

## 2 + 2 Joint Articulation Transfer Agreement

### Bachelor of Science in Engineering (Specialization in Mechatronics)

#### Colorado State University – Pueblo And Northeastern Junior College

<b>B.S. Requirements at CSU-Pueblo</b>			<b>A.S. Requirements at NJC</b>		
<b>Lower Division General Education Requirements</b>			<b>Equivalent Courses at NJC</b>		
Course #	Course Title	Credits	Course #	Course Title	Credits
ENG 101	Composition I	3	ENG 121	English Composition I	3
ENG 102	Composition II	3	ENG 122	English Composition II	3
SPCOM 103	Speaking and Speaking	3	COM 115	Public Speaking	3
Humanities	Select from statewide Gen Ed Core	6	Humanities	Select from statewide Gen Ed Core	9
Social Science	Select from statewide Gen Ed Core	6	Social Science	Select from statewide Gen Ed Core	6
History	Select from statewide Gen Ed Core	3	History	Select from statewide Gen Ed Core	3
MATH 126	Calculus and Analytic Geometry I	5	MAT 201	Calculus I	5
PHYS 221/L	General Physics I and Lab	5	PHY 211	Physics: Calculus Based I	5
PHYS 222/1	General Physics II and Lab	5	PHY 212	Physics: Calculus Based II	5
<b>Subtotal</b>		<b>39</b>	<b>Subtotal</b>		<b>42</b>
<b>Additional Math Requirements</b>			<b>Equivalent Courses at NJC</b>		
MATH 207	Matrix and Vector Algebra with Applications	2			
MATH 224	Calculus & Analytic Geometry II	5	MATH 202	Calculus II	5
MATH 337	Differential Equations I	3			
<b>Subtotal</b>		<b>10</b>	<b>Subtotal</b>		<b>5</b>
<b>Major Course Requirements (Lower Division)</b>			<b>Equivalent Courses at NJC</b>		
EN 101	Introduction to Engineering	2	*CIS 118	*Introduction to PC Applications *1 credit may be "carried over to the Technical Electives Section"	2 + *(1)
EN 103	Problem Solving for Engineers	3			
EN 107	Engineering Graphics	2			
EN 211	Engineering Mechanics I	3	EGG 211	Engineering Mechanics – Statics	3
EN 212	Engineering Mechanics II	3	EGG 212	Engineering Mechanics – Dynamics	3
EN 231/L	Circuit Analysis and Lab	5			
EN 260	Basic Electronics	2			
EN 263	Electromechanical Devices	3			
<b>Subtotal</b>		<b>23</b>	<b>Subtotal</b>		<b>8</b>
<b>Major Course Requirements (Upper Division)</b>			<b>Equivalent Courses at NJC</b>		
EN 321	Thermodynamics	3			
EN 324/L	Materials Science Engr & Lab	4			
EN 343	Engineering Economy	3			
EN 360	Control Systems I	3			
EN 361	Digital Electronics	4			
EN 362	Introduction to Mechatronics	3			
EN 363	Virtual Machine Design	3			
EN 365	Stochastic Systems Engineering	4			
EN 430	Project Planning and Control	3			

EN 441	Manufacturing Processes	4			
EN 443	Quality Control & Reliability	3			
EN 460	Control Systems II	3			
EN 462	Industrial Robotics	3			
EN 473	Computer Integrated Manufacturing	3			
EN 488	Engineering Design Project	3			
EN 493	Senior Seminar	2			
<b>Subtotal</b>		<b>51</b>	<b>Subtotal</b>		<b>0</b>
EN	Advisor Approved Tech Electives	3	*CIS 118	*Introduction to PC Applications <b>*1 credit "carried over" from Major Course Requirements Section</b>	1
Math/Science Electives	Advisor Approved Electives	3	BIO 111 or CHE 111	General College Biology I Or General College Chemistry I	5
<b>Subtotal</b>		<b>6</b>	<b>Subtotal</b>		<b>6</b>
<b>Total Credit Required for A.S.</b>					<b>61</b>
<b>Total Transfer Credit Accepted for A.S.</b>					<b>60</b>
<b>Total Additional Credit Required for B.S.</b>					<b>71</b>
<b>Total B.S. Degree Requirements</b>					<b>131</b>

Students who successfully complete this program as specified are eligible to apply for a *Destination CSU-Pueblo* scholarship.

This articulation transfer agreement replaces all previous agreements between NJC and CSU-Pueblo in Bachelor of Science in Engineering (Specialization in Mechatronics). This agreement will be reviewed annually and revised (if necessary) as mutually agreed.

cam: 11/11/09  
revised: 06/19/10