

Supplemental Information - Curriculum proposals

FS Academic Affairs Committee Review

May 1, 2018 Meeting

Technology & Aviation, K-State Polytechnic

Engineering Technology-Electronic and Computer Engineering Technology Option (AETA-EC)

http://catalog.k-state.edu/preview_program.php?catoid=40&poid=13202

CURRENT: Electronic and computer engineering technology option (AETA-EC) 64 hours required for graduation	PROPOSED: Electronic and computer engineering technology option (AETA-EC) 62 hours required for graduation
Freshman Fall semester (15 credit hours) ECET 100 Basic Electronics4 ECET 250 Digital Logic.....4 EDCEP 111 The University Experience.....1 ENGL 100 Expository Writing I.....3 MATH 100 College Algebra.....3	Freshman Fall semester (16 credit hours) COT 299 Mastering Academic Conversations.....3 ECET 100 Basic Electronics4 ECET 250 Digital Logic.....3 ENGL 100 Expository Writing I.....3 MATH 100 College Algebra.....3
Spring semester (16 credit hours) CHM 110 General Chemistry.....3 CHM 111 General Chemistry Lab1 CMST 250 Hardware and Network Fundamentals.....3 COMM 106 Public Speaking 13 ECET 101 Direct Current Circuits3 MATH 150 Plane Trigonometry3	Spring semester (16 credit hours) CHM 110 General Chemistry.....3 CHM 111 General Chemistry Lab1 CMST 250 Hardware and Network Fundamentals.....3 COMM 106 Public Speaking 13 ECET 101 Direct Current Circuits3 MATH 150 Plane Trigonometry3
Sophomore Fall semester (16 credit hours) ECET 110 Semiconductor Electronics.....4 ECET 201 Alternating Current Circuits.....4 MATH 220 Analytic Geometry and Calculus I.....4 PHYS 113 General Physics I.....4	Sophomore Fall semester (16 credit hours) ECET 110 Semiconductor Electronics.....4 ECET 201 Alternating Current Circuits.....4 MATH 220 Analytic Geometry and Calculus I.....4 PHYS 113 General Physics I.....4
Spring semester (47 credit hours) ECET 240 Electronics Manufacturing3 ECET 335 Industrial Control Topics.....1 ECET 350 Microprocessor Fundamentals4 ENGL 302 Technical Writing3 MET 382 Industrial Instrumentation and Controls.....3 Humanities/Social Science elective.....3	Spring semester (14 credit hours) ECET 240 Electronics Manufacturing3 ECET 335 Industrial Control Topics1 ECET 350 Microprocessor Fundamentals4 ENGL 302 Technical Writing3 MET 382 Industrial Instrumentation and Controls3

Rationale: Digital Logic (ECET 250) has been reduced by 1 credit hour to 3 credits in order to avoid redundancies. The University Experience (EDCEP 111) is being replaced with Mastering Academic Conversations (COT 299) allowing us to maintain 4 tags needed (ethical reasoning, aesthetics, science, empirical and quantitative) and mirroring the credit distribution in the ECET Bachelor.

Impact (i.e. if this impacts another unit) – Statement should include the date when the head of a unit was contacted, and the response or lack of: No impact on other units. No impact on other units. The social science/humanities elective removal is being replace with COT 299, which has an humanities emphasis.

Engineering Technology-Mechanical Engineering Technology Option (AETA-MT)

http://catalog.k-state.edu/preview_program.php?catoid=40&poid=13201

<p>CURRENT: Mechanical engineering technology option (AETA-MT) 68 hours required for graduation</p> <p>Freshman Fall 1st Semester (17 credit hours)</p> <p>ECET 100 Basic Electronics 4</p> <p>EDCEP111 University Experience 1</p> <p>ENGL 100 Expository Writing I..... 3</p> <p>MATH 100 College Algebra..... 3</p> <p>MET 111 Technical Graphics..... 3</p> <p>MET 121 Manufacturing Methods 3</p> <p>Spring 2nd Semester (18 credit hours)</p> <p>CHM 110 General Chemistry 3</p> <p>CHM 111 General Chemistry Lab..... 1</p> <p>COMM 106 Public Speaking 3</p> <p>MATH 150 Plane Trigonometry 3</p> <p>MET 117 Mechanical Modeling and Detailing 3</p> <p>MET 125 Computer-Numerical-Controlled Machine Processes..... 2</p> <p>Humanities/Social Science Elective..... 3</p> <p>Sophomore Fall 3rd Semester (17 credit hours)</p> <p>ETB 310 Applied Data Analysis and Tools..... 3</p> <p>MATH 220 Analytic Geometry and Calculus I..... 4</p> <p>MET 211 Statics 3</p> <p>MET 252 Fluid Power Technology 3</p> <p>PHYS 113 General Physics I..... 4</p> <p>Spring 4th Semester (16 credit hours)</p> <p>ENGL 302 Technical Writing..... 3</p> <p>MET 230 Automated Manufacturing Systems I 3</p> <p>MET 231 Physical Materials and Metallurgy 3</p> <p>MET 245 Material Strength and Testing ... 3</p> <p>MET 264 Machine Design Technology I.. 4</p>	<p>PROPOSED: Mechanical engineering technology option (AETA-MT) 61 hours required for graduation</p> <p>Freshman Fall 1st Semester (16 credit hours)</p> <p>ECET 100 Basic Electronics 4</p> <p>MATH 100 College Algebra..... 3</p> <p>MET 111 Technical Graphics..... 3</p> <p>MET 121 Manufacturing Methods 3</p> <p><u>Humanities/Social Science elective 3</u></p> <p>Spring 2nd Semester (15 credit hours)</p> <p>CHM 110 General Chemistry 3</p> <p>CHM 111 General Chemistry Lab 1</p> <p><u>ENGL 100 Expository Writing I..... 3</u></p> <p>MATH 150 Plane Trigonometry 3</p> <p>MET 117 Mechanical Modeling and Detailing 3</p> <p>MET 125 Computer-Numerical-Controlled Machine Processes 2</p> <p>Sophomore Fall 3rd Semester (17 credit hours)</p> <p><u>COMM 106 Public Speaking 3</u></p> <p>MATH 220 Analytic Geometry and Calculus I..... 4</p> <p>MET 211 Statics 3</p> <p>MET 252 Fluid Power Technology 3</p> <p>PHYS 113 General Physics I..... 4</p> <p>Spring 4th Semester (13 credit hours)</p> <p>MET 230 Automated Manufacturing Systems I 3</p> <p>MET 231 Physical Materials and Metallurgy 3</p> <p>MET 245 Material Strength and Testing ... 3</p> <p>MET 264 Machine Design Technology I.. 4</p>
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Rationale: The Associate of Technology in Engineering Technology-Mechanical option prepares students for entry level technician jobs and the program credits can be applied to the bachelors program, which is accredited by ETAC (Engineering Technology Accreditation Commission) of ABET (Accreditation Board for Engineering and Technology). Our program addresses three overarching areas: a) design, b) manufacturing, and c) industrial automation.

This prepares our graduates to meet current and emerging workforce needs. Changes in curriculum will reduce the total credits to 61. Further reductions will jeopardize the integrity of the program, the ability to maintain standards, program mission, expected student outcomes, and the preparation of graduates to meet industry advisory board requests.

Impact (i.e. if this impacts another unit) – Statement should include the date when the head of a unit was contacted, and the response or lack of:

Polytechnic Math/Science: On March 1st, matrix team, comprised of representatives of multiple academic disciplines at K-State Polytechnic met to discuss proposed mechanical engineering technology program course and curriculum changes. After discussion with the matrix team ENGL 302 and ETB 310 Data Analysis and Tools courses were removed from the associates program as requirement at the request of mechanical faculty. ENGL 302 and ETB 310 were moved to bachelors program. Math/Science, humanities, social science, and matrix team have been consulted and acknowledge the changes.

B.S. - Engineering Technology-Mechanical Engineering Technology Option (BETB-MT)
http://catalog.k-state.edu/preview_program.php?catoid=40&poid=13200

CURRENT: Mechanical engineering technology option (BETB-MT) 130 hours
 required for graduation

Freshman Fall 1st Semester (17 credit hours)

ECET 100	Basic Electronics	4
EDCEP111	University Experience	1
ENGL 100	Expository Writing I.....	3
MATH 100	College Algebra.....	3
MET 111	Technical Graphics.....	3
MET 121	Manufacturing Methods	3

Spring 2nd Semester (18 credit hours)

CHM 110	General Chemistry.....	3
CHM 111	General Chemistry Lab.....	1
COMM 106	Public Speaking I.....	3
MATH 150	Plane Trigonometry	3
MET 117	Mechanical Modeling and Detailing	3
MET 125	Computer-Numerical-Controlled Machine Processes.....	2
	Humanities/Social Science Elective.....	3

Sophomore Fall 3rd Semester (17 credit hours)

ETB 310	Applied Data Analysis and Tools.....	3
MATH 220	Analytic Geometry and Calculus I.....	4
MET 211	Statics	3
MET 252	Fluid Power Technology	3
PHYS 113	General Physics I.....	4

Spring 4th Semester (17 credit hours)

MATH 221	Analytic Geometry and Calculus II	4
MET 230	Automated Manufacturing Systems I	3
MET 231	Physical Materials and Metallurgy	3
MET 245	Material Strength and Testing ...	3
MET 264	Machine Design Technology I ..	4

Junior Fall 5th Semester (15 credit hours)

ECET304	Electric Power and Devices	3
ENGL 200	Expository Writing II	3
MET 246	Dynamics of Machines	3
MET 314	Finite Element Analysis and Design Modeling	3
MET 353	Fluid Mechanics	3

PROPOSED: Mechanical engineering technology option (BETB-MT) 122 hours
 required for graduation

Freshman Fall 1st Semester (16 credit hours)

ECET 100	Basic Electronics	4
MATH 100	College Algebra.....	3
MET 111	Technical Graphics.....	3
MET 121	Manufacturing Methods	3
	Humanities/Social Science elective	3

Spring 2nd Semester (15 credit hours)

CHM 110	General Chemistry.....	3
CHM 111	General Chemistry Lab	1
ENGL 100	Expository Writing I.....	3
MATH 150	Plane Trigonometry	3
MET 117	Mechanical Modeling and Detailing	3
MET 125	Computer-Numerical-Controlled Machine Processes	2

Sophomore Fall 3rd Semester (17 credit hours)

COMM 106	Public Speaking I.....	3
MATH 220	Analytic Geometry and Calculus I.....	4
MET 211	Statics	3
MET 252	Fluid Power Technology	3
PHYS 113	General Physics I.....	4

Spring 4th Semester (16 credit hours)

ENGL 200	Expository Writing II	3
MET 230	Automated Manufacturing Systems I	3
MET 231	Physical Materials and	3
	Metallurgy	3
MET 245	Material Strength and Testing ...	3
MET 264	Machine Design Technology I ..	4

Junior Fall 5th Semester (15 credit hours)

ECET 304	Electric Power and Devices	3
ETB 310	Applied Data Analysis and Tools.....	3
MET 246	Dynamics of Machines	3
MET 314	Finite Element Analysis and Design Modeling	3
MET 365	Machine Design Technology II ..	3

Spring 6th Semester (15 credit hours)

ENGL 302	Technical Writing.....	3
MET 346	Elements of Mechanisms.....	3

Spring 6th Semester (15 credit hours)		MET 353	Fluid Mechanics	3	
ENGL 302	Technical Writing	MET 382	Industrial Instrumentation and Controls	3	
MET 346	Elements of Mechanisms.....				
MET 365	Machine Design Technology II.....		<u>*Technical Elective.....</u>	<u>3</u>	
MET382	Industrial Instrumentation and Controls				
MET 471	Thermodynamics and Heat Transfer				
Senior Fall 7th Semester (17 credit hours)		Senior Fall 7th Semester (13 credit hours)			
MET 462	Senior Design Project I.....	1	MET 462	Senior Design Project I.....	1
MET481	Automated Manufacturing Systems II	3	MET 481	Automated Manufacturing Systems II	3
PHYS 114	General Physics II.....	4	MET 471	Thermodynamics and Heat Transfer	3
Humanities/Social Science Elective.....	3		Humanities/Social Science elective	3	
*Humanities/Social Science Elective.....	3		*Computer Elective	3	
Technical Elective.....	3				
Spring 8th Semester (14 credit hours)		Spring 8th Semester (15 credit hours)			
MET 464	Senior Design Project II	2	MET 464	Senior Design Project II	2
Business Elective	3		Business Elective	3	
Computer Elective	3		**Math/Science Elective	4	
*Technical Elective.....	3		*Technical Elective.....	3	
*Humanities/Social Science elective	3		*Humanities/Social Science elective	3	
*Marked electives must be 300 and above upper-level courses.		*Marked electives must be 300 and above upper-level courses.			
		<u>** MATH 221, PHYS 114 or approved Math/Science Elective.</u>			

Rationale: The MET program is accredited by ETAC (Engineering Technology Accreditation Commission) of ABET (Accreditation Board for Engineering and Technology) and prepares its graduates with a broader skill set than a degree with a single focus. Our program addresses three overarching areas: a) design, b) manufacturing, and c) industrial automation. This prepares our graduates to meet current and emerging workforce needs. Changes in curriculum will reduce the total credits to 122. Further reductions will jeopardize the integrity of the program, the ability to maintain national accreditation, standards, program mission, expected student outcomes, and the preparation of graduates to meet industry advisory board requests.

Impact (i.e. if this impacts another unit) – Statement should include the date when the head of a unit was contacted, and the response or lack of:

Polytechnic Math/Science: On March 1st matrix team, comprised of representatives of multiple academic disciplines at K-State Polytechnic met to discuss proposed mechanical engineering technology program course and curriculum changes. After discussion with the matrix team MATH 221 Calculus II and PHYS 114 Physics II courses were removed as requirements at the request of mechanical faculty and a 4 credit hour Math/Science elective was added at the request of math/science faculty and other matrix team members. Further, at the recommendation of the matrix team, humanities and social sciences was reduced from four to three courses. This change will not have significant impact because students still need to take three humanities and social science courses. Math/Science, humanities, social science, and matrix team have been consulted and acknowledge the changes.

English: Changes in the English sequence between ENGL 200 and ENGL 302 were made at the suggestion of English faculty representative of the matrix team.