FAIRMONT STATE UNIVERSITY

MEMORANDUM

TO: Curriculum Committee

FROM: Jack Kirby

DATE: April 17, 2013

SUBJECT: Curriculum Proposal #12-13-65, REVISION #1
BS Computer Science, Computer Science
Final Faculty Senate Approval 4/23/2013

I recommend approval of the attached REVISION #1 of Curriculum Proposal #12-13-65 from the College of Science and Technology, Department of Computer Science, Mathematics, and Physics. This proposal is now ready for Faculty Senate.

be First

FAIRMONT STATE UNIVERSITY

MEMORANDUM

TO: Curriculum Committee

FROM: Jack Kirby

DATE: April 1, 2013

SUBJECT: Curriculum Proposal #12-13-65
BS Computer Science, Computer Science

I recommend approval of the attached Curriculum Proposal #12-13-65 from the College of Science and Technology, Department of Computer Science, Mathematics, and Physics.

This proposal reduces the degree hours for the BS in Computer Science with major in Computer Science from 128 to 120 hours and incorporates the new General Studies requirements.

c: Dr. Christina Lavorata
Dr. Anthony Gilberti
Dr. Mahmood Hossain
Ms. Evie Brantmayer
Ms. Leslie Lovett

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CURRICULUM PROPOSAL (Submit one hard copy and an electronic copy to the Associate Provost by the second Tuesday of the month.)

Proposal Number: 12-13-65

School/Department/Program: Science and Technology/CSMP/Computer Science

Preparer/Contact Person: Dr. Mahmood Hossain/Dr. Anthony F. Gilberti

Telephone Extension: 4967/4642

Date Originally Submitted: March 30, 2013

Revision (Indicate date and label it Revision #1, #2, etc.): REVISION #1 04/17/2013

Implementation Date Requested: Fall 2013

I. **PROPOSAL**. Write a brief abstract, not exceeding 100 words, which describes the overall content of the proposal.

The proposal reduces the total credit hour requirement from 128 to 120 hours. In addition, this proposal incorporates the new General Studies requirements. This proposal deletes MATH 3335 *Probability and Statistics* (3 Hrs) from the major requirements and adds MATH 1170 *Introduction to Math Analysis* (4 Hrs). This proposal also makes MATH 2200 *Mathematical Logic* (3 Hrs) optional with MATH 3362 *Linear Algebra* (3 Hrs).

II. **DESCRIPTION OF THE PROPOSAL**. Provide a response for each letter, A-H, and for each Roman Numeral II–V. If any section does not apply to your proposal, reply N/A.

A. Deletion of course(s) or credit(s) from program(s)
This proposals deletes MATH 3335, 3 credits and 9 credits of free electives.

Total hours deleted. 12

B. Addition of course(s) or credit(s) from program(s)
MATH 1170, 4 credits

Total hours added. 4

C. Provision for interchangeable use of course(s) with program(s) **NA**

D. Revision of course content. Include, as an appendix, a revised course description, written in complete sentences, suitable for use in the university catalog. **NA**

E. Other changes to existing courses such as changes to title, course number, and elective or required status. **NA**

F. Creation of new course(s). For each new course **NA**

G. Designate the course number, title, units of credit, prerequisites (if any), ownership (FSU or shared) and specify its status as an elective or required course. If you are creating a shared course, attach a memo from the Deans of the affected Schools explaining the rationale for the course being shared.

The proposal reduces the total credit hour requirement from 128 to 120 hours. In addition, this proposal incorporates the new General Studies requirements. This proposal deletes MATH 3335 *Probability and Statistics* (3 Hrs) from the major requirements and adds MATH 1170 *Introduction to Math Analysis* (4 Hrs). This proposal also makes MATH 2200 *Mathematical Logic* (3 Hrs) optional with MATH 3362 *Linear Algebra* (3 Hrs). The current and proposed programs are included in the appendix.

1. Include, as an appendix, a course description, written in complete sentences, suitable for use in the college catalog.

2. Include, as an appendix, a detailed course outline consisting of at least two levels.

3. In order to meet the requirements as outlined in Goal One of the Strategic Plan, please include Outcome Competencies and Methods of Assessment as an appendix. Examples are available upon request from the Chair of the Curriculum Committee.

H. Attach an itemized summary of the present program(s) affected, if any, and of the proposed change(s).

Describe how this proposal affects the hours needed to complete this program. Specifically, what is the net gain or loss in hours? Use the format for Current and Proposed Programs in Appendix A.

This proposal reduces the total credit hours of the program of study to 120 credit hours and complies with the new General Studies curriculum.

III. **RATIONALE FOR THE PROPOSAL.**

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

This proposal deletes MATH 3335 *Probability and Statistics* (3 Hrs) from the major requirements and adds MATH 1170 *Introduction to Math Analysis* (4 Hrs). The Math program is in the process of revising the prerequisites for MATH 3335. After the revision, the prerequisites will include MATH 1113 and MATH 3316. This will make it difficult for the CS majors to enroll in MATH 3335 since they will need to take two additional non-required courses (MATH 1113 and MATH 3316). The rationale for including MATH 3335 in 2008-09 curriculum proposal was to satisfy the ABET criteria that requires: "At least one half year that must include discrete mathematics. The additional mathematics might consist of courses in areas such as calculus, linear algebra, numerical methods, probability, statistics, number theory, geometry, or symbolic logic." (http://www.abet.org/uploadedFiles/Accreditation/Accreditation_Process/Accreditation_Documents/Current/cac-criteria-2012-2013.pdf). By introducing MATH 1170, the students will be exposed to probability, number theory, and logic, which will satisfy the ABET criteria.
This proposal also makes MATH 2200 *Mathematical Logic* (3 Hrs) optional with MATH 3362 *Linear Algebra* (3 Hrs). This will give the students greater flexibility in choosing math classes, and will also guide them to a possible minor or double major in Mathematics.

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required? **NA**

IV. Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

College/School	Dean	Signature
Science & Technology	Dr. Gilbert	Anthony S. Gilbert

V. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal. NA

VI. ADDITIONAL COMMENTS.

APPENDIX A

B.S. Degree in Computer Science with major in Computer Science
Current Program

Required Major Courses		**HRS**	
COMP 1100	Introduction to Computing*	3	
COMP 1102	Principles of Programming I	3	
COMP 1108	Principles of Programming II	3	
COMP 2200	Object-Oriented Programming	3	
COMP 2201	Machine Organization	3	
COMP 2230	Network Programming	3	
COMP 2270	Data Structures	3	
COMP 3300	Computer Graphics or	3	
COMP 3310	Artificial Intelligence		
COMP 3330	Analysis of Algorithms	3	
COMP 3340	Operating Systems	3	
COMP 3395	Ethical Issues in Computing	3	
COMP 4400	Automata and Language Design	3	
COMP 4410	Database Management	3	
COMP 4440	Software Engineering	4	
MATH 1190	Calculus I *	4	
MATH 3315	Calculus II	4	
MATH 2200	Mathematical Logic	3	
MATH 2216	Introduction to Discrete Mathematics	3	
MATH 3335	Probability and Statistics	3	
PHYS 1105	Principles of Physics I		
PHYS 1106	Principles of Physics II		
CHEM 1101	General Chemistry I or	4	
BIOL 1105	Biological Principles I or		
SCIE XXXX	Any SCIE course		
TOTAL HOURS FOR MAJOR			**64**

Required General Studies Courses			
First Year Experience			
ENGL 1104	Written English I	3	
ENGL 1108	Written English II	3	
MATH 1190	Calculus I *	3	
COMP 1100	Introduction to Computing *	3	
COMM 2200	Introduction to Human Communication	3	
Scientific Discovery			
PHYS 1105	Principles of Physics I	5	
PHYS 1106	Principles of Physics II	5	
Cultural / Civilization Exploration		9	
Society / Human Interactions		6	
Artistic / Creative Expression		6	
TOTAL GENERAL STUDIES HOURS			**40**
TOTAL FREE ELECTIVES			**24**
TOTAL HOURS			**128**

* Hours counted in major area coursework

B.S. Degree in Computer Science with major in Computer Science
Proposed Program

Required Major Courses		HRS
COMP 1100	Introduction to Computing	3
COMP 1102	Principles of Programming I	3
COMP 1108	Principles of Programming II	3
COMP 2200	Object-Oriented Programming	3
COMP 2201	Machine Organization	3
COMP 2230	Network Programming	3
COMP 2270	Data Structures	3
COMP 3300	Computer Graphics or	
COMP 3310	Artificial Intelligence	3
COMP 3330	Analysis of Algorithms	3
COMP 3340	Operating Systems	3
COMP 3395	Ethical Issues in Computing	3
COMP 4400	Automata and Language Design	3
COMP 4410	Database Management	3
COMP 4440	Software Engineering	4
MATH 1170	Introduction to Mathematical Analysis	4
MATH 1190	Calculus I *	4
MATH 3315	Calculus II	4
MATH 2200	Mathematical Logic or	3
MATH 3362	Linear Algebra	
MATH 2216	Introduction to Discrete Mathematics	3
PHYS 1105	Principles of Physics I	5
PHYS 1106	Principles of Physics II	5
TOTAL HOURS FOR MAJOR		**71**

* Hours counted in General Studies

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Required General Studies Courses

Attribute IA – Critical Analysis	
ENGL 1108 Written English II	3
Attribute IB – Quantitative Literacy	X
MATH 1190 Calculus I	
Attribute IC – Written Communication	3
ENGL 1104 Written English I	
Attribute ID - Teamwork	X
Met in IG with COMM 2200	
Attribute IE – Information Literacy	X
Met in IA with ENGL 1108	
Attribute IF – Technology Literacy	3
TECH 1100 Technology and Society or Choice	
Attribute IG – Oral Communication	3
COMM 2200 Introduction to Human Communication	
Attribute III – Citizenship	3
Any Course	
Attribute IV – Ethics	3
Any Course	
Attribute V - Health	2-3
PHED 1100 Fitness and Wellness or Choice	
Attribute VI – Interdisciplinary and Lifelong Learning	3
Any Course	
Attribute VIIA – Fine Arts	3
Any Course	
Attribute VIIB – Humanities	3
Any Course	
Attribute VIIC – Social Sciences	3
Any Course	
Attribute VIID - Natural Science	4-5
Any Course expect PHYS Courses	
Attribute VIII – Cultural Awareness and Human Dignity	3
Any Course	
Additional General Studies hours	
TOTAL GENERAL STUDIES HOURS	**39-40**
TOTAL FREE ELECTIVES	**9-10**
TOTAL HOURS	**120**