ARKANSAS TECH UNIVERSITY

NAME:_____ T#:_____ DATE:_____

8-Semester Guaranteed Program

Rev. 12/8/2023

2023-2024 Degree Map-Bachelor of Science in Engineering Physics

This map is a term-by-term sample course schedule. The milestones listed to the right of each term are designed to keep you on course to graduate in four years. The Sample Schedule serves as a general guideline to help you build a full schedule each term. See course descriptions and prerequisites at http://www.atu.edu/catalog/

Possible careers include: Architectural and Engineering Manager, Validation Engineer, Photonics Engineer, Nanosystems Engineer, Physicist, Engineering Teacher, Solar Energy Systems Designer

#Prerequisite Courses: ENGL 0303____ MATH 0803___ MATH 1003____ MATH 0903____ MATH 1113___ MATH 1110____ MATH 1203 ____ MATH 1914_____

Sample Schedule — **Milestones/Notes**

Semester 1	Hrs.	Grade	Semester 1
ENGL 1013- Comp I (ACTS=ENGL 1013)	3	#	
PHSC 1001- Orientation to Physical Science	1		
MATH 2914- Calculus I (ACTS= MATH 2405)	4	#	#C or > required for Gen Ed. Milestone
COMS 1013- Programming Foundations I	3		Prereq: #C or > in MATH 1113 or higher
COMS 1011- Programming Foundations I Lab	1		Lab is Pass/Fail
CHEM 2124/2120- Gen. Chem. I (ACTS=CHEM1414)	4	#	
Total hours	16	GPA	

Semester 2	Hrs.		Semester 2
ENGL 1023- Comp II (ACTS= ENGL 1023)	3	#	
PHSC 1011- Orientation to Physical Science II	1		No substitutions allowed.
MATH 2924- Calculus II (ACTS= MATH2505)	4	#	Milestone
MCEG 2023- Engineering Materials	3		
PHYS 2114/2000- Calculus-Based Physics I (ACTS=PHYS 2034)	4		
Total hours	15	GPA	

Semester 3	Hrs.		Semester 3
Social Sciences	3		
PHYS 2124/2010- Calculus-Based Physics II (ACTS=PHYS 2044)	4		Milestone
MATH 2934- Calculus III (ACTS= MATH 2603)	4		
MCEG 2013- Statics	3		
COMS 2203 Programming Foundations II	3		
Total hours	17	GPA	

Semester 4	Hrs.		Semester 4
Fine Arts/Humanities	3		
ELEG 2103- Electric Circuits I	3		
MCEG 2033- Dynamics	3		Milestone
MATH 3243- Differential Equations I	3		
PHYS 3213- Modern Physics	3		
Total hours	15	GPA	**PHYS ADVISOR ASSIGNED**

The Arkansas Course Transfer System (ACTS) is designed to assist in planning the academic progress of students. This system contains information about the transferability of courses within Arkansas public colleges and universities. The Arkansas Course Transfer System can be accessed by searching keyword "ACTS" at https://adhe.edu/

# indicates a "C" or better is required

Sample Schedule — **Milestones/Notes**

Semester 5	Hrs.	Grade	Semester 5
Fine Arts/Humanities	3		
ELEG 2113- Electric Circuits II	3		
ELEG 2111- Electric Circuits Lab	1		
PHYS 3023- Mechanics ***or*** PHYS 4013 Quantum Mechanics	3		
PHYS 3133- Theory of Electricity and Magnetism **or** PHYS 4023- Computational Physics	3		**Note 1**: PHYS3133 offered in alternating fall semesters
MCEG 3013- Mech of Materials	3		
Total hours	16	GPA	

Semester 6	Hrs.		Semester 6
US History/ Government	3		
PHYS 3003- Optics or PHYS 4113 Advanced Physics Lab	3		Complete both PHYS 4113 & MATH.
(PHYS 4213- Adv Topic/ Physic/ Astrono or MATH UD) ***or*** PHYS 4003-Thermodynam/ Stat Mech	3		PHYS 4113 offered in alternating years.
COMS 2323- Programming in Python	3		Prereq: COMS 2203
MCEG 4202-Engineering Design	2		
Total hours	14	GPA	**APPLY FOR GRADUATION**

Semester 7	Hrs.		Semester 7
MCEG 4403- Mechanics of Fluids and Hydraulics	3		
PHYS 3023- Mechanics **or** PHYS 4013- Quantum Mechanics	3		
PHYS 3133- Theory of Electricity and Magnetism **or** PHYS 4023- Computational Physics	3		
MCEG 3313- Thermodynamics I	3		
ELEG/MCEG/ COMS Elective (3000-4000 level)	3		
Total hours	15	GPA	

Semester 8	Hrs.		
PHYS 3003- OPTICS or PHYS 4113 Advanced Physics Lab	3		
(PHYS 4213- Adv Topic/ Physic/ Astrono or MATH UD) ***or*** PHYS 4003-Thermodynam/ Stat Mech	3		**Graduation Requirements:**
PHYS 4061- Engineering Physics Design	1		Min. hours 3000-4000 level courses: 40
MCEG 4443- Heat Transfer	3		No more than 4 PE activity hours
ELEG/MCEG/COMS Elective (3000-4000 level)	2		Min. hours required:120
Total Hours	12	GPA	2.00+ GPA
			No more than 12 hours of "D" grades

*General Electives: 5 hours 3000-4000 level

**Math Elective Exclusions: Math 3003, 3033, 4113

Fine Arts and Humanities
ART 2123 Experiencing Art (ACTS=ARTA1003)
MUS 2003 Introduction to Music (ACTS=MUSC1003)
TH 2273 Introduction to Theatre (ACTS=DRAM 1003)
ENGL/JOUR 2173 Introduction to Film
ENGL 2003 Introduction to World Literature (ACTS=ENGL2113)
ENGL 2013 Intro. to American Literature (ACTS=ENGL2653)
PHIL 2003 Introduction to Philosophy (ACTS=PHIL1103)
PHIL 2053 Introduction to Critical Thinking (ACTS=PHIL 1003)
1013 from SPAN, FR, GER, JPN, CHIN, or LAT
1023 from SPAN, FR, GER, JPN, CHIN, or LAT
LEAD 2003 Ethics in Leadership

U.S. History & Government
HIST 1903 Survey of American History
HIST 2003 U.S. History to 1877 (ACTS=HIST2113)
HIST 2013 U.S. History since 1877 (ACTS=HIST2123)
POLS 2003 American Government (ACTS=PLSC2003)

Social Sciences	
HIST 1503 World History to 1500 (ACTS=HIST1113)	ANTH 1213 Intro. to Anthropology (ACTS=ANTH1013)
HIST 1513 World History since 1500 (ACTS=HIST1123)	ANTH 2003 Cultural Anthropology (ACTS=ANTH2013)
HIST 2003 U.S. History to 1877 (ACTS=HIST2113)	GEOG 2013 Regional Geography of the World (ACTS=GEOG2103)
HIST 2013 U.S. History since 1877 (ACTS=HIST2123)	AMST 2003 American Studies
HIST 1903 Survey of American History	FIN 2013 Personal Finance
POLS 2003 American Government (ACTS=PLSC2003)	LEAD 1003 Introduction to Leadership
ECON 2003 Principles of Macroeconomics (ACTS=ECON2103)	
ECON 2013 Principles of Microeconomics (ACTS=ECON2203)	
SOC 1003 Introductory Sociology (ACTS=SOCI1013)	
PSY 2003 General Psychology (ACTS=PSYC1103)	

University Honors students should consult Course Catalog for appropriate Fine Arts/Humanities, US History/Government and Social Science options for University Honors Curriculum.