College of Basic and Applied Sciences — Upper Division Form 2020-2021
(Requires 128 total credit hours)

Student name _____ Student # _____

Major **Mechatronics Engineering** Minor Optional

Concentration **N/A** E-mail _____

Instructions: For students graduating in Summer 2020 or later. ***One (1) copy signed by major advisor (and minor advisor if minor is completed) should be filed with the Graduation Analyst in DSB 120 three semesters prior to graduation. An Intent to Graduate form must be submitted with this form.***

General Education	Course	Semester	Grade	Notes	Credit Hours
COMMUNICATION (9 hours)	**ENGL 1010**				3
	ENGL 1020				3
	COMM 2200				3
HISTORY (6 hours) Choose two: HIST 2010, HIST 2020, HIST 2030					3
					3
HUMANITIES AND/OR FINE ARTS (9 hours) Choose 1: ENGL 2020, 2030, or HUM 2610. Choose two different subjects: ANTH 2210, ART 1030 or 1920, DANC 1000, HIST 1010, 1020, 1110, 1120, MUS 1030, PHIL 1030, THEA 1030					3
					3
					3
MATHEMATICS (3 hours) Choose one: MATH 1010, 1530, 1630, 1710, 1720, 1730, 1810, **1910**				**MATH 1910 is required for major**	3
NATURAL SCIENCES (8 hours) Choose two different subjects: ASTR 1030/1031, BIOL 1030/1031, BIOL 1110/1111,BIOL 2010/2011,BIOL 2020/2021, CHEM 1010/1011**,** CHEM 1030/1031,**CHEM 1110/1111**, GEOL 1030/1031,GEOL 1040/1041, PGEO 1030, PHYS 1110, PHYS 2010/2011,**PHYS 2110/2111**, PSCI 1030/1031, PSCI 1130/1131				*see major courses for required sequences/pre-requisites; **CHEM 1110/1111 recommended**	4
				*see major courses for required sequences/pre-requisites; **PHYS 2110/2111 recommended**	4
SOCIAL/BEHAVIORAL SCIENCES (6 hours**)** Choose two different subjects**:** AAS 2100, ANTH 2010, ECON 2410, ECON 2420, EMC/JOUR/RIM 1020, GEOG 2000, GS 2010, HLTH 1530/1531, PS 1010, PS 1005, PSY 1410, RS 2030, SOC 1010, 2010, WGST 2100					3
					3
				Hours Required	41

Major Courses (2.0 GPA required)	Course	Semester	Grade	Notes	Credit Hours
Engineering Fundamentals	**ENGR 1100**			Pre: MATH 1730	3
Introduction to Materials Science and Engineering	**ENGR 2210**			Pre: CHEM 1110/1111	3
Introduction to Engineering Design	**ENGR 2100**				3
Statics	**ENGR 2110**			Pre: MATH 1910, ENGR 1100, PHYS 2111	3
Dynamics	**ENGR 2120**			Pre: ENGR 2110, MATH 1920	3
Electrical Circuit Analysis I	**ENGR 2130**			Pre: ENGR 1100, MATH 1910, PHYS 2121	3
Electrical Circuit Analysis II	**ENGR 3510**			Pre: ENGR 2130, MATH 3120	3
Digital Circuits Fundamentals	**ENGR 3520**			Pre: ENGR 2130, CSCI 1170	3
Electronics and Instrumentation	**ENGR 3530**			Pre: ENGR 3510	3
Introduction to Feedback Control	**ENGR 3540**			Pre: ENGR 2120, 3510, 3520, 3530, MATH 3120	3
Fluid Mechanics	**ENGR 3550**			Pre: ENGR 2120, MATH 3110	3
Mechanics of Materials	**ENGR 3560**			Pre: ENGR 2210, ENGR 2110, MATH 1920	3
Kinematics and Dynamics of Machinery	**ENGR 3590**			Pre: ENGR 2120, CSCI 1170	3
Technical Project Management and Soft Skills	**ENGR 3915**			Pre: Junior/Senior	3
Engineering Economy	**ENGR 3970**			Pre: Junior/Senior	3

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FE Exam Preparation	**ENGR 4500**			Pre: Sr. standing, POD Fall only	1
Topics in Mechatronics Engineering	**ENGR 4501**				3
Programmable Logic Controllers and Networks	**ENGR 4510**			Pre: ENGR 3520, 3530	3
Electrical Power and Machinery	**ENGR 4520**			Pre: ENGR 3510	3
Controls and Optimization	**ENGR 4530**			Pre: ENGR 3520	3
Mechatronic System Design	**ENGR 4580**			Pre: ENGR 3550, 3590	3
Automation System Design	**ENGR 4590**			Pre: ENGR 4580 & ENGR 4510	3
				Hours Required	64

Supporting and Elective Courses				
Course	**Semester**	**Grade**	**Notes**	**Credit Hours**
CSCI 1170 – Computer Science I			MATH 1730 with a C(2.0) or higher, ACT MATH of 26, or Calculus Placement test with satisfactory score	4
MATH elective				3
MATH 1910 – Calculus I			Pre-req: MATH 1730 with a C(2.0) or higher, ACT MATH of 26, or Calculus Placement test with satisfactory score; must earn a grade of C(2.0) or higher; Credits can count in general education	0-4
MATH 1920 – Calculus II			Pre: MATH 1910 with a C(2.0) or higher	4
MATH 3110 – Calculus III			Pre: MATH 1920	4
MATH 3120 – Differential Equations			Pre: MATH 1920 with a C(2.0) or higher	3
CHEM 1110/1111 – General Chemistry			Pre: high school chemistry; Credits can count in general education	0-4
PHYS 2110/2111 – Calculus Based Physics I			Pre: MATH 1910 with a C (2.0) or higher, Credits can count in general education	0-4
PHYS 2120/2121 – Calculus Based Physics II			Pre: PHYS 2110/2111, MATH 1920 with a C(2.0) or higher	4
			Hours Required	23-34

Optional Minor – Mechatronics Engineering does NOT require a minor, but a Math minor is encouraged **(If a Math minor is chosen, ALL COURSES USED TO FULFILL MATH MINOR REQUIREMENTS MUST BE COMPLETED WITH A GRADE OF C(2.0) OR BETTER).**				
Course	**Semester**	**Grade**	**Notes**	**Credit Hours**
			Hours Required	

1. Degrees require a minimum of 120 semester hours completed with a cumulative and major GPA of 2.0 or higher. Minimum of 36 upper-division hours (3000/4000 level) and a minimum of 50 senior college hours (earned at four-year University) also required.

2. A minimum of 12 credits must be earned at the 3000/4000 level in each major

Signed:		
	Major Advisor	**Date**