

# INDUSTRIAL AND SYSTEMS ENGINEERING, BACHELOR OF SCIENCE (BS)/PROFESSIONAL PILOT (CCBC)

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
AVIP 160	Private Pilot Flight Theory (taken at CCBC)	7
AVIP 170	Private Pilot Flight Certification (taken at CCBC)	3
MATH 125	Precalculus	4
ENGR 110	Introduction to Engineering	2
SUBJ 139	Foundations of Academic Discovery	3
<b>Hours</b>		<b>19</b>
<b>Spring</b>		
AVIP 120	Foundations and Development of Aviation (taken at CCBC)	3
CIST 100	Introduction to Information Technology (taken at CCBC)	3
WRIT 101	English Composition (taken at CCBC)	3
MATH 230	Calculus II	4
PHYS 216	University Physics 1 with Lab	4
<b>Hours</b>		<b>17</b>
<b>Second Year</b>		
<b>Fall</b>		
AVIP 180	Instrument Flight Theory (taken at CCBC)	7
AVIP 190	Instrument Flight Rating (taken at CCBC)	2
LITR 210	Concepts of Literature (taken at CCBC)	3
ENGR 130	Engineering Computing Tools	2
PHYS 217	University Physics 2 with Lab	4
<b>Hours</b>		<b>18</b>
<b>Spring</b>		
AVIP 205	Aircraft Engines & Systems (taken at CCBC)	4
METR 140	Foundations in Meteorology (taken at CCBC)	4
ENGR 210	Statics	3
ENGR 120	Engineering Design Tools	2
CHEM 107 & CHEM 111	General Chemistry I and General Chemistry I Lab	4
<b>Hours</b>		<b>17</b>
<b>Third Year</b>		
<b>Fall</b>		
AVIP 215	Commercial Flight Theory (taken at CCBC)	5
AVIP 220	Commercial Flight Certification I (taken at CCBC)	3
MATH 231	Calculus III	4
MATH 232	Linear Algebra	3
ENGR 340	Engineering Economics	3
<b>Hours</b>		<b>18</b>

<b>Spring</b>		
AVIP 225	Commercial Flight Certification II (taken at CCBC)	3
AVIP 260	Human Factors Theory (taken at CCBC)	3
AVIP 270	Aerodynamics of Flight (taken at CCBC)	3
ENGR 220	Engineering Materials	3
Creative & Aesthetic Inquiry ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
ENGR 250	Circuit Analysis I	3
<b>Hours</b>		<b>18</b>

<b>Fourth Year</b>		
<b>Fall</b>		
AVIP 275	Certified Flight Instructor Theory (taken at CCBC)	2
Select two of the following:		3-4
AVIP 250	Multi-Engine Rating (taken at CCBC)	
AVIP 280	Certified Flight Instructor - Airplane (taken at CCBC)	
AVIP 285	Certified Flight Instructor - Instruments (taken at CCBC)	
ISE 311	Introduction to Operations Research	3
ISE 372	Manufacturing Systems Design and Analysis	3
ISE 373	Quality Engineering	3
ISE 402	Work Design	3
<b>Hours</b>		<b>17-18</b>

<b>Spring</b>		
ISE 370	Design of Industrial Systems and Processes	3
ISE 420	Simulation of Industrial Systems	4
ISE 421	Supply Chain & Logistics Engineering	3
ISE 430	Production Planning & Control	3
ISE 440	Health Care Systems Engineering	3
ISE Elective		2
<b>Hours</b>		<b>18</b>

<b>Fifth Year</b>		
<b>Fall</b>		
Humanities Inquiry ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
MECH 330	Introduction to Mechatronics	4
ISE 410	Engineering Project Management	3
ISE 442	Human Factors Engineering	3
ISE 487	Industrial and Systems Engineering Senior Project I	1
ISE Elective		3
<b>Hours</b>		<b>17</b>

<b>Spring</b>		
ISE 488	Senior Project II	3
ISE Elective		3
ISE 460	Engineering Risk Analysis	3
STAT 350	Applied Statistics	3
ENGL 205	Introduction to Professional Writing	3
Select one of the following:		3

COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLI 235	Civil Discourse and Democracy	
	<b>Hours</b>	<b>18</b>
<b>Total Hours**</b>		<b>177-178</b>