New York City College of Technology, CUNY

CURRICULUM MODIFICATION PROPOSAL FORM

about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

Title of Proposal	Minor Curriculum Proposal: Update of CET4983 *Engineering Technology III*
Date	9/14/2023
Major or Minor	Minor
Proposer's Name	Xiaohai Li, Lili Ma, Chen Xu
Department	Computer Engineering Technology
Date of Departmental Meeting in which proposal was approved	09/14/2023
Department Chair Name	Sunghoon Jang
Department Chair Signature and Date	
Academic Dean Name	Gerarda Shields
Academic Dean Signature and Date	Gerarda M. Shields Digitally signed by Gerarda M. Shields Date: 2023.09.26 16:06:25 -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.	To modify the course title, description and prerequisite of *CET 4983 Engineering Technology III*
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).	CET4983 *Engineering Technology III* is a tech elective of CEB program in Computer Engineering Technology (CET) Department. The course's current title and description are too general to reflect the technology developments in the field. To stay up to date with current technology trend, we propose to change the course title specifically to "**Applied Deep Learning**", revise the course description and prerequisites, and also make it available to the upcoming Software Technology (SET) BS degree program in the department. The proposed modifications will provide students with opportunity to learn, practice and cultivate latest deep learning techniques and skills that are more and more popularly used in industry to develop a practical deep learning and artificial intelligence solution. It will

	significantly boost students' competitive advantage in job market and enhance the CET Department's SET BS and CET BTech programs.
Proposal History (Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list).	9/2023 – New submission 12/2023 – Revised

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:	X
• Brief description of proposal	x
• Rationale for proposal	x
• Date of department meeting approving the modification	x
• Chair's Signature	x
• Dean's Signature	x
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).	N/A
Completed Chancellor's Report Form.	X

EXISTING PROGRAM MODIFICATION PROPOSALS

Documentation indicating core curriculum requirements have been met for new programs/options or program changes.	N/A

Detailed rationale for each modification (this includes minor modifications)	X

Section AV: Changes in Existing Courses

Changes to be offered in the Computer Engineering Technology Department

CET 4983 Engineering Technology III

CUNYFirst Course ID			
FROM:		**TO:**	
Department(s)		**Department(s)**	
Course	~~CET 4983 Engineering Technology III~~	**Course**	CET/SET 4983 Applied Deep Learning
Prerequisite	~~CET 4705, CET 4710 or CET 4711; Pre- or corequisites: CET 4805, CET 4810 or CET 4811 Potential substitute for CET 3550 or CET 4762~~	**Prerequisite**	CET 3640 or SET 3510, CET 4973 or CST4702, or CET Department approval
Corequisite		**Corequisite**	
Pre- or corequisite		**Pre- or corequisite**	
Hours	2 cl hrs, 3 lab hrs	**Hours**	2 cl hrs, 3 lab hrs
Credits	3	**Credits**	3
Description	Solution of complex real-world problems including complete engineering documentation. Topics change to reflect current technology and industrial need.	**Description**	Introduction to fundamentals of neural networks and deep learning with emphasis on how to apply deep learning to real-world applications. The course starts with an introduction to neural networks, gradient descent, feedforward and backpropagation, hyperparameter tuning, batch normalization, convolutional neural networks, recurrent neural networks, and more. It then focuses on applications of deep learning in a variety of areas. Students learn and practice using leading development tools to develop a deep learning solution from rich and varied data. Students also learn how to prepare data and create a sufficiently large dataset for a deep learning

			application.
Requirement Designation		**Requirement Designation**	
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 Diversity [ ] Creative Expression [ ] Individual and Society [ ] Scientific World [ ] Gen Ed - College Option [ ] Speech [ ] Interdisciplinary [ ] Advanced Liberal Arts	**Course 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	Fall 2024		

DESCRIPTION AND RATIONALE OF THE MINOR MODIFICATIONS

Deep Learning, a branch of machine learning and modern artificial intelligence, is the art of solving a computation problem using a computer but without an explicit program. In the last decade, Deep Learning (DL) has advanced unprecedentedly and become one of the greatest disruptive technologies that is changing many industries. It has triggered tremendous advancements in a great variety of applications such as product recommendation in marketing, spam email detection, stock trading, computer vision, pattern recognition, anomaly detection, medical diagnosis, predictive maintenance, analysis and monitoring of social media content, and more. More and more organizations are applying DL for a better service or decision-making.

In the light of this new technology trend, many institutions in the nation are adopting Deep Learning courses in their curriculum, among which an "***Applied Deep Learning***" course, emphasizing practical over theoretical content, is very common.

CET4983 *Engineering Technology III* is a tech elective of CEB program in Computer Engineering Technology Department. The current course title and description are too general and blurred to reflect latest technology development and advancement in the field. To stay up to date with current technology trend, we propose to change the course title specifically to "***Applied Deep Learning***", revise the course description and prerequisites correspondingly. We also propose to make this course available as a technical elective in the upcoming Software Technology (SET) BS degree program in CET Department.

This updated course will teach students the approaches and techniques of applying major DL frameworks and tools in real-life applications. It will allow students to learn, practice and cultivate latest technical skills in DL that are used in industry to develop a practical deep learning solution. It will significantly help our students gain competitive advantage in job market and enhance the CET BTech and SET BS programs.