



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009

(i.e. 2003-2004)

NEXT REVIEW: 2013-2014

(i.e. 2008-2009)

STATUS: A

(A, I, D)

COURSE TITLE: Aircraft Landing Gear Systems

COMMON COURSE NUMBER: AMT 0200

CREDIT HOURS: 2

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS: 85

(Voc. Course ONLY)

Lecture: 35

Lab: 50

Clinic:

Other:

PREREQUISITE(S): None

COREQUISITE(S): None

PRE/COREQUISITE(S): None

COURSE DESCRIPTION *(750 characters, maximum)*: The student will receive training covering the proper methods of inspection, servicing, and repair of landing gear retraction systems, shock struts, brakes, wheels, tires and steering systems. Rigging of various types of retractable landing gear systems will be covered in detail in the classroom and shop situations.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

1. Landing Gear, Retraction Systems, Shock Struts, Brakes, Wheels, Tires and Steering Systems



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ASSESSMENT:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

1. **Quizzes, Test, and/or Final Exam (cumulative/comprehensive);**
2. **Selected faculty may assess homework, projects, class participation/attendance, and/or extra credit projects.**
Upon successful completion of this course, the students should be able to inspect, service and repair landing gear retraction systems, shock struts, brakes, wheels, tires and steering systems.

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Speak and listen effectively	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force



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Common Course Number: AMT 0200

UNITS

Unit 1 Landing Gear, Retraction Systems, Shock Struts, Brakes, Wheels, Tires and Steering Systems

General Outcome:

- 1.0 The student shall:** Upon successful completion of this unit, the students should be able to:

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Determine aircraft tire inflation pressures.
- 1.2 Explain the factors affecting the retreading of aircraft tires.
- 1.3 Adjust landing gear toe-in.
- 1.4 Install and remove aircraft wheel and brake assemblies.
- 1.5 Install tubes and tires.
- 1.6 Protect aircraft tires from hydraulic fluids.
- 1.7 Service brake deboosters.
- 1.8 Service landing gear shock struts.
- 1.9 Describe the effects of increasing temperature of "parked" brakes.
- 1.10 Determine the cause of an oleo strut bottoming during taxi operations.
- 1.11 Describe the pressure source for actuating power brakes.
- 1.12 Select and install air valves in oleo shock struts.
- 1.13 Observe safety precautions when demounting tire and wheel assemblies.



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- 1.14 Determine if a brake system requires bleeding; perform brake system bleeding.
- 1.15 Inspect and adjust multiple-disc brakes.
- 1.16 Install new linings in hydraulically operated single-disc brakes.
- 1.17 Determine the cause of spongy brake action.
- 1.18 Inspect and service aircraft tires and tubes.
- 1.19 Determine the reason for "dragging" brakes.
- 1.20 Describe the method of equalizing braking pressure on both sides of the rotating disc of a single-disc brake.
- 1.21 Operate and check retractable landing gear.
- 1.22 Determine the cause of fading brakes.
- 1.23 Replace actuating cylinders.
- 1.24 Install brake blocks in an expander-tube brake assembly.
- 1.25 Inspect brake drums.
- 1.26 Explain the purpose and function of metering pins in oleo shock struts.
- 1.27 Determine the cause of excessive brake pedal travel.
- 1.28 Explain the operating principles of oleo shock struts during landing.
- 1.29 Describe the storage requirements for aircraft tires and tubes.
- 1.30 Describe the effect of a broken return spring in a brake master cylinder.
- 1.31 Determine the cause of grabbing brakes.
- 1.32 Explain the purpose and operation of a deboosters in a hydraulic power brake system.
- 1.33 Detect internal leakage in a brake master cylinder.



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- 1.34 Describe the operating principles of servo, expander-tube, multiple-disc, and a single-disc aircraft brakes.
- 1.35 Explain the purpose and operating principles of brake master cylinders.