Powerplant Systems III

AMTT - 2440 001

Course Description

This course is designed to teach students the theories, principles, and concepts of turbine engines, unducted fans, auxiliary powerplants, engine fire protection systems, turbine ignition & starting systems, turbine engine fuel & fuel metering systems, turbine engine air systems, turbine exhaust & reverser systems, and turbine engine inspection.

Pre-requisite(s): AMTT 1120, AMTT 1140, AMTT 2340, AMTT 2420, MATH 1010 or higher, and ENGL 1010 or COMM 1010 or LE 1220 or one course from 1 of the Distribution Area Fine Arts (FA), Humanities (HU), Life Sciences (LS), Physical Science (PS) or Social Science (SS) 'with concurrency.'

Semester(s): Fall & Spring

Course Student Learning Outcomes

- Demonstrate proficiency in theories, principles, and concepts of turbine engines/unducted fans and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of auxiliary powerplants and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of engine fire protection systems and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of turbine ignition & starting systems and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of turbine engine fuel & fuel metering systems and proper maintenance techniques.

- Demonstrate proficiency in theories, principles, and concepts of turbine engine air systems and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of turbine exhaust & reverser systems and proper maintenance techniques.
- Demonstrate proficiency in theories, principles, and concepts of turbine engine inspection and proper maintenance techniques and documentation.

Course Prerequisites

MATH 1010, AMTT 1120, AMTT 1140, AMTT 2340, AMTT 2420,

Engagement Plan

Example language:

- I will respond to email within 2 days. I will offer feedback on major assignments within 2 days. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.
- In this course I will be posting interactive announcements which will offer specific opportunities for class questions and extra credit every other week.
- Additionally, I will be participating in the discussion forums with you to share my perspective within the discipline and to offer some nuances of interpretation that may not be present in your textbook.
- Lastly, we'll be holding small group Q & A sessions, where we can learn from our peers (and faculty) on some of the more difficult units within the course.

Keys for Success (how to succeed in the course)

Turn in and Keep current on the assignments in the Modules only.

Participate in lectures

score well on the quizzes

score well on the subject finals - any student that score below 70% will have to retake the subject final and successfully passes in turn will receive a 70% for the test score.

Participate in the labs

attend class everyday

Brief Description of Assignments/Exams

Quiz questions come from the lecture and lab arena - Pay attention, take notes

Subject finals are generate by ASA prepware - study

All late assignments will be deducted 10% of full grade for every day assignments are late

Any assignments not turned in by the last day of class will result in a E grade (fail) .

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	ACS Engine Exhaust and Thrust Reversers	Assignment	0
	ACS Engine Fire Systems	Assignment	0
	ACS Engine Fuel and Fuel Metering	Assignment	0
	ACS Ignition and Starting Systems	Assignment	0

Due Date	Assignment Name	Assignment Type	Points
	ACS Turbine engine air systems	Assignment	0
	ACS Turbine Engines	Assignment	0
	ACS Turbines testing Criteria	Assignment	0
	ATA codes	Quiz	0
	Auxiliary power unit presentation	Assignment	100
	Bring tools and safety glasses	Discussion	0
	Calendar	Assignment	0
	Compressor wash Halo	Assignment	100
	Distance Learning April 22nd	Discussion	0
	Distance Learning April 23rd	Discussion	0
	Distance Learning April 30th	Discussion	0
	Distance Learning April 21, 2021	Discussion	0
	Distance Learning April 26th	Discussion	0
	Distance Learning April 27th	Discussion	0
	Distance Learning April 28th	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Distance Learning_ April 29th	Discussion	0
	Distance Learning_ attendance April 1	Discussion	0
	Distance Learning_ attendance April 10th	Discussion	0
	Distance Learning_ attendance April 13th	Discussion	0
	Distance Learning_ attendance April 14th	Discussion	0
	Distance Learning_ attendance April 14th	Discussion	0
	Distance Learning_ attendance April 15th	Discussion	0
	Distance learning_ attendance April 16th	Discussion	0
	Distance Learning_ attendance April 17th	Discussion	0
	Distance Learning_ attendance April 2	Discussion	0
	Distance Learning_ attendance April 20th	Discussion	0
	Distance Learning_ attendance April 21st	Discussion	0
	Distance learning_ attendance April 28th	Discussion	0
	Distance Learning_ attendance April 29th	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Distance Learning attendance April 3rd	Discussion	0
	Distance Learning attendance April 6th	Discussion	0
	Distance Learning attendance April 7th	Discussion	0
	Distance Learning attendance April 8th	Discussion	0
	Distance Learning attendance April 9th	Discussion	0
	Distance Learning attendance March 16th, 2021	Discussion	0
	Distance Learning attendance March 18th, 2021	Discussion	0
	Distance Learning attendance March 19th, 2021	Discussion	0
	Distance Learning attendance March 22th, 2021	Discussion	0
	Distance Learning attendance March 23rd, 2021	Discussion	0
	Distance Learning attendance march 24	Discussion	0
	Distance Learning attendance march 25	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Distance Learning attendance march 26	Discussion	0
	Distance Learning attendance march 26	Discussion	0
	Distance Learning attendance march 29	Discussion	0
	Distance Learning attendance March 30	Discussion	0
	Distance Learning attendance march 31	Discussion	0
	Distance Learning attendance May 1st	Discussion	0
	Distance learning March 16 , 2021	Discussion	0
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	No Title	Discussion	0
	Powerplant presentation # 1	Assignment	100
	PT6-20 engine maintenance manual	Assignment	100
	Turbine Textbook	Assignment	0
2/12/25	Chapter 1	Assignment	10
2/12/25	Syllabus sign off	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
2/12/25	Syllabus sign off Copy	Assignment	100
2/14/25	Chapter 8 Worksheet - Engine bearings video - advanced plain bearing surface	Assignment	100
2/21/25	Chapter 4 worksheet	Assignment	100
3/24/25	Chapter 5 worksheet	Assignment	100
5/20/25	Chapter 8	Assignment	100
5/20/25	Chapter 1 Worksheet	Assignment	100
8/20/25	ATA Codes Publications and Regulations Test	Quiz	0
8/26/25	AMTT 2440 syllabus	Assignment	0
8/26/25	100 hour inspection form	Assignment	100
8/26/25	Alison 250 Engine oil pump	Assignment	100
8/26/25	Auxiliary Powerplants	Assignment	100
8/26/25	Chapter 6 Worksheet	Assignment	100
8/26/25	Engine design and components	Assignment	100
8/26/25	Turbine Engines Fuel ACS Lab Worksheet	Assignment	100
8/27/25	Alison 250 Engine identification # 1	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
8/27/25	Gas turbine performance Powerpoint presentation	Assignment	100
8/27/25	Turbine blade inspection video and Maintenance manual references	Assignment	100
8/27/25	Unducted Fan engines	Assignment	100
8/28/25	Chapter 4 worksheet	Assignment	100
8/29/25	Quiz - Compressors	Quiz	10
8/29/25	turbine quiz Components	Quiz	10
8/29/25	Chapter 12 Manufacturing	Assignment	100
9/1/25	PT6 overhaul video	Assignment	
9/2/25	Turbine Air systems test	Quiz	7
9/3/25	Chapter 10 Inspection and Maintenance - AVOTEK textbook	Assignment	100
9/3/25	CHapter 10 Inspection and maintenance	Assignment	100
9/5/25	Chapter 5 worksheet	Assignment	100
9/5/25	Logbook entry form	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
9/8/25	Turbine engine quiz # 1	Quiz	9
9/8/25	Work sheet # 12B- fuel nozzles	Assignment	100
9/8/25	Chapter 9 Turboshaft engines	Assignment	100
9/10/25	Turbine quiz 5a	Quiz	14
9/10/25	Worksheet # 9 Thermocouples - basics,intermediate and Testing	Assignment	100
9/12/25	Alison 250 Engine identification # 2	Assignment	100
9/16/25	Exhaust and Thrust Reverser final	Quiz	13
9/17/25	ATA codes Test	Quiz	52
9/17/25	turbine final 1	Quiz	107
9/17/25	J34 dimensional Inspection	Assignment	100
9/18/25	Chapter 11 Fault Analysis - Avotek	Assignment	100
9/18/25	Chapter 6 Worksheet	Assignment	100
9/18/25	Performance recovery / Compressor wash assignment	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
9/19/25	PT6 engine overview and Hot Section inspection	Assignment	100
9/19/25	Turbine Engine Boroscope	Assignment	100
9/24/25	Alison 250 engine run	Assignment	100
9/24/25	PT6 engine Run	Assignment	100
9/25/25	PT6 Borescope inspection - Blue run stand	Assignment	100
9/26/25	Compressor inspection	Assignment	100
9/30/25	Ignition and Starting test	Quiz	31
10/2/25	powerplant fire protection	Quiz	32
10/2/25	Chapter 9 Fire protection system	Assignment	100
10/3/25	Engine Fuel and Fuel Metering	Quiz	40
10/6/25	Engine Inspection	Quiz	17
10/7/25	Powerplant # 1 assessment	Quiz	98
10/7/25	Powerplant # 2 assessment	Quiz	98
10/8/25	Powerplant # 4 assessment	Quiz	96

Due Date	Assignment Name	Assignment Type	Points
10/8/25	Powerplant # 3 assessment	Quiz	97

Grading Scale

100 -97 = A

96-94=A-

93-90=B+

89-86=B

85-82= B-

81-78=C+

77-74= C

73-70 = C-

69-below = E (fail)

Academic Integrity

Do your own work

NO plagiarizing

attend class daily and on time, class starts at 7:00 am

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the Institutional Syllabus page.

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the Institutional Syllabus page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the Institutional Syllabus page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar