



Outcome-based 18/SU Course Syllabus

Course Rubric Number Section: AERM 1315 1001
Lecture-Lab-Credit: 2-4-3
CIP Code: 47.0607
Course Title: Aviation Science
Course Description: Fundamentals of mathematics, physics, and drawings as they apply to aircraft principles and operations as required by the Federal Aviation Administration (FAA) for airframe and powerplant mechanics.

Prerequisites:
Co-requisites:
Course Meets: 1ASC N186 LEC M 08:00AM 09:55AM 1ASC N186 LAB WF 08:00AM 09:55AM

Instructor: Kelly Filgo
Office Phone Number: 254-867-3001
Email Address: kmfilgo@tstc.edu
Office Fax Number:
Building & Office Room Number: Aerospace Center N267
Office Hours: Tuesdays and Thursdays 2p-4p

Approved by:	Angel Newhart	Date:	2018-05-03
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Course Outcomes

- CO1:** Extract roots and raise numbers to a given power
- CO2:** Calculate areas and volumes of various geometrical shapes
- CO3:** Solve ratio, proportion, and percentage problems
- CO4:** Perform algebraic operations
- CO5:** Apply the principles of simple machines, sound, fluid, and heat dynamics
- CO6:** Apply principles of basic aerodynamics
- CO7:** Apply principles of aircraft structures
- CO8:** Apply principles of theory of flight
- CO9:** Interpret aircraft drawings, symbols, and system schematics
- CO10:** Draw sketches of repairs and alterations
- CO11:** Interpret blueprint information, graphs, and charts

TSTC Grading Policy

(Grades for courses must be C or better)

Grade	Percent	Description	Grade Points
A	90-100	Excellent/Superior Performance Level	4
B	80-89	Above Required Performance Level	3
C	70-79	Minimum Required Performance Level	2
D	60-69	Below Required Performance Level	1
F	Below 60	Failure to meet Performance Requirements	0
IP	--	In Progress	
W	--	Withdrawal	0

CR	--	Credit	0
AUD	--	Audit of Course	0

See College Catalog for complete descriptions.

Competencies Rating Scale

Rating Scale Key			
6	90+	Proficient	Student consistently performs the task accurately to industry standards without supervision.
5	80-89	Proficient	Student performs the task to industry standards with no supervision.
4	70-79	Proficient	Student performs the task to industry standards with little supervision. This is the minimum performance rating for STAR skill completion.
3	60-69	Exposed/Not Proficient	Student has been introduced to the task and can perform some of the tasks to industry standards.
2	50-59	Exposed/Not Proficient	Student has been introduced to the task, but cannot perform the task to industry standards.
1	0-49		Student was absent or did not complete assignment.

Campus Standard Policies

The [Student Handbook](#) contains valuable information on campus policies and procedures.

- Student Code of Conduct
- Student Drug and Alcohol Testing Policy
- Plagiarism
- Student Grievances and Complaints

Disability Services

Any student who, because of a disability, may require special accommodations in order to meet the course requirements, should contact the Disability Services office, as soon as possible, to make necessary arrangements. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Disability Services office has been provided.

Abilene Campus

Susan Hash
Testing and Support Services
Abilene Main Campus Bldg. Rm. 112
325-734-3641

Breckenridge Campus

Lisa Langford
Testing and Advisement located in
The Main Building Rm. 106
254-559-7731

Brownwood Campus

Nicole Whitley
Testing and Advisement
Building 2 Rm. 120
325-641-5955

Fort Bend Campus

Schauna Boynton
Brazos Center Rm. 113
346-239-3394

Harlingen Campus

Corina De La Rosa
Disabilities Services
Student Support Services
Student Services Bldg. Rm. 216
956-364-4521

Marshall Campus

Annette Ellis
Administration and Admissions Rm. 150
909-923-3313

Sweetwater Campus

Misty Walden
Disability Services
Student Support Services
Lance Sears Building Rm. 140
325-236-8292

North Texas Campus

Amanda Warren
Student Services, Room 227
972-617-4724

Waco Campus

Marilyn Harren
Disabilities Services Office
Student Services Center Rm. 198
254-867-3600

Williamson County

Chemese Armstrong
Enrollment Services Rm. B113C
512-759-5907

Tutoring Statement

The Supplemental Instruction & Tutoring Program at TSTC offers free tutoring and academic support services to help you achieve your academic and career goals. You can access the Tutoring Schedule, as well as M, T, T, O, Wides Tutor Library by

academic and career goals. You can access the Tutoring Schedule, as well as *My TSTC Video Tutor Library*, by visiting: https://portal.tstc.edu/student/Student_Learning/Pages/Tutoring.aspx (shortened link: goo.gl/Z9vJvY). For more information, please contact Norma A. Salazar@ [956-364-4557](tel:956-364-4557).

Learning Resource Center

The purpose of the TSTC Learning Resource Center is to serve the TSTC Community and support academic, advanced, specialized and emerging programs, contributing to the educational and economic development of the State of Texas. You can access the Learning Resource Center page at <https://portal.tstc.edu/employee/Departments/operations/Pages/Learning%20Resource%20Center.aspx>

Aerospace Grading Policy:

Passing any course will require a minimum overall course grade of 70%. The student cannot fail more than one test per course. More than one test score below 60 is a failure of the entire course with a final grade of "D" or "F". The grade difference between "D" and "F" will be based on each individual program policy.

Aerospace Students reference HB 1508:

For students in this course who may have a criminal background, please be advised that the background could keep you from being licensed by the State of Texas and certifying agency. If you have a question about your background and licensure, please speak with your faculty member or the department chair. You also have the right to request a criminal history evaluation letter from the applicable licensing agency.

Aerospace Student Dress Code:

The student dress requirements mirror standards seen in our profession and will identify you as an Aviation Program Student. Your image reflects your professional attitude and conduct. How you present yourself is important to companies, airlines, FAA and hopefully to yourself. We expect you to look like a professional in your dress as well as in your conduct.

All APT, AER, AVI, ADT and ATC students are expected to be clean and well groomed. The TSTC aviation blue, steel grey, Baylor aviation shirt, or approved substitute, must be worn when in the classroom. Pants should reflect a professional image and worn at waist level. Ripped or baggy clothing is not acceptable; nor is overly tight or revealing clothing; yoga pants are not acceptable. NO short shorts! Shorts must be no more than 5" above the knee. Jeans that don't detract from a professional image may be worn. Close toed shoes, tennis shoes, or boots are acceptable. Open toed shoes, sandals, and flip flops are not permitted due to safety issues. If heels are worn they must be two inches or less for safety. Hair should be clean and neat.

Jewelry will be kept to a minimum to prevent loss and /or injury. Earrings are acceptable, but should be conservative and not extend beyond the ear. Tattoos covering large parts of the body or reflecting crude taste will limit your chances of being hired, are not recommended, and will be covered to promote an aviation professional image.

The purpose of these appearance standards is to promote a safe and comfortable work environment that is free of unnecessary distraction. The aviation industry as a whole is conservative in dress and appearance, and we hold you to these standards. Crude, provocative, or radical clothing will not be permitted. Students who arrive for class or for a flight inappropriately groomed or attired may be asked to leave and/or make changes. If you have opposition to conforming to conservative dress standards, you should probably consider other career options. Unless a notification is sent out Fridays are considered Relaxed Dress Code days.

Only the Department Chair or Lead instructor can issue waivers to this policy.

By attending our programs, you agree to the standards so described.

Represent TSTC and the Aerospace Department with pride.

Resources

Textbooks & Publications:

Item	Title	Author	Publisher	Edition	ISBN
1	Aircraft Basic Science	Kroes, Rardon, & Nolan	McGraw Hill:	8th Edition	978-0-07-179917-1
2	FAA-H-8083-30 Airframe & Powerplant Mechanics General Handbook	FAA	Aircraft Technical Book Co.	4th	9781941144091
3	General Test Guide 2018	FAA	ASA	2018	978-1-61954-530-4

Tools, Materials:

Item	Resource	Quantity
1	Calculator (T.I. 36 or better)	1
2	Measuring and drawing tools from student tool kit	1 kit

Course Schedule			
Unit/Week	Unit Description/Objectives	Assessment Label:Description	Due Date
1	Unit 1 (Math Review)		
	<ul style="list-style-type: none"> Algebraic Operations Roots, Ratios, Percentages, and Decimals 	Math Lab 1: Working relevant Algebraic Operations problems	

	<ul style="list-style-type: none"> • Geometry, Trigonometry, Conversions, and Binary Numbers 	<p>Math Lab 2: Working relevant Roots, Ratios, Percentages, and Decimals problems</p> <p>Math Lab 3: Working relevant Geometry, Trigonometry, Conversions, and Binary Numbers problems</p> <p>Unit 1 Test: Test covering all material from the unit</p>
2	Unit 2 (Physics Fundamentals)	
	<ul style="list-style-type: none"> • Measurements • Gravity, Weight, and Mass • Force and Motion • Work, Energy, and Power • Machines • Heat • Fluids • Gas Laws • Sound 	Unit 2 Test: Test covering all material from the unit
3	Unit 3 (Basic Aerodynamics)	
	<ul style="list-style-type: none"> • Properties of Air • Forces of Flight • Airfoils and Creating Lift • High Speed Flight 	Unit 3 Test: Test covering all material from the unit
4	Unit 4 (Aircraft in Flight)	
	<ul style="list-style-type: none"> • Aircraft Axes • Aircraft Stability • Aircraft Control • Helicopters • Other Aircraft Designs 	Unit 4 Test: Test covering all material from the unit
5	Unit 5 (Aircraft Drawings)	
	<ul style="list-style-type: none"> • Types of Drawings • Drafting Techniques • Reading Graphs and Charts 	<p>Drawings Lab 1: Reading Drawings and Making Shop Sketches</p> <p>Drawings Lab 2: Fabrication Layout From a Drawing</p> <p>Drawings Lab 3: Reading Charts and Graphs</p> <p>Unit 5 Test: Test covering all material from the unit</p>
6	Final Exam	
		Final Exam: Comprehensive test covering all material from the course

Grade Scheme		
Category Description		Category Value
Labs (All labs must be complete to pass the course)		0%
Assessment Label:	Assessment Description	Assessment Value
Math Lab 1:	Working relevant Algebraic Operations problems	0.00%
Math Lab 2:	Working relevant Roots, Ratios, Percentages, and Decimals problems	0.00%
Math Lab 3:	Working relevant Geometry, Trigonometry, Conversions, and Binary Numbers problems	0.00%
Drawings Lab 1:	Reading Drawings and Making Shop Sketches	0.00%
Drawings Lab 2:	Fabrication Layout From a Drawing	0.00%
Drawings Lab 3:	Reading Charts and Graphs	0.00%
Category Description		Category Value
Unit Tests (Unit tests must average 70 points or better to pass the class)		50%
Assessment Label:	Assessment Description	Assessment Value
Unit 1 Test:	Test covering all material from the unit	10.00%
Unit 2 Test:	Test covering all material from the unit	10.00%
Unit 3 Test:	Test covering all material from the unit	10.00%
Unit 4 Test:	Test covering all material from the unit	10.00%
Unit 5 Test:	Test covering all material from the unit	10.00%

Unit 5 Test: Test covering all material from the unit	10.00%
Category Description	Category Value
Final Exam (Final exam must total 70 points or better to pass the course)	50%
Assessment Label: Assessment Description	Assessment Value
Final Exam: Comprehensive test covering all material from the course	50.00%
Total Assessment Percent 100.00%	
Total Category Percent 100.00%	
A = 100-90	B = 89-80
C = 79-70	D = 69-60
	F = 59-0

Description of Graded Elements of the Course			
Assessment Label	Assessment Description/Course outcomes met	Assessment Value in Percent	% of Final Grade
Math Lab 1	Working relevant Algebraic Operations problems Course outcomes met: CO4, CO1, CO2, CO3	0.00	0.00%
Math Lab 2	Working relevant Roots, Ratios, Percentages, and Decimals problems Course outcomes met: CO3, CO2, CO1, CO4	0.00	0.00%
Math Lab 3	Working relevant Geometry, Trigonometry, Conversions, and Binary Numbers problems Course outcomes met: CO4, CO1, CO2, CO3	0.00	0.00%
Unit 1 Test	Test covering all material from the unit Course outcomes met: CO3, CO2, CO1, CO4	10.00	10.00%
Unit 2 Test	Test covering all material from the unit Course outcomes met: CO5	10.00	10.00%
Unit 3 Test	Test covering all material from the unit Course outcomes met: CO6	10.00	10.00%
Unit 4 Test	Test covering all material from the unit Course outcomes met: CO7, CO8	10.00	10.00%
Drawings Lab 1	Reading Drawings and Making Shop Sketches Course outcomes met: CO9, CO10	0.00	0.00%
Drawings Lab 2	Fabrication Layout From a Drawing Course outcomes met: CO10, CO9	0.00	0.00%
Drawings Lab 3	Reading Charts and Graphs Course outcomes met: CO11	0.00	0.00%
Unit 5 Test	Test covering all material from the unit Course outcomes met: CO11, CO9, CO10	10.00	10.00%
Final Exam	Comprehensive test covering all material from the course Course outcomes met: CO11, CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, CO9, CO10	50.00	50.00%
		100.00	100.00%

For program attendance, make-up, safety, and other policies please consult the Waco Aviation Maintenance Programs Policies Guide.

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