

**BERGEN COMMUNITY COLLEGE
DIVISION OF MATHEMATICS, SCIENCE AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE, ENGINEERING AND INFORMATION TECHNOLOGIES**

**COURSE SYLLABUS
AVT- 100 INTRODUCTION TO AERONAUTICS**

Date of Most Recent Syllabus Revision: Fall 2016

Course Typically Offered: Fall X Spring X Summer _____ Every Semester _____

INSTRUCTOR:
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OFFICE: TEC105

EMAIL:

PHONE:

COURSE DESCRIPTION: **Aeronautics** is a study of the science, theory, and practice of designing, building, and operating aircraft. Topics considered include a brief history of the evolution of aviation and aircraft, basic aircraft design and flight controls, aircraft systems, navigation, air law, airport operations and weather. Aeronautical decision making, concept application, and practical applications will be stressed.

CREDITS/HOURS: 4 credits / 6 hours (3 hours lecture / 3 hours lab)

PREREQUISITE: None

GEN ED COURSE: No

STUDENT LEARNING OBJECTIVES: **As a result of meeting the requirements for this course the student will:**

1. Demonstrate the fundamental concepts of Aeronautics, their historical development and how they are utilized in current real-world applications.
2. Be able to employ the concepts to validate various procedures in Aeronautics.
3. Demonstrate the fundamental principles of flight, flight design and how they are applied in current technology.
4. Demonstrate the fundamental structure and systems of aircraft and be able to apply the knowledge to solve operational problems.
5. Be able to perform fundamental analysis of weather using current weather tools.
6. Demonstrate the fundamental concepts of navigation and be able to use them to plan and manage flight in real-world applications.
7. Be able to solve navigation problems using manual, electronic and computer means.
8. Recognize and apply the concepts and techniques of aeronautics in real-world application and be able to solve operational problems through correct aeronautical decision making.
9. The three hour lab will use the AATD and BATD simulators to reinforce concepts introduced during the lecture. It will provide the students with in depth knowledge of the Garmin 1000 avionics suite. The students will learn all aspects of aircraft preflight, checklists, communication, taxi, takeoff, emergency procedures and landing.

ASSESSMENT MEASURES: Each of the above listed student learning objectives will be assessed by:
1. Written assignments and/or quizzes
2. Written examinations
3. Laboratory exercises or other assessments as determined by the instructor

COURSE GRADE: The instructor's grading policy will follow the Bergen model as listed in the catalogues and on THE PORTAL. One low test score will be dropped. Attendance and tardiness policies will follow BCC policy. Please attend and be on time to ensure successful completion. Attendance will be kept by the instructor for administrative and counseling purposes. Students are required to contact the instructor regarding missed classes.

Late work and make up examinations will be handled on a case by case basis.

TEXTBOOK: Pilot Handbook of Aeronautical Knowledge,
FAA-H-8083-25A, 2008 (\$19 to \$44)
Also available free online at FAA.GOV
Jeppesen CR-6 (\$23) calculator required. Navigation plotter (\$13) and New York Sectional Chart (\$8) required.

COURSE CONTENT:

<u>TOPIC</u>	<u>CHAPTER</u>
History of Aeronautics	1
Aircraft Structure	2
Principles of Flight	3
Aerodynamics	4
Flight Controls	5
Aircraft Systems	6
Flight Instruments	7
Aircraft Flight Manuals	8
Weight and	9
Aircraft Performance	10
Weather Theory	11
Aviation Services	12
Airport Operations	13
Airspace	14
Navigation	15
Aero-medical Factors	16
Aeronautical Decision Making	17

SPECIAL FEATURES: Upon Completion of this course the student will have the ability to use aeronautical charts, plotters and circular slide rules will be demonstrated.

REFERENCES: Airplane Flying Handbook, FAA-H-8083-3A, 2004 (Available online)
Electronic Code of Federal Regulations, <http://ecfr.gpoaccess.gov>
Aeronautical Information Manual,
<http://www.faa.gov/airtraffic/publications/ATpubs/AIM/>
Pilot Handbook of Aeronautical Knowledge, (Available online)
FAA-H-8083-25A, 2008

COURSE OUTLINE AND CALENDAR

WEEK	TOPIC / ACTIVITY	STUDENT LEARNING OBJECTIVES
1	History of Aeronautics Aircraft Structure Lab: Preflight, communications	1 1, 2
2	Principles of Flight Aerodynamics Lab: Checklists, Garmin 1000	2 2, 3
3	Flight Controls Lab: Taxi, Takeoff, landing	2, 3 2, 3
4	Aircraft Systems Exam 1 Lab: Take off, landing, stalls	1, 2, 3, 4
5	Flight Instruments Lab: Take off, landing, engine out	3, 4
6	Aircraft Flight Manuals Lab: Take off, landing, min. controllable airspeed	2, 3, 4
7	Weight and Balance Lab: Weight and CG issues	2, 8
8	Aircraft Performance Lab: Short and soft field t/o and landings Exam 2	1, 2, 8
9	Weather Theory Lab: Flight into IMC conditions	2, 5, 8
10	Aviation Services Lab: IFR emergencies,	5, 6, 8
11	Airport Operations and Airspace Lab: Class B, C airspace operations	2, 3, 4
12, 13	Navigation Lab: GPS, VOR, Pilotage, dead reckoning Exam 3	2, 6, 8
14	Aero-medical Factors Lab: Night flying	1, 2, 8
15	Aeronautical Decision Making Lab: Inflight emergencies, severe weather Final Examination	1, 2, 4, 8

ATTENDANCE POLICY The instructor will review their attendance policy on the first day of class.

FACULTY ABSENCE PROCEDURE A daily list of class cancellations is posted on the college's web page: www.bergen.edu. If students find the class has been cancelled without being posted, they should report it to the Divisional Dean's office.

STUDENT	Learning Assistance Center	Room: L-125	447-7908
SUPPORT	Sidney Silverman Library	Room: L-226	447-7436
SERVICES	Office of Specialized Services	Room: L-115	612-5270