

# Barton Community College

## Transfer Program to University of Kansas

### B.S. Engineering Physics

(Aerospace Systems, Chemical Systems, Digital Electronic Systems, Electromechanical Control Systems)

Number to call at KU for advising: (785) 864-4626

Website: [www.physics.engr.ku.edu](http://www.physics.engr.ku.edu)

Transfer students must have at least a 2.5 GPA and proof of competency in calculus.

### Requirements (all students):

#### Aerospace Systems:

### Requirements (all students):

The only classes listed are the ones that could be taken at a 2 year College.

#### Aerospace Systems:

The courses listed below are **REQUIRED**. These courses **MAY** be taken to complete the **KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

#### **KU Course Requirements**

#### **BARTON Equivalents**

<b>MATHEMATICS</b>					<b>Core</b>
MATH 121 Calculus I	5		MATH 1834 Analytical Geometry and Calculus	5	GE12
MATH 122 Calculus 2	5		MATH 1836 Calculus 2 (must take MATH 1832+1834+1836)	5	

<b>NATURAL SCIENCES</b>					<b>Core</b>
PHSX 211 & 216 Engineering Physics	5		PHYS 1604 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHYS 1606 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5		CHEM 1806 College Chemistry I	5	GE12, GE3N

#### Chemical Systems:

The courses listed below are **REQUIRED**. These courses **MAY** be taken to complete the **KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

#### **KU Course Requirements**

#### **BARTON Equivalents**

<b>MATHEMATICS</b>					<b>Core</b>
MATH 121 Calculus I	5		MATH 1834 Analytical Geometry and Calculus	5	GE12
MATH 122 Calculus 2	5		MATH 1836 Calculus 2 (must take MATH 1832+1834+1836)	5	

<b>NATURAL SCIENCES</b>					<b>Core</b>
PHSX 211 & 216 Engineering Physics	5		PHYS 1604 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHYS 1606 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5		CHEM 1806 College Chemistry I	5	GE12, GE3N
CHEM 135 Chemistry 2	5		CHEM 1808 College Chemistry II	5	GE3N, GE12
CHEM 330 & 331 Organic Chemistry	5		CHEM 1814 Organic Chemistry 1	5	

#### Digital Electronic Systems:

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

**KU Course Requirements**

**BARTON Equivalents**

<b>MATHEMATICS</b>				<b>Core</b>
MATH 121 Calculus I	5	MATH 1834 Analytical Geometry and Calculus	5	GE12
MATH 122 Calculus 2	5	MATH 1836 Calculus 2 (must take MATH 1832+1834+1836)	5	

<b>NATURAL SCIENCES</b>				<b>Core</b>
PHSX 211 & 216 Engineering Physics	5	PHYS 1604 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics		PHYS 1606 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5	CHEM 1806 College Chemistry I	5	GE12, GE3N

**Electromechanical Control Systems:**

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

**KU Course Requirements**

**BARTON Equivalents**

<b>MATHEMATICS</b>				<b>Core</b>
MATH 121 Calculus I	5	MATH 1834 Analytical Geometry and Calculus	5	GE12
MATH 122 Calculus 2	5	MATH 1836 Calculus 2 (must take MATH 1832+1834+1836)	5	

<b>NATURAL SCIENCES</b>				<b>Core</b>
PHSX 211 & 216 Engineering Physics	5	PHYS 1604 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics		PHYS 1606 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5	CHEM 1806 College Chemistry I	5	GE12, GE3N

**KU Core Curriculum (additional requirements not covered by degree requirements)**

Additional courses that satisfy the KU Core are continuously updated and available at <http://kucore.ku.edu/courses>.

**KU Course Requirements**

**Barton County Equivalents**

<b>Goal 1: Critical Thinking and Quantitative Literacy (2 Units)</b>				
<b>Outcome 1</b>		<b>GE11</b>		
COMS 230 Fundamentals of Debate	3	COMM 1212 Fundamentals of Debate		3
HWC 204 Western Civilization I	3	HIST 1409 Hist & Phil of West Culture to 1500		3
HWC 205 Western Civilization II	3	HIST 1411 Hist & Phil of West Culture 1500-present		3
ENGL 211 Introduction to Drama	3	LITR 1228 Introduction to Drama		3
PHIL 140 Introduction to Philosophy	3	PHIL 1602 Introduction to Philosophy		3
PHIL 160 Intro to Ethics	3	PHIL 1604 Systematic Ethics		3
PHIL 148 Reason and Argument	3	PHIL 1605 Reason and Argument		3
PHSX 114 College Physics	4	PHYS Physics 1		5
PHSX 211/212 General Physics I	5	PHYS 1604 Engineering Physics I		5
SOC 104 Elements of Sociology	3	SOCI 1100 Intro to Sociology		3
SOC 160 Social Problems and American Values	3	SOCI 1104 Contemporary Social Problems		3
<b>Outcome 2</b>		<b>GE12</b>		
CHEM 130 Foundations of Chemistry I	5	CHEM 1806 College Chemistry I		5
CHEM 135 Foundations of Chemistry II	5	CHEM 1808 College Chemistry II		5
MATH 101 College Algebra	3	MATH 1826 Intermediate and College Algebra		5
MATH 101 College Algebra	3	MATH 1828 College Algebra		3

MATH 115 Calculus	3	MATH 1831 Business Calculus	3
MATH 125 Calculus	4	MATH 1832 Analytical Geometry and Calculus	5
PHSX 114 College Physics I	5	PHYS 1600 Physics I	5
PHSX 211/216 General Physics I	5	PHYS 1604 Engineering Physics I	5
ACCT 200 Financial Accounting	4	ACCT 1614 & 1616 Accounting 1 & 2	6
MATH S365 Elementary Statistics	3	MATH/STAT 1829 Elements Of Statistics	3
		STAT 1840 Business & Economic Stats	3
		STAT 1845 Business & Economic Stats 2	3
		MATH 1834 Anal Geom & Calc 2	5
		MATH 1840 Intro to Contemporary Math	3

### Goal 2: Communication (3 Units) -two from outcome 1 and one outcome 2

Outcome 1		GE21	
ENGL 101 Composition	3	ENGL 1203 English Composition - Honors	3
ENGL 101 Composition	3	ENGL 1204 English Composition I	3
ENGL 102 Critical Reading and Writing	3	ENGL 1206 English Composition II	3
ENGL 102 Critical Reading and Writing	3	ENGL 1207 English Composition II - HONORS	3
ENGL 211 Introduction to Drama	3	LITR 1228 Introduction to Drama	3
HWC 204 Western Civ 1	3	HIST 1409 Hist and Phil of West Cul to 1500	3
Outcome 2		GE22	
COMS 130 Speaker-Audience Communication	3	COMM 1230 Public Speaking	3

### Goal 3: Breadth of Knowledge (3 Units) -one from each category

Arts & Humanities		GE3H	
	3	ARTS 1200 Art Appreciation	3
REL 104 Intro to Religious Studies	3	RELI 1311 World Religions	3
HA 150 Western Art - Ancient to Medieval	3	ARTS 1201 Survey of Art History	3
ART 101 Drawing I	3	ARTS 1214 Drawing I	3
		HIST 1400 American History to 1877	3
HIST 128 Hist of US through Civil War	3	HIST 1401 American History 1865-present	3
HIST 129 Hist of US after Civil War	3	HIST 1402 American History 1877-present	3
		HIST 1403 American History to 1865	3
		HIST 1416 American Military History	3
		HIST 1450 Hist of World Civilization to 1500	3
		HIST 1452 Hist of World civilization 1500-present	3
		LITR 1212 The Short Story	3
		LITR 1414 The Novel	3
		LITR 1215 World Literature	3
ENGL 211 Introduction to Drama	3	LITR 1228 Introduction to Drama	3
		LITR 1234 Shakespeare	3
PHIL 140 Introduction to Philosophy	3	PHIL 1602 Introduction to Philosophy	3
PHIL 160 Ethics	3	PHIL 1604 Introduction to Ethics	3
PHIL 148 Reason and Argument	3	PHIL 1605 Reason and Argument	3
		RELI 1311 World Religions	3
THR 100 Introduction to Theater	3	THEA 1300 Introduction to Theater	3
THR 106 Acting I	3	THEA 1302 Acting I	3
Natural Sciences		GE3N	
CHEM 110 College Chemistry	5	CHEM 1802 Fund of General Chemistry	5
CHEM 130 Foundations of Chemistry I	5	CHEM 1806 College Chemistry I	5
CHEM 135 Foundations of Chemistry II	5	CHEM 1808 College Chemistry II	5
BIOL 100/102 Principles of Biology	3	LIFE 1402 Principles of Biology	5
BIOL 101 Principles of Biology - Honors	3	LIFE 1403 Principles of Biology - Honors	5
		LIFE 1406 Principles of Botany	5
		LIFE 1410 Principles of Zoology	5
BIOL 200/203 Basic Microbiology	3	LIFE 1412 Principles of Microbiology	5
EVRN 148 Sci Prins of Environmental Studies	3	LIFE 1413 Environment Science	3
		PHSC 1400 Physical Science	5
GEOL 101 The Way the Earth Works	3	PHSC 1402 Intro to Geology	5
GEOG 104 Prins of Physical Geography	3	PHSC 1404 Physical Geography	3

ASTR 191 Contemporary Astronomy	3	PHSC 1408 Astronomy	3
		PHSC 2408 Astronomy	3
		PHSC 2410 Conservation - Natural Resources	3
PHSX 114 College Physics I	4	PHYS 1600 Physics I	5
PHSX 211/216 General Physics 1	5	PHYS 1604 Engineering Physics 1	5
PHSX 212/236 General Physics 2	4	PHYS 1606 Engineering Physics 2	5
		STAT 1845 Business & Economics Stats 2	3
<b>Social Sciences</b>		<b>GE3S</b>	
ANTH 100 General Anthropology	3	ANTH 2812 Intro to Anthropology	3
ANTH 108 Intro to Cultural Anthropology	3	ANTH 1816 Cultural Anthropology	3
EPSY S305 Preschool Child	3	CHLD 1505 Child Development	3
COMS 244 Intro Interpersonal Communications	3	COMM 1200 Interpersonal Communications	3
		COMM 1220 Organizational Communications	3
ECON 104 Introductory Economics	3	ECON 1607 Intro to Economics	3
ECON 142 Prin of Microeconomics	3	ECON 1612 Prin of Microeconomics	3
ECON 144 Prin of Macroeconomics ECON 142	3	ECON 1610 Prin of Macroeconomics	3
		HIST 1425 Women and the American Experience	3
POLS 110 Intro to US Politics	3	POLS 1800 Government of the United States	3
		POLS 1801 Introduction to Political Science	3
POLS 170 Intro to International Relations	3	POLS 1804 International Relations	3
PSYC 104 General Psychology	3	PSYC 1000 General Psychology	3
		PSYC 1014 Developmental Psychology	3
PSYC 120 Personality	3	PSYC 1034 Theories of Personality	3
SOC 104 Elements of Sociology	3	SOCI 1100 Introduction to Sociology	3
		CHLD 1505 Preschool Child	3

**Goal 4: Culture and Diversity (One Unit from each outcome)**

<b>Outcome 1</b>		<b>AE41</b>	
SOC 104 Elements of Sociology	3	SOCI 1100 Introduction to Sociology	3
SOC 160 Social Problems and American Values	3	SOCI 1104 Contemporary Social Problems	3
<b>Outcome 2</b>		<b>AE42</b>	
ANTH 100 General Anthropology	3	ANTH 2812 Intro to Anthropology	3
ANTH 108 Intro to Cultural Anthropology	3	ANTH 1816 Cultural Anthropology	3
REL 104 Intro to Religious Studies	3	RELI 1311 World Religions	3
GEOG 100 World Regional Geography	3	ANTH/GEOG 1819 World and Regional Geography	3
HA 150 Western Art: Ancient to Medieval	3	ARTS 1201 Art History Survey I	3
HWC 204 Western Civilization I	3	HIST 1409 Hist and Phil of West Culture to 1500	3
HWC 205 Western Civilization 2	3	HIST 1411 Hist and Phil of West Culture 1500-present	3
GERM 104 Elementary German	5	LANG 1900 Elementary German	5
GERM 108 Elementary German II	5	LANG 1902 Elementary German 2	5
GERM 201 Intermediate German I	3	LANG 1904 Intermediate German	3
GERM 202 Intermediate German II	3	LANG 1905 Intermediate German 2	3
SPAN 212 Intermediate Spanish	3	LANG 1912 Intermediate Spanish	3
		LITR 1215 World Literature	3
POLS 170 International Relations	3	POLS 1804 International Relations	3
		POLS 1810 the Middle East in Modern Times	3

**Goal 5: Social Responsibility and Ethics (1 Unit from either outcome)**

<b>Outcome 5</b>		<b>AE51</b>	
PHIL 160 Introduction to Ethics	3	PHIL 1604 Systematic Ethics	3
SOC 160 Social Problems and American Values	3	SOCI 1104 Contemporary Social Problems	3
<b>Outcome 5</b>		<b>AE52</b>	
No Equivalencies Established			

**Goal 6: Integration and Creativity (1 Unit)**

<b>Outcome 1</b>		<b>AE61</b>	
No Equivalencies Established			