



**2+2 Degree Plan Checklist**  
**Associate of Science in Pre-Engineering to**  
**Bachelor of Science in Mechanical Engineering (BSME)**



**National Park College**  
**Associate of Science in Pre-Engineering (60 Credit Hours)**  
**General Education Requirements (30 Credit Hours)**

<b>Freshman English/Writing (6 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
ENG	1113	English Composition I <b>AND</b>	ENGL 1013 Composition I	3
ENG	1123	English Composition II	ENGL 1023 Composition II	3

<b>Mathematics (4 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
MATH	2214	Calculus I	MATH 2914 Calculus I	4

<b>Lab Sciences (8 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
CHEM	1204	Chemistry I for Majors	CHEM 2124 General Chemistry I	4
PHYS	2114	Physics I for Majors	PHYS 2114 Calculus-Based Physics I	4

<b>Fine Arts/Humanities (6 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
ART	1593	Art Appreciation <b>OR</b>	ART 2123 Experiencing Art	3
MUS	1213	Music Appreciation	MUS 2003 Intro to Music	
ENG	2223	American Literature I <b>OR</b>	ENGL 2013 Intro to American Literature	3
ENG	2273	World Literature I	ENGL 2003 Intro to World Literature	

<b>Social Sciences (6 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
ECON	2203	Macroeconomics <b>OR</b>	ECON 2003 Principles of Economics I	3
ECON	2213	Microeconomics <b>AND</b>	ECON 2013 Principles of Economics II	
HIST	2223	United States History To 1865 <b>OR</b>	HIST 2003 United States History to 1877	3
HIST	2233	United States History Since 1865 <b>OR</b>	HIST 2013 United States History since 1877	
POLS	1113	American National Government	POLS 2003 American Government	

<b>A.S. in Pre-Engineering Required Courses (30 credit hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
EGR	1122	Introduction to Engineering	ELEG/MCEG 1011 Intro to Mech. Engineering <i>and</i> GENL 1xx1 General Elective	2
EGR	1143	Engineering Graphics	MCEG 1002 Engineering Graphics <i>and</i> GENL 1xx1 General Elective	2 1
EGR	2104	Electric Circuits I	ELEG 2103 Electric Circuits I <i>and</i> GENL 2xx1 General Elective	4
EGR	2113	Engineering Materials	MCEG 2023 Engineering Materials	3
EGR	2123	Statics	MCEG 2013 Statistics	3
EGR	2213	Dynamics	MCEG 2033 Dynamics	3
MATH	2224	Calculus II	MATH 2924 Calculus II	4
MATH	2254	Calculus III	MATH 2934 Calculus III	4
PHYS	2124	Physics II for Majors	PHYS 2124 Calculus –Based Physics II	4

<b>NPC Required Courses (0 Credit Hours)</b>			<b>ATU equivalent</b>	<b>Hours</b>
ORT	1000	Student LMS Training	N/A	0
ORT	1100	NPC Orientation	N/A	0

**Total NPC Hours: 60**



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**Arkansas Tech University**  
**Bachelor of Science in Mechanical Engineering (BSME) 62 Hours**

**Arkansas Tech University Courses**

TECH			Waive
TECH	1001	Orientation to the University <sup>1</sup>	
MCEG	2203	Computational Methods in Engineering	3
MCEG/ELEG	3003	System Modeling and Analysis	3
MCEG	3013	Mechanics of Materials	3
MATH	3243	Differential Equations I	3
ELEG	2113	Electric Circuits II	3
MCEG	3313	Thermodynamics I	3
MCEG	3413	Fundamentals of Mechanical Design	3
MCEG	3442	Mechanical Laboratory I	2
MCEG/ELEG	4202	Engineering Design	2
MCEG	4403	Mechanics of Fluids and Hydraulics	3
MCEG	4423	Machine Component Design	3
MCEG	4433	Thermodynamics II	3
MCEG	4442	Mechanical Laboratory II	2
MCEG	4443	Heat Transfer	3
MCEG	4491	Mechanical Design Project I	1
ELEG	4303	Control Systems	3
MCEG	4492	Mechanical Design Project II	2
		3000-4000 level Engineering Electives <sup>2</sup>	6
		4000 level Engineering Elective <sup>3</sup>	3
		3000-4000 Engineering Lab Elective	2
		Math Elective <sup>4</sup>	3
		Technical Elective <sup>5</sup>	3

**Total ATU Credit Hours: 62**  
**Total Credit House: 122**

<sup>1</sup>Waive Tech 1001.

<sup>2</sup>3000-level or above ELEG or MCEG laboratory class.

<sup>3</sup>4000-level or above ELEG or MCEG course with minimum of three (3) hours at the 4000-level and approval of advisor.

<sup>4</sup>Mathematics elective course to be chosen with approval of advisor from list of eligible courses maintained in the departmental office.

<sup>5</sup>Technical elective course to be chosen with approval of advisor from list of eligible courses maintained in the departmental office.

**Arkansas Tech University**

**National Park College**

  
 Dr. Adolfo Santos  
 Executive Vice President and Provost  
 Date 3/3/25

  
 Dr. Chuck Argo  
 Vice President for Academic Affairs  
 Date 03/04/25