INSTRUCTOR:    David Buser
LOCATION:     Classroom: F1-100
              Office: F1-103B
TELEPHONE:    Office (619) 388-7663 or Tool-Crib (619) 388-7305
OFFICE HOURS: Mon.-Wed. 1:30pm to 2:30pm; Thu. 10:15am to 11:15am
E-MAIL:       dbuser@sdccd.edu
WEB SITE:     http://faculty.sdmiramar.edu/faculty/sdccd/dbuser/index.asp

COURSE TITLE:  AVIM 102H General Aviation Maintenance Technology Practices II.

SUBJECT AREA AND COURSE NUMBER:
Aviation Maintenance Technology (AVIM) 102H       Course CRN # 08835

CLASS MEETS:    Wed. - Thu. 10:20am to 1:30pm

CATALOG COURSE DESCRIPTION:
This course provides practical training in aircraft fuel and instrument systems, materials and processes, aircraft hardware, corrosion control, and drafting and blueprint reading. The content of this course meets the minimum requirements of Chapter 14 Combined Federal Regulations Part 147, Appendix B: Subjects B, D, E, and G; 14 CFR Part 147, Appendix C, Section II: Subjects D and F. Degree Credit. (FT) This course is not open to students with credit for Aviation 50, 100S, 100L and 102E.

COURSE STUDENT LEARNING OUTCOMES:
C. Upon completion of this block the student will be able to:
   1. Adjust and test an aircraft fuel and instrument system to the proper limits using acceptable methods and practices.
   2. Manufacture an aircraft fluid line and install the proper fittings to include rigid and flexible lines to FAA airworthy standards.
   3. Research and identify proper parameters for an aircraft fuel and instrument system using FAA approved or acceptable data.
   4. Inspect and identify defects in a rigid and flexible hose assembly to determine airworthiness.
   5. Identify assigned aircraft hardware and control cables.
   6. Accurately determine the dimensions of assigned parts.

D. Upon completion of this block the student will be able to:
   1. Demonstrate proper non-destructive procedures on an assigned part to acceptable standards.
   2. Use a Rockwell Hardness Tester and identify the hardness of the assigned material.
   3. Remove corrosion from an assigned part using the grit blast method.
   4. Swing an assigned compass and prepare a deviation card to airworthy standards.
   5. Plumb an assigned Pitot/Static and Vacuum system to acceptable standards.
E. Upon completion of this block the student will be able to:
   1. Sketch a perspective and an orthographic projection using acceptable drafting techniques.
   2. Identify common symbols used in aircraft blueprints and maintenance manuals.
   3. Read, interpret, and record information from an aircraft blueprint.
   4. Read, interpret, and record information from typical airframe or powerplant graphs and charts.

EVALUATION:
A. Block grades will be determined on the following criteria:
   1. Blocks C – E (includes blueprints)
      a. Required projects = 60%
      b. Final Exam = 40%
B. A maximum grade of 70% will be given for all make-up tests and/or projects as a result of unexcused absence. (See College Catalog, Academic Policies)
C. A maximum grade of 70% will be given for all projects repeated as a result of late or sub-standard work.
D. Course grade will be the average of the Block C, Block D, and Block E grades.
E. If a student fails to complete all required Tests, Projects, Presentation or Federal Time Requirements, an unsatisfactory grade will be issued.
F. For a list of required projects, see the attached Course Record Sheets.
G. For further information regarding Grading standards see attachment "A" (Grading Policy)

METHOD OF INSTRUCTION: Lecture, class discussion, and demonstration, supported by various forms of audio-visual aids.

TEXT AND SUPPLIES: texts and supplies listed in Bold are required
- FAA-H-8083-31-V1 Airframe and Powerplant Mechanics Airframe, Vol. 1
- FAA Advisory Circular AC 43.13-1B/2B Acceptable Methods, Techniques, and Practices
- Federal Aviation Regulations for Mechanics (FAR/AMT)
- Standard Aircraft Handbook; Larry Reithmair
- Dictionary of Aeronautical Terms, 5th edition, Dale Crane
- Aircraft Basic Science; GLENCOE Series; Kroes & Rardon (Optional)
- Aircraft Maintenance & Repair; GLENCOE Series; Kroes, Watkins & Delp (Optional)
- Scientific calculator
- Scantron Test Answer Sheets
- Three-ring loose leaf binder
- Colored pencils
- Blueprint Worksheet Packet
- Pen and #2 pencil (mechanical pencil .005 or .007 recommended)
- Drawing kit (60-30-90 triangle and 45-45-90 triangle)
- 12” ruler
- Circle gauge or compass
- Good eraser
- Length of 5052-O aluminum tubing (flaring and bending projects)
- Hose Fitting Mandrel Kit
- Toolbox: See attached tool list.
### Reading Assignment

<table>
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<tr>
<th>Chapter References</th>
<th>Precision Measuring Instruments</th>
<th>Tubes, Lines, and fittings</th>
<th>Hardware</th>
<th>Fuel Systems</th>
<th>Instruments</th>
<th>Non-Destructive Testing</th>
<th>Materials and Processes</th>
<th>Corrosion Control</th>
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**NOTE:** Some of the above texts are Federal Publications and may be considered acceptable reference data with possible legal ramifications. The student will be responsible for the reading material as it relates to the current subject.

This reading assignment is parallel to AVIM 101H.

**ATTENDANCE REQUIREMENTS:**
Mandatory attendance is established by 14 CFR Part 147, as well as District Policy. For detailed information see attachment "A" (Attendance Policy)

**ASSIGNMENT:**
Each block of instruction will meet the FAA time requirements. Any additional days will be used for additional instruction or for review. To determine the Projects assigned for each block of instruction refer to the attached Course Record Sheets.

**NOTES:**
1. **Cell Phones, Pagers, and any other Electronic Devices must be turned off during class hours.** Cell phones may not be used as calculators when taking quizzes or tests.
2. **No smoking or chewing tobacco (including snuff) is allowed in the lab.**
3. The instructor reserves the right to change the above Syllabus and schedule with prior notice.

**MIRAMAR COLLEGE TOOL LIST**
The following is a list of minimum tools required for the Aircraft General Student and is not intended as a complete list of tools required for the trade. These tools will satisfy the student in so far as the General Course is concerned and may be added to, as time and funds become available.
1. Toolbox and lock. Recommend a tool bag 13" x 16" x 17" to fit into shop locker.
2. 8" Adjustable wrench (Crescent wrench)
3. Standard set of combination open end/box end wrenches - 12 piece (1/4" - 7/8")
4. Allen wrench set – 13 piece (0.050" to 3/8")
5. 6" Long nose pliers.
6. 6" Slip joint pliers.
7. 6” Duckbill pliers.
8. 6” Diagonal cutters.
9. Ball peen hammer - 8 oz.
10. 6” scale graduated in 1/10”, 1/100”, 1/32”, and 1/64”
11. Medium sized mill bastard file (single or double cut).
12. Medium sized finishing file (second cut suggested).
13. File handle for each file.
14. File card.
15. Center punch.
16. Hacksaw frame and blades (28 or 32 teeth per inch). Note: insure that the hacksaw frame can hold two blades side-by-side at one time.
17. 12” combination square.
19. Eye protection - Glasses, Goggles or Shield (OSHA Approved)
20. Safety Wire - .032” & .041” size (sharing with classmates recommended)

Attachment A
Grading Policy
The following uniform grading criteria have been adopted by the instructional staff, conform to district policy, and are approved by the Federal Aviation Administration (FAA).

The minimum passing grade for Blocks C, D, and E shall be satisfactory (70%). A less than satisfactory grade in any block will require the student to repeat the entire course.

The FAA requires a satisfactory grade for each subject area or project within a course. Therefore, a passing academic grade does not necessarily constitute an FAA certification grade. If make-up time, projects or tests are not completed, an unsatisfactory grade will be issued. (See College Catalog)

For specific information concerning the required subject areas, projects, and written assignments, see the course outline, syllabus or course record sheet.

Academic letter grades and their equivalent will be assigned in the following manner:

A - Excellent  90 - 100
B - Good  80 - 89
C - Satisfactory  70 - 79
D - Unsatisfactory  60 - 69
F - Failing  0 - 59
I - Incomplete  (See College Catalog)

Attendance Policy.
The following uniform attendance policy has been adopted by the instructional staff, conforms to district policy, and is approved by the Federal Aviation Administration (FAA).

Instructional Hours: Curriculum hours required for issuance of the certificate(s) of completion shall meet or exceed the standards established in 14 CFR Part 147.

Minimum Attendance: Students are required to comply with the district attendance standards as identified in the school catalog. These standards state in part:
1. The student is expected to attend each scheduled class meeting for which he/she is registered. The student is expected to be on the premises, actively involved in project work, except for scheduled breaks, for the duration of each class.
2. The instructor may excuse absences when the absence results from illness, accidents, circumstances beyond the student’s control, or participation in authorized professional or college activities.

3. **All missed work and time must be made up, regardless of the reason work or time was missed.**

4. Any student accumulating absences which exceed 6% of the total hours that a class is scheduled to meet during its full term, may be dropped by the instructor.

5. Time loss resulting from absences and/or tardiness equaling 12% shall be cause for the cancellation of the student’s enrollment in the course.

6. Tardiness and leaving class early may be treated in the same manner as are absences within the discretionary authority of the instructor as spelled out in the course syllabus.

7. Students must notify the instructor, either by telephone or by e-mail, when they expect to be absent.

8. It is the student’s responsibility to drop all classes in which he/she is no longer attending.

9. Failure to attend class can result in either a lower grade or, as stated above and with due warning, cancellation of enrollment.

The curriculum hours may exceed the minimum hours required by 14 CFR Part 147. Students attendance must meet FAA minimums as identified in the Course Record Sheet. Any scheduled time above the FAA minimums may be used as make up time at the end of the semester. Satisfaction of the time responsibility is required for issuance of a certificate(s) of completion.

Provisions for attendance Make-up: Student absence shall be made up when the number of hours missed prevents meeting the minimum hours required in each course of the approved curriculum.

Make up for laboratory classes will also be obtained through coordination with the course instructor as to projects assigned, equipment and procedures used. Make up work being performed in the shop must be conducted only with the approval of the affected instructor and must be supervised if it involves equipment or shop operations.

Makeup times shall be restricted to time periods when a General Instructor is in attendance. For this class the available time periods shall be as follows:

Monday through Thursday:

- 6:00am to 7:00am
- 1:30pm to 2:30pm
- 7:30pm to 11:00pm.

Friday: as determined by the Instructor

Time cards will be used to record start and stop times and a General Instructor’s initials will be required to validate these entries. Recorded times without the Instructor’s initials will not be accepted as valid and will not count toward accumulated makeup time.

**Subject: Students with Disabilities**

Students with disabilities who may need academic accommodations should contact the instructor as soon as possible. Appropriate accommodations can be identified through coordination with the Disability Support Programs and Services (DSPS) Department. DSPS is located in Bldg. K-204 and can be reached at (858) 536-7212 or (619) 388-7312.
Course number: AVIM 102H (C)

Final Grade: __________

Student Name: ___________________________ Student No.: ___________________________

Min. Req. Hours: 24 _______ Course Hours: 24 _______

Attended: 24 _______ Make-up: 0 _______ Total: 24 _______

PROJECTS:

1. Adjust and test a fuel pressure warning device. __________

2. Adjust and test fuel pressure in an assigned system. __________

3. Identify components in an assigned fuel system and explain their operation. __________

4. Inspect and test a fuel tank. __________

5. Accurately determine the dimensions of assigned objects by using various precision measuring devices. __________

6. Identify correctly the assigned aircraft hardware and control cable. __________

7. Fabricate a hose fitting installation mandrel. __________

8. Inspect and identify defects in rigid tubing and/or flex hose. __________

9. Fabricate, test and install a rigid tube and a flexible hose assembly. __________

Project Avg.: __________

Final Exam: __________

NOTE: COURSE GRADE = (PROJ AVE X 0.6) + (FINAL XM X 0.4) __________

Semester Fall 2017  D. Buser
Course number: AVIM 102H (D)  

Student Name: ___________________________  
Student No.: ___________________________  

Min. Req.Hours: 24  
Course Hours: 24  
Attended: 24  
Make-up: 0  
Total: 24  

PROJECTS:

1. Perform a magnetic particle inspection using proper techniques.  
2. Perform a dye penetrant inspection using proper techniques.  
3. Swing an assigned compass and record the results.  
4. Using a Rockwell Hardness Tester, identify the hardness of assigned material.  
5. Using Type Certificate Data Sheets, record the instrument range markings for an assigned aircraft.  
6. Perform a basic heat treat procedure on an assigned part.  
7. Using the grit blast method, remove corrosion from an assigned part.  
8. Plumb an assigned Pitot-Static and Vacuum system.  

Project Avg:  

Final Exam:  

NOTE: COURSE GRADE = (PROJ AVE X 0.6) + (FINAL XM X 0.4)  

Semester: Fall 2017  

D. Buser
Course number: AVIM 102H (E)  Final Grade: __________

Student Name: ___________________________  Student No.: ___________________________

Min. Req.Hours:  48  Course Hours:  48

Attended:  48  Make-up:  0  Total:  48

PROJECTS:

1. Sketch an orthographic projection from an assigned perspective drawing. __________

2. Sketch a perspective drawing from an assigned. orthographic projection. __________

3. Read, interpret, and explain information from an assigned aircraft blueprint. __________

4. Read, interpret, and explain the data on assigned aircraft/powerplant graphs and charts. __________

Worksheets / Quizzes __________

Project Avg: __________

Final Exam: __________

NOTE: COURSE GRADE = (PROJ AVE X 0.6) + (FINAL EX X 0.4)

Semester: Fall 2017  D. Buser
Safety Instructions and Classroom Rules

1. No shorts, skirts or tank tops allowed in the Lab.

2. No eating, drinking, chewing gum, smoking or chewing tobacco (including snuff) in class.

3. You cannot start any lab work other than research until an instructor is present.

4. The instructor must give you safety instructions before you can work with any equipment.

5. No running or horse play in shop.

6. All accidents, no matter how minor, must be reported to an instructor. Dial 911 if emergency conditions warrant.

7. Release the pressure from any pressurized container or object prior to removal or disassembling.

8. No open toed shoes or sandals allowed in the lab.

9. Remove all jewelry, including watches, bracelets, rings, and necklaces.

10. No loose fitting cloths or neckties allowed in the lab.

11. Read and follow all safety information on the warning label or MSDS (Material Safety Data Sheet) before using any hazardous material.

12. Always wear appropriate eye protection when working on lab activities.

13. The computer lab is for instructional purposes only. Viewing of inappropriate web sites is forbidden.

14. Students are only allowed in faculty areas by invitation only.
Conduct and Academic Honesty

All students are expected to act with civility and personal integrity and to respect other students’ dignity, rights and property, in order to help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self, others, and a civil community.

Academic integrity includes a commitment to refrain from engaging in or tolerating acts of falsification, misrepresentation, or deception. Such acts of dishonesty include cheating or copying, plagiarizing, submitting another person’s work as your own, tampering with the work of another student, facilitating other students’ acts of dishonesty, etc.

Sanctions for breaches in academic integrity may range, depending on the severity of offense, from an award of an “F” or “0” on an assignment to an award of an “F” for the course. Severe cases and/or repeat offenses of academic dishonesty may also result in more severe disciplinary sanctions up to and including suspension or expulsion.

All students have the right to a campus learning environment free from interference or disruption as per the Student Code of Conduct, Policy 3100, which may be found online at http://www.sdccd.edu/docs/policies/Student%20Services/BP%203100.pdf. As such, any disruptive behavior which interferes with the legitimate instructional, administrative, or service functions of the college may subject the responsible individual to disciplinary action. Some examples of unacceptable behavior may include

- Use of profanity
- Verbal disruption
- Verbal or physical intimidation
- Harassment of others
- Blatant disregard for classroom or shop rules
- Physical threats or violence

Actions against such behavior may range from verbal or written warnings up through formal disciplinary hearings. In the event of severe cases of disruptive behavior, the instructor has the right to remove the individual from class on the day of the offense and for the following class period.