FAIRMONT STATE UNIVERSITY

MEMORANDUM

TO: Curriculum Committee

FROM: Jack Kirby

DATE: March 28, 2013

SUBJECT: Curriculum Proposal #12-13-56, REVISION #1
AS Mechanical Engineering Technology
Final Faculty Senate Approval 4/9/2013

I recommend approval of the attached REVISION #1 of Curriculum Proposal #12-13-56 from the College of Science and Technology, Department of Technology. This proposal is now ready for Faculty Senate.

be First

FAIRMONT STATE UNIVERSITY

MEMORANDUM

TO: Curriculum Committee

FROM: Jack Kirby

DATE: March 4, 2013

SUBJECT: Curriculum Proposal #12-13-56
AS Mechanical Engineering Technology

I recommend approval of the attached Curriculum Proposal #12-13-56 from the College of Science and Technology, Department of Technology.

This proposal reduces the AS in Mechanical Engineering Technology to 60 hours.

c: Dr. Christina Lavorata
Dr. Anthony Gilberti
Mr. Jason Bolyard
Ms. Evie Brantmayer
Ms. Leslie Lovett

be First

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

Proposal Number: 12-13-56

School/Department/Program: College of Science and Technology, School of Technology, A.S. in Mechanical Engineering Technology

Preparer/Contact Person: Jason Bolyard

Telephone Extension: 4849

Date Originally Submitted:

Revision (Indicate date and label it Revision #1, #2, etc.):

Implementation Date Requested: August 2013

I. **PROPOSAL.**

This proposal is being submitted to remove 15 hours of course work and add 8 hour of course work including 2 hour of free elective to the A.S. in Mechanical Engineering Technology. These changes will allow for the A.S. in Mechanical Engineering Technology program to be reduced from 67 hours to exactly 60 hours. The TECH 1108 and 2208 courses that are being added have been previously approved and can be found in curriculum proposal 12-13-54.

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)

DRFT 1100 Engineering Graphic	3 hours
DRFT 2200 Fundamentals of CAD	3 hours
DRFT 2235 Technical Drafting	3 hours
ECON 2200 Intro. To Economics	3 hours
COMP 1101 Applied Technical Programming	3 hours

Total hours deleted. 15

B. Addition of course(s) or credit(s) from program(s)

Free Elective	2 hour
TECH 1108 Engineering Graphics I	3 hours (see proposal 12-13-54 for course syllabus)
TECH 2208 Engineering Graphics II	3 hours (see proposal 12-13-54 for course syllabus)

Total hours added. 8

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

N/A

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

N/A

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

N/A

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

1. 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.

   N/A

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

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

4. 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.

G. 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.

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.

The A.S. in Mechanical Engineering Technology program requires that three courses be removed from its curriculum to be at the maximum 60 hour limit. These courses are DRFT 1100, ECON 2200, COMP 1101. The DRFT 1100 course is a traditional pencil and paper drafting course. The ECON 2200 course is a general economics course. The COMP 1101 course is a computer programing course. A 2 hour free elective credit is also being added to allow the program to be at exactly 60 hours. The DRFT 2200 and DRFT 2235 are being replaced by TECH 1108 and TECH 2208 respectively.

See Appendix B for ETAC of ABET outcome criteria. The requirements from ABET aided in the revisions required to be at the 60 hour limit.

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?

The current ETAC of ABET outcomes do not require a A.S. in Mechanical Engineering Technology program to include a course in economics, traditional drafting, or computer programing.

No new faculty, facilities, equipment or materials will be needed.

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.

N/A

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

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

N/A

VI. ADDITIONAL COMMENTS.

N/A

APPENDIX A

A.S. Degree in Mechanical Engineering Technology

Current Program

Required Major Courses			HRS	
MECH	1100	Statics	3	
MECH	2210	Thermodynamics I	3	
MECH	2200	Strength of Materials	4	
MECH	2220	Fluid Mechanics	3	
MECH	2240	Machine Design I	3	
COMP	1101	Applied Technical Programing	3	
DRFT	1100	Engineering Graphics	3	
DRFT	2200	Fundamentals of CAD	3	
DRFT	2235	Technical Drafting	3	
ELEC	1100	Circuit Analysis	3	
ECON	2200	Into to Economics	X	
ELEC	2250	AC/DC Machinery & Controls	3	
MANF	1100	Materials and Processes	3	
MATH	1101	Applied Tech. Math I	3	
MATH	1102	Applied Tech. Math II	X	
PHYS	1101	Intro to Physics I	X	
PHYS	1102	Intro to Physiscs II	X	
TECH	2290	Engineering Analysis I	4	
TOTAL Required Major Courses				44
Major Electives				0
Minor Electives				0
TOTAL HOURS FOR MAJOR				**44**

Required General Studies Courses				
First Year Experience				12
ENGL	1104	Written English I	3	
ENGL	1108	Written English II	3	
INFO	1100	Computer Concepts and Applications	0	
MATH	1102	Applied Technical Mathematics	3	
COMM	2200, 2201, OR 2202	Communication	3	
Scientific Discovery				8
PHYS 1101, PHYS 1102				
Cultural / Civilization Exploration				0
Society / Human Interactions				3
ECON 2200				
Artistic / Creative Expression				0
TOTAL GENERAL STUDIES HOURS				**23**
TOTAL FREE ELECTIVES				**0**
TOTAL HOURS				**67**

A.S. Degree in Mechanical Engineering Technology
Proposed Program

Required Major Courses			HRS
MECH	1100	Statics	3
MECH	2210	Thermodynamics I	3
MECH	2200	Strength of Materials	4
MECH	2220	Fluid Mechanics	3
MECH	2240	Machine Design I	3
TECH	1108	Engineering Graphics I	3
TECH	2208	Engineering Graphics II	3
ELEC	1100	Circuit Analysis	3
ELEC	2250	AC/DC Machinery & Controls	3
MANF	1100	Materials and Processes	3
MATH	1101	Applied Tech. Math I	X
MATH	1102	Applied Tech. Math II	3
PHYS	1101	Intro to Physics I	X
PHYS	1102	Intro to Physiscs II	4
TECH	2290	Engineering Analysis I	4
TOTAL Required Major Courses			42
Major Electives			0
Minor Electives			XX
TOTAL HOURS FOR MAJOR			**42**

Required General Studies Courses	
Attribute IA – Critical Analysis	X
Major Course – MECH 1100	
Attribute IB – Quantitative Literacy	3
MATH 1101	
Attribute IC – Written Communication	3
ENGL 1104	
Attribute ID - Teamwork	0
Attribute IE – Information Literacy	3
ENGL 1108	
Attribute IF – Technology Literacy	0
Attribute IG – Oral Communication	3
COMM 2200 or 2201 or 2202	
Attribute III - Citizenship	0
Attribute IV - Ethics	X
COMM 2200 or 2201 or 2202	
Attribute V - Health	0
Attribute VI - Interdisciplinary	0
Attribute VIIA - Arts	0
Attribute VIIB - Humanities	0
Attribute VIIC – Social Sciences	0
Attribute VIID - Natural Science	4
PHYS 1101	
Attribute VIII – Cultural Awareness	0
Additional General Studies hours	0
TOTAL GENERAL STUDIES HOURS	16
TOTAL FREE ELECTIVES	**2**
TOTAL HOURS	**60**

APPENDIX B

A.S in Mechanical Engineering Technology ETAC of ABET Outcome Criteria

A. For associate degree programs, these student outcomes must include, but are not limited to, the following learned capabilities:

a. an ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities;

b. an ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;

c. an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;

d. an ability to function effectively as a member of a technical team;

e. an ability to identify, analyze, and solve narrowly defined engineering technology problems;

f. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;

g. an understanding of the need for and an ability to engage in self-directed continuing professional development;

h. an understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity; and

i. a commitment to quality, timeliness, and continuous improvement.

The mechanical engineering technology discipline encompasses the areas (and principles) of materials, applied mechanics, computer-aided drafting/design, manufacturing, experimental techniques/procedure, analysis of engineering data, machine/mechanical design/analysis, conventional or alternative energy system design/analysis, power generation, fluid power, thermal/fluid system design/analysis, plant operation, maintenance, technical sales, instrumentation/control systems, and heating, ventilation, and air conditioning (HVAC), among others. As such, programs outcomes, based on specific program objectives, may have a narrower focus with greater depth, selecting fewer areas, or a broader spectrum approach with less depth, drawing from multiple areas. However, all programs must demonstrate an applied basis in engineering mechanics/sciences.

Associate degree programs must demonstrate that graduates can apply specific program principles to the specification, installation, fabrication, test, operation, maintenance, sales, or documentation of basic mechanical systems depending on program orientation and the needs of their constituents.