Young Harris College/University of Georgia
B.S. Mathematics/B.S. Mechanical Engineering
Fall 2019

YEAR ONE
Young Harris College

Fall Semester		Hours	Spring Semester		Hours
MATH 2201	***Calculus I***	4	***MATH 2202***	***Calculus II***	4
ENGR 1120	***Engineering Graphics***	2	**BIOL 1107&L**[1]	**Introductory Biology I**	4
ENGL 1101	***English Composition I***	3	ENGL 1102	English Composition II	3
PSYC 1102	Introduction to Psychology	3	HIST 2111	American History I	3
ARTS 1100	Art Appreciation	3	MATH 2450	Intro to Abstract Mathematics	3
FOUN 1000	First Year Foundation	2			
Total Credit Hours		**17**	**Total Credit Hours**		**17**

YEAR TWO
Young Harris College

Fall Semester		Hours	Spring Semester		Hours
MATH 2203	**Calculus III**	4	**MATH 3610**	**Differential Equations**	3
PHYS 2111	***University Physics I***	4	**PHYS 2112**	**University Physics II**	4
MATH 4661	Real Analysis I	3	POLI 1100	American Government	3
MATH XXXX	Math Elective	3	RELI 1200	World Religions	3
PHIL 1100	Philosophical Questions I	3	MATH 4662	Real Analysis II	3
Total Credit Hours		**17**	**Total Credit Hours**		**16**

YEAR THREE
Young Harris College

Fall Semester		Hours	Spring Semester	Apply to UGA by March 1	Hours
CHEM 1211	**General Chemistry I**	4	***ENGR 2120***	***Engineering Statics***	3
CSCI 1610	***Computer Programming I***	4	HIST 1111	Survey of Civilization I	3
MATH XXXX[2]	See notes	3	COMM 1100	Intro to Public Speaking	3
SPAN 1101	Elementary Spanish I	3	MATH 3460	Linear Algebra	3
MATH 4461[3]	Abstract Algebra I	3	MATH 4462	Abstract Algebra II	3
Total Credit Hours		**17**	**Total Credit Hours**		**15**

YEAR THREE > YEAR FOUR
Apply to Full BSME Major (Summer Application Cycle)

YEAR FOUR
University of Georgia

Fall Semester		Hours	Spring Semester		Hours
MCHE 1940	ME Design Studio/Prof. Practice	3	MCHE 2990	Engineered Systems in Society	3
ENGR 2130	**Dynamics**	3	**ENGR 3160**	**Fluid Mechanics**	3
ENGR 2140	**Strength of Materials**	3	**ENGR 3150**	**Heat Transfer**	3
ENGR 2170	**Electrical Circuits**	3	MCHE 4000	ME Professional Practice	2
ENGR 3140	**Thermodynamics I**	3	MCHE 3410	Numerical Methods for ME	3
				Mechanical Engineering Elective	3
Total Credit Hours		**15**	**Total Credit Hours**		**17**

YEAR FIVE
University of Georgia

Fall Semester		Hours	Spring Semester		Hours
MCHE 4910	ME Capstone Design Project I	2	MCHE 4920	ME Capstone Design Project II	2
MCHE 3300	Machine Design I	3	MCHE 3450	ME Lab	2
MCHE 3310	Engineering Materials	3		Mechanical Engineering Elective	3
MCHE 3920	Design Studio	3		Mechanical Engineering Elective	3
ELEE 4210	Linear Systems	3		Mechanical Engineering Elective	3
	Mechanical Engineering Elective	3		Mechanical Engineering Elective	3
Total Credit Hours		**17**	**Total Credit Hours**		**16**

Mechanical Engineering Electives

Choose six (6) courses from the list below (18 credit hours). The courses are grouped into related topical areas to assist if a student desired to concentrate in one area. (Note that some courses are included in more than one topical area).

Advanced Energy Systems	
ENGR 4490/6490	Renewable Energy Engineering
ENVE 4230/6230	Energy in Nature, Civilization & Engineering
ENVE 4250/6250	Energy Systems & The Environment
ENVE 4530/6530	Energy & Environmental Policy Analysis
MCHE 3150	Engineering Thermodynamics II
MCHE 4590/6590	Fluid Mechanics II
MCHE 4650/6650	HVAC Systems for Buildings and Industry
MIST 4550/6550	Energy Informatics

Advanced Mechanics	
BIOE 4720/6720	Biomedical Device Design
BIOE 4760/6760	Biomechanics
CSEE 4310	Embedded Robotics
CSEE 4320	Mechatronics Systems Engineering
ENGR 4350/6350	Intro to Finite Element Analysis
MCHE 4300	Mechanical Systems
MCHE 4360/6360	Robotic Manipulators
MCHE 4380	Solid Mechanics
MCHE 4390	Mechanical Vibration
MCHE 4500/6500	Advanced Thermal Fluid Systems
MCHE 4590/6590	Fluid Mechanics II
MCHE 4810	Intro to Micro and Nano Systems

Architectural Engineering	
CVLE 3610	Structural Design
CVLE 4720	Engr. Design of Residential Structures
CVLE 4750	Building Information Modeling (BIM)
CVLE/MCHE/LAND 4660/6660	Sustainable Building Design
MCHE 4650/6650	HVAC Systems for Buildings and Industry
MIST 4550/6550	Energy Informatics

Industrial Design and Processes	
AENG 3540	Physical Unit Operations
BIOE 4720/6720	Biomedical Device Design
CSEE 4310	Embedded Robotics
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4235/6235	Industrial Control Systems
ELEE 4540/6540	Applied Machine Vison
MCHE 3150	Engineering Thermodynamics II
MCHE 4340	Machine Hydraulics
MCHE 4390	Mechanical Vibration
MCHE 4500/6500	Advanced Thermal Fluid Systems
MCHE 4590/6590	Fluid Mechanics II
MCHE 4650/6650	HVAC Systems for Buildings and Industry

Modeling and Controls	
CSEE 4320	Mechatronics Systems Engineering
CVLE 4750	Building Information Modeling (BIM)
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4235/6235	Industrial Control Systems
ELEE 4240	Intro to Microcontrollers
ELEE 4250/6250	Advanced Microcontrollers
ENGR 4350/6350	Intro to Finite Elements Analysis
INFO 4150	Engineering Informatics
MCHE 4360/6360	Robotic Manipulators
MCHE 4650/6650	HVAC Systems for Buildings and Industry
MIST 4550/6550	Energy Informatics

[1] Life Science Elective: Select from BIOL 1103 or BIOL 1104 or BIOL 1107&L or BIOL 1108&L.
[2] This course will teach topics not covered in MATH 2203, to ensure transfer equivalency (MATH 2500).
[3] One of the upper level Math courses will count as the BSME Professional Interest Elective.

Courses listed in green will apply to YHC/Math only.
Courses listed in light blue will apply to UGA/BSME only.
Courses listed in dark blue will apply to both UGA/BSME and YHC/Math.
Courses listed in **bold** require a minimum grade of "C" (2.0) or better.
Courses listed in *italics* are entrance requirements.

High Demand Major (HDM) Entrance Requirements

To be considered as a candidate for BSME, students must complete the following courses with a grade of "C" (2.0) or better.

General Education Coursework:

MATH 2250 (MATH 2201 at YHC)
MATH 2260 (MATH 2202 at YHC)
PHYS 1251 or 1211 (PHYS 2111 at YHC)
ENGL 1101

Major-Specific Coursework:

ENGR 1120
ENGR 1140 (CSCI 1610 at YHC)
ENGR 2120

Students must also provide a personal statement of purpose to explain their interest in engineering and their career goals.

At the time of application (prior to the first semester at UGA), all entrance requirements should have been completed at YHC as part of the outlined curriculum. CENGR's Academic Office will facilitate the HDM application process for YHC transfer students. Acceptance to the full major is required in order to enroll in the advanced Engineering courses listed in the plan (starting Year Four).

For more information on entrance requirements, please refer to the UGA Bulletin: http://bulletin.uga.edu/ and our website.

This document is a *sample* program of study. Several factors can affect the course scheduling sequence.