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ACADEMIC PROGRAMS ROUTING FORM

New Program_____ **Revised Program** X

Program Announcement/Letter of Intent must be previously submitted

Complete instructions for the use of this form are provided on the reverse side. If you have any questions, please contact the Office of Academic Affairs at extension 2232.

PART I: To be completed by Department. After completing Part I, forward form to the appropriate Dean. Note - if academic program is in the School of Education, form is sent to the Faculty Council Chair for endorsement before going to the Dean's office.

New programs must submit a writing plan, oral competency plan, critical thinking infusion and assessment plan, and a computer and information literacy infusion plan to the General Education Council for review and approval.

Revised programs need to indicate if the proposed revision will have an effect on one or more of the plans listed above: Yes_____ No_X_. ***(Not applicable to minors) If so, submit the revised plans to the General Education Council for review and approval.***

Electrical and Computer Engineering — *New/Revised Program Name*

ECE — *Major/Minor Code (revised programs)*

02/04/2021 — *Date*

Marianne Hromalik Marianne Hromalik — *Department/Program Chair*

Marianne Hromalik — *Contact Person*

Marianne Hromalik Marianne Hromalik — *Curriculum/Program Representative*

02/04/2021 — *Date*

Required for School of Education/School of Business programs ONLY

Endorse concept: YES NO _____
Faculty Council/ Curriculum Chair's Signature *Date*

Part II: To be completed by the appropriate Dean (see reverse). After completing, forward form to the Provost.

Endorse YES NO Kuti Gk — 2/23/2021
Dean's Signature *Date*

Part III: To be completed by Provost (see reverse). After completing, forward form along with all attachments back to the Department.

Endorse YES NO Scott R. Furlong (eh) — 2/23/2021
Provost's Signature *Date*

Part IV: See reverse for instructions. After completing Part IV, forward form to the Faculty Assembly Chair.

UNDERGRADUATE PROGRAMS

Endorse YES NO _____
Academic Policies Council Chair's Signature *Date*

Endorse YES NO _____
Priorities and Planning Council Chair's Signature *Date*

Endorse YES NO N/A _____
Gen Ed Council Chair's Signature *Date*

GRADUATE PROGRAMS

Endorse YES NO _____
Dean of Graduate Studies and Research's Signature *Date*

Endorse: YES NO _____
Graduate Council Chair's Signature *Date*

Endorse: YES NO _____
Priorities and Planning Council Chair's Signature *Date*

Part V: To be completed by Faculty Assembly Chair.

Approve: YES NO _____
Faculty Assembly Chair's Signature *Date*

Action taken: _____

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All new major program proposals must include all the forms and attachments required by SUNY Central Administration.
These are available at http://system.suny.edu/academic-affairs/app/academic-program-planning/forms/ along with instructions on how they are to be completed.

All minor program proposals must include a completed Proposal for a Minor Program form.
This form is available through the Office of the Associate Provost.

All revised program proposals (major or minor) must include:

1. Side by side list of old and new program requirements
2. Rationale for each revision or addition
3. Changes in resources and rationale for changes

Instructions for completing the Academic Programs Routing Form
PART I - The sponsoring Department will start the process by completing Part I and forwarding the form, proposal, **and attachments** to the appropriate Dean. Note: If the academic program is within the School of Education, the Faculty Council Chair is required to endorse Part I before the Dean.

PART II - The Dean will signify endorsement of the concept by circling yes or no and forwarding the **entire package** to the Provost. Note: If the Dean does not endorse the concept, he/she must append comments or concerns to this form. Comments and concerns with endorsement will also be accepted.

PART III - The Provost will signify endorsement of the concept by circling yes or no and returning the **entire package** to the department. Note: If the Provost does not endorse the concept, he/she must append comments or concerns to this form. Comments and concerns with endorsement will also be accepted.

The Department may address any issues raised by the Dean/Provost before sending the proposal and form, along with the appropriate attachments and 10 copies, to the appropriate council (Academic Policies Council for undergraduate programs) or the Dean (Dean of Graduate Studies and Research for graduate programs). Simultaneously, the Department will send the proposal and form, along with the appropriate attachments and 10 copies, to the Priorities and Planning Council Chair.

PART IV - The Graduate Dean will signify endorsement of the concept by circling yes or no and should then send his/her copy of the form, along with the 10 copies of the proposal and appropriate attachments, to the Graduate Council Chair. The appropriate councils will be reviewing the proposal at the same time; therefore, any suggested changes or endorsements by the Academic Policies Council or the Graduate Council should be immediately relayed to Priorities and Planning Council (and vice versa). When done, the Chair of Academic Policies Council or Graduate Council should send the signed form to the Chair of Priorities and Planning. Once this process is complete, and all of the appropriate committees have endorsed the proposals, the Chair of the Priorities and Planning Council will notify the Faculty Assembly Chair and send along the copy of the signed routing form.

PART V - The Faculty Assembly Chair will notify the department/program and request 60 copies of the proposal (with attachments) for that governance process. Following approval of the proposal by Faculty Assembly, The Chair of Faculty Assembly will notify the department/program and send the proposal with attachments to the President. After approval by the President, the President will notify the department/program and the Chair of Faculty Assembly. The department/program must then send a final copy electronically to the Chair of Faculty Assembly.

Side by side list of old and new requirements:

Current		Proposed	
A. Core Requirements 38 cr		**A. Core Requirements 38 -39 cr**	
ECE 101 - Introduction to Engineering	Credit: 3	ECE 101 - Introduction to Engineering	Credit: 3
ECE 211 - Electric Circuits	Credit: 4	ECE 211 - Electric Circuits	Credit: 4
ECE 233 - Signals and Systems	Credit: 4	ECE 233 - Signals and Systems	Credit: 4
ECE 271 - Digital Systems	Credit: 4	ECE 271 - Digital Systems	Credit: 4
ECE 314 - Microelectronic Circuits	Credit: 4	ECE 314 - Microelectronic Circuits	Credit: 4
ECE 344 - Electromagnetics	Credit: 3	ECE 344 - Electromagnetics	Credit: 3
ECE 375 - Microprocessor Applications	Credit: 4	ECE 375 - Microprocessor Applications	Credit: 4
ECE 401 - ECE Seminar	Credit: 1	ECE 401 - ECE Seminar	Credit: 1
ECE 454 - Communications Systems	Credit: 4	ECE 454 - Communications Systems	Credit: 4
ECE 475 - Computer Architecture	Credit: 4	ECE 475 - Computer Architecture	Credit: 4
CSC 212 - Principles of Programming	Credit: 3	Select one, under advisement, of the following:	
		CSC 212 - Principles of Programming	Credit: 3
		ECE 270 - C++ Programming	Credit: 4
B. Required Track 6-8 cr *(Select one of the two tracks.)*		**B. Required Track 6-8 cr** *(Select one of the two tracks.)*	
Electrical Engineering Track 8 cr		**Electrical Engineering Track 8 cr**	
ECE 321 - Power Circuits and Systems	Credit: 4	ECE 321 - Power Circuits and Systems	Credit: 4
ECE 365 - Control Systems	Credit: 4	ECE 365 - Control Systems	Credit: 4
Computer Engineering Track 6 cr		**Computer Engineering Track 6 cr**	
CSC 241 - Abstract Data Types and Prog. Meth.	Credit: 3	CSC 241 - Abstract Data Types and Prog. Meth.	Credit: 3
CSC 322 – Systems Programing	Credit: 3	CSC 322 – Systems Programing	Credit: 3
-OR-		-OR-	
CSC 435 - Web Services	Credit: 3	CSC 435 - Web Services	Credit: 3
-OR-		-OR-	
CSC 445 - Computer Networks	Credit: 3	CSC 445 - Computer Networks	Credit: 3
C. Elective Requirements 9 cr		**C. Elective Requirements 9 cr**	
Science/Math/Engineering, under advisement	3 cr	Science/Math/Engineering, under advisement	3 cr.
ECE, under advisement	6 cr	ECE, under advisement	6 cr.
D. Cognate Requirements 31 cr		**D. Cognate Requirements 31 cr**	
MAT 210 - Calculus I	Credit: 4	MAT 210 - Calculus I	Credit: 4
MAT 220 - Calculus II	Credit: 4	MAT 220 - Calculus II	Credit: 4
MAT 240 - Multivariable Calculus	Credit: 4	MAT 240 - Multivariable Calculus	Credit: 4
MAT 249 - Engineering Mathematics	Credit: 4	MAT 249 - Engineering Mathematics	Credit: 4
MAT 339 - Discrete Mathematics and Statistics	Credit: 3 *	MAT 339 - Discrete Mathematics and Statistics	Credit: 3 *
CHE 111 - General Chemistry	Credit: 4	CHE 111 - General Chemistry	Credit: 4
PHY 112 - General University Physics I	Credit: 4	PHY 112 - General University Physics I	Credit: 4
PHY 213 - General University Physics II	Credit: 4	PHY 213 - General University Physics II	Credit: 4
E. Capstone Requirements 5 cr		**E. Capstone Requirements 5 cr**	
ECE 491 - Capstone Design Proposal	Credit: 1	ECE 491 - Capstone Design Proposal	Credit: 1
ECE 492 - Capstone Design	Credit: 4	ECE 492 - Capstone Design	Credit: 4
Note: A C minus (C-) or better is required in core, track, cognate and capstone courses. *Students who complete MAT 215 and 318 with a C- or better in each are exempt from taking MAT 339.		Note: A C minus (C-) or better is required in all courses credited to the major. *Students who complete MAT 215 and 318 with a C- or better in each are exempt from taking MAT 339.	

Rationale for the change (marked in red):
CSC212 and ECE270 have similar content but differ in the programming language that they are taught in. CSC212 is taught in Java while ECE270 is taught in C/C++.

ECE students typically use C/C++ for low-level programming and embedded systems. Some ECE students however, struggle with the transition from learning Java to learning C/C++ on their own. They need to learn C/C++ to succeed in ECE 375 (Microprocessor Systems) and their Capstone projects. ECE270 was therefore introduced as an alternative course for these students (who will typically follow the EE track) to get a grounding in C/C++ when learning the principles of programming.

Students who intend to do elective courses in the CS department (who typically follow the CE track) will be advised to do CSC212 as the CS department conducts most of their courses based on Java. It has been our experience that students who choose to take electives in Computer Science are typically quite comfortable in transitioning to C/C++ for ECE 375 and their Capstone projects. We intend, therefore, to continue to advise these students to take CSC212 but to advise the other ECE students, who are less inclined to programming, to take ECE270.

Required changes in resources:
ECE270 can be taught by many different faculty members in the ECE department. The course will therefore be routinely assigned to faculty on a rotating basis as is the case in all ECE introductory courses. Extra personnel, therefore, should not be required to cover this course.

The Academic Policies Council (APC) has already approved the change marked in blue as a report-out item.