and Information Technology. The practical nature of the courses will also motivate them to further pursue their knowledge in these ever changing technical fields. The updated prerequisite allows the flexibility to CET students in the BTECH program while still ensuring the relevant coursework has been completed.