CASTLETON UNIVERSITY
COMMUNITY COLLEGE OF VERMONT
NORTHERN VERMONT UNIVERSITY
VERMONT TECHNICAL COLLEGE

VERMONT
STATE COLLEGES SYSTEM

OFFICE OF THE CHANCELLOR
PO BOX 7
MONTPELIER, VT 05601
P (802) 224-3000

TO: Education, Personnel, and Student Life Committee
Megan Cluver, Chair
Karen Luneau, Vice Chair
Janette Bombardier
Ryan Cooney
David Durfee
Shirley Jefferson
Mary Moran

FROM: Yasmine Ziesler, Chief Academic Officer

RE: EPSL Meeting on May 23, 2022

DATE: May 18, 2022

The EPSL Committee of the Board of Trustees is scheduled to meet on Monday, May 23rd from 1:00 to 2:30pm by Zoom.

The agenda includes two items for action: review of a new program proposal in Aviation Maintenance Technology at Vermont Technical College per Policy 102 and review of proposed revisions to Policy 301 on in-state residency for tuition to align with new state legislation.

Continuing its focused oversight of specific transformation efforts, the committee will receive updates on workforce development, a new labor-management task force, and the continued work on academic transformation, including optimized program development and review, governance design, general education, and development of "face-to-face plus" delivery modalities.

I can be reached directly at (802) 224-3025 if you have any questions.

Thank you.

Cc: VSC Board of Trustees
Council of Presidents
Chief Academic Officers
Student Affairs Council
HR Council

Vermont State Colleges Board of Trustees
Education, Personnel, and Student Life Committee

May 23, 2022

AGENDA

1. Call to order
2. Approval of March 21, 2022 meeting minutes
3. Policy 102 New Program Proposal in Aviation Maintenance Technology
4. Policy 301 revision
5. Workforce Development update
6. Benefits review by labor-management task force
7. Academic transformation progress update
8. Other business
9. Comments from the public

MATERIALS

1. March 21, 2022 minutes
2. Policy 102 Proposal for Aviation Maintenance Technology
3. Policy 301 draft revisions

ITEM 1:

March 21, 2022 Minutes

Minutes of the VSCS Board of Trustees' Education, Personnel, and Student Life Committee meeting held Monday March 21, 2022 at 1:00 p.m. via Zoom - UNAPPROVED

Note: These are unapproved minutes, subject to amendment and/or approval at the subsequent meeting.

The VSCS Board of Trustees Education, Personnel, and Student Life Committee met on Monday, March 21, 2022 via Zoom.

Committee Members present: Megan Cluver (Chair), Janette Bombardier (1:30), Ryan Cooney, David Durfee, Karen Luneau, Mary Moran

Absent:	Shirley Jefferson
Presidents:	Joyce Judy, John Mills, Tom Mauhs-Pugh
Chancellor's Office Staff:	Donny Bazluke, Network/Security Analyst Kellie Campbell, Chief Information Officer Wilson Garland, Director of Transformation Jen Porrier, Administrative Director Kathryn Santiago, Associate General Counsel Sharron Scott, Chief Financial/Operating Officer Patty Turley, General Counsel Meg Walz, Director, Project Management Sophie Zdatny, Chancellor Yasmine Ziesler, Chief Academic Officer
From the Colleges:	Nolan Atkins, Provost, Northern Vermont University Jae Basiliere, Director of the Center for Teaching & Learning, Northern Vermont University Beth Camp, Student Success Specialist, Vermont Technical College Sarah Chambers, Coordinator of Instructional Technology, Castleton University Skye Erskine, Academic Counselor, Vermont Technical College Ana Gaillat, Dean of Academic Affairs, Vermont Technical College Kathleen Mason, Coordinator for Diversity, Equity & Inclusion, Vermont Technical College Joan Richmond-Hall, Faculty, Vermont Technical College Ashley Stackowitz, Academic Support Counselor, Vermont Technical College Julie Theoret, Faculty, Northern Vermont University

Beth Walsh, President, VSCUP, Northern Vermont University

1. Call to Order

Chair Cluver called the meeting to order at 1:03 p.m.

2. Approval of January 24, 2022 Meeting Minutes

Trustee Moran moved and Trustee Cooney seconded the motion to approve the January 24, 2022 meeting minutes. The motion was approved unanimously.

3. Recommendation of VSC Faculty Fellows for 2022-2023

Chief Academic Officer Yasmine Ziesler asked Northern Vermont University President John Mills to give a brief overview of the first Faculty Fellow candidate, Gina Mireault. President Mills shared that Ms. Mireault's work is highly regarded in her field and will provide great benefits for future NVU Psychology students. Castleton University President Tom Mauhs-Pugh then discussed the qualifications of nominee Chris Boettcher, stating that his entire career demonstrates outstanding contributions to teaching and learning at Castleton and beyond.

Trustee Luneau moved and Trustee Moran seconded the motion to recommend to the Board the approval of the Faculty Fellow nominations for Gina Mireault and Chris Boettcher. The motion was approved unanimously.

4. Update on High-Priority Academic Transformation Projects

Dr. Ziesler shared a presentation on Academic Programs Optimization projects that can be found here on pages 7-11. Vermont Technical College Faculty Assembly Moderator Joan Richmond-Hall described the process by which the Curriculum Committees and Faculty Assembly chairs are working through the coordinated review process. Professor Julie Theoret, on behalf of the Faculty Federation, shared that many of the ideas proposed by the Labor Task Force two years ago are being integrated into the ongoing faculty work on the academic structure of the new university. Dr. Ziesler went on to discuss other high priority academic transformation projects currently underway such as the "Face-to-Face Plus" Faculty Pilot Project and a goal to develop a faculty governance structure for the new University. Chair Cluver asked for a future update with data on prospective student interest in the optimized program array. The Committee acknowledged the hard work of faculty in preparing for the launch of the new university.

5. Preview of Postsecondary Data Project dashboard metrics for student success

Dr. Ziesler shared a presentation on Postsecondary Data Partnership Dashboard Overview which can be found here. Dr. Ziesler went on to describe and explain the data and data tools displayed in the report and how it can be applied to define student success goals and metrics for Vermont State University.

6. Other Business

There was no other business.

7. Comments from the public

There were no comments from the public.

Chair Cluver adjourned the meeting at 2:09 p.m.

ITEM 2:

Policy 102 Proposal for Aviation Maintenance Technology

VERMONT STATE COLLEGES
POLICY 102 NEW PROGRAM PROPOSAL TEMPLATE

Part I: General Information

1. Institution: *Vermont Technical College*

2. Name of new program: *Aviation Maintenance Technology*

a) Individual(s) with responsibility for program development: *Robin Guillian, Moses Daley, and Jason Gingold*

b) Academic Department(s): *School of Professional Studies and Management*

3. Proposed start date of program: *Fall 2022*

4. Title of degree to be conferred (if applicable): *Associate in Applied Science with a major in Aviation MaintenanceTechnology*

5. Brief description of proposed program (150 words or less): *Vermont Technical College (VTC), in collaboration with the Burlington Technical Center (BTC), will offer an Associate's Degree in Aviation Maintenance Technology. This partnership allows VTC access to the BTC training facilities and outreach structures without additional expenditures. BTC supplies the faculty and infrastructure necessary to meet the Federal Aviation Administration (FAA) 14 CFR Part 147 aviation maintenance training standards. VTC provides the faculty to teach the general education core courses as part of the campus-based residency semester. In addition, VTC provides faculty oversight and mentoring for the AER courses. The Partnership between BTC and VTC will provide both schools with a pipeline of expanding Aviation Education starting in BTC's middle school outreach to completion of a degree at VTC.*

Part II: Rationale

1. How the program will strengthen the institution (refer to institutional mission, institutional priorities and existing institutional programs) and how the perceived interest in the program at the institution was determined: ***"We provide career-focused technical and professional education in a caring community which prepares students for immediate workplace success and continued learning."*** *There is clear, present and future demand for aviation maintenance professionals both in and out-of-state. VTC can provide this education and training for the benefit of both the student and potential employers.*

2. Specific student, educational and/ or employment need(s) to be addressed, including in-person, hybrid, low-residency, or distance mode(s) of program delivery, and whether these needs are local, state, regional, national or global (attach documentation of need in the form of supporting data from external or internal sources such as professional organizations, feedback from corporate partners, or market research).

   Student educational and career needs: Overall employment of aircraft and avionics equipment mechanics and technicians is projected to grow 11 percent from 2020 to 2030, faster than the average for all occupations. Oct 21, 2021 Aircraft and Avionics Equipment Mechanics and Technicians https://www.bls.gov › installation-maintenance-and-repair

   A college degree in aviation technology does more to improve employment opportunities and career advancement than it does starting salary, reports the U.S. Bureau of Labor Statistics. Employers now seek candidates with a bachelor's degree in the field of aviation or aircraft maintenance and prefer to promote those with that level of education. Salaries do vary by employer and location.

   While a college degree isn't required for this occupation, most aircraft mechanics obtain at least 18 months of training from an FAA-approved aviation maintenance technician school. Associate and bachelor's degree programs are available in disciplines related to aviation technology and management.

   Obtaining a degree can increase employment opportunities and allow students to take the exam for certification faster than those who learn their skills on the job. The most common degree for Aircraft Mechanics is Associate Degree: 38% of Aircraft Mechanics earn that degree. A close second is Bachelor's Degree with 28% and rounding it off is High School Diploma with 21%.

   - *Associate, 38%*
   - *Bachelors, 28%*
   - *High School Diploma, 21%*
   - *Diploma, 6%*
   - *Other Degrees, 7%*

Since most Aircraft Mechanics have a college degree, Burlington Technical Center graduates of their secondary school certificate program are at a disadvantage when competing for entry-level positions and significantly limited in career advancement opportunities within the Aviation Industry.

Delivery: Aviation Maintenance Technology is an applied in person education and training that is available at Burlington Technical Center. All supplies, training aids, and aircraft are currently maintained and in use for educational purposes at Burlington Technical Center. Student will take 44 credits of AER courses at the Burlington Technical Center facility. They will take an additional 20 credits of general education (English, mathematics, science, computer information systems, humanities, and social science) courses at the VTC campuses in Williston and/or Randolph Center.

3. How the program will strengthen the System. If the program approximates existing programs within the System, describe why the development of an additional program will serve particular need(s). If it is a distinct program that expands System offerings, please describe what value it offers, any intended collaboration with other VSC colleges or organizations in planning or delivering this program, and, if appropriate, indicate specific benefits to the State of Vermont):

The Aviation Maintenance Technology program will be a distinct, unique offering within the VSC system. The program will be a logical addition to the VTC Aviation Department, which houses the Professional Pilot Technology Program making VTC a hub for aviation training in Vermont. Collaboration with BTC to provide the hands-on portion of the training not only saves VTC and the State money, it also provides well rounded, workers for Vermont-based aviation and nationwide aerospace industries. The partnership will expand access *to recruiting students into the VTC program as BTC works with grades 7-12 from fourteen different Chittenden County school districts.*

Part III: Program Description

1. Specific program objectives, including career and learning outcomes for students: ***"Vermont Tech faculty, staff and students believe that an educated person is one who assumes responsibility for their own learning, for career preparation, and for citizenship. We believe that an educated person consistently strives to reach their full potential, can think critically, is globally aware, is civically engaged, is curious, and is an effective communicator."*** *Aviation, at base level, is about travel, outreach and connection on a global scale. While a student could get certified to work on aircraft, similar to choosing a career in diesel technology or welding, having the additional academic experience allows the graduate the opportunity to be more competitive in the work environment by presenting higher communication, writing, collaboration, and technology skills than those having only a High School Diploma. The technology present in aircraft and the industry is changing rapidly and becoming more advanced. Students will need additional critical thinking skills to be and stay competitive in the field. Similar to any VTC hands on program the transferable skills acquired and learned will help all VTC graduates in their post-graduation employment.*

2. How the program will integrate professional, liberal and career study:
   The Aviation Maintenance Technology curriculum provides professionalism skills as well as has a rigorous academic component.

3. What peer programs or model curricula served as a basis for the proposal: *Mohawk Valley Community College's Mechanical Technology: Aircraft Maintenance A.A.S., Nashua Community College's Aviation Technology program and Helena College's Aviation Maintenance Technology program.*

4. How the program will assess its effectiveness in achieving student learning outcomes*: If a graduate of the program becomes certified and gainfully employed after graduation, that will be considered one measure of success. Other measurements that can be collected as data to gauge the success of the program are; completion of FAA hours, earned industry required certifications, and length of employment within the field 1-3 years after graduation.*

5. How the program incorporates current standards and/or emerging directions in the field, and what the program will require to maintain licensure, certification, or accreditation standards with external entities, if any. *VTC will not be required to hold any additional certifications, licensure, etc. Any FAA Part 147 certificate issues are dealt with by BTC.*

6. Program outline; include brief descriptions of all new courses: *See course description document and spreadsheets for description and credit hour allocation.*

Course Name & Number		Credits	New or Existing?
Year One: (secondary)			All AER are New
AER1000	General I	2	
AER1002	Aircraft and Airmen Regulations and Documents	2	
AER1004	Aircraft Environmental Protection	1	
AER1006	Aircraft Blueprints and Drawings	1	
AER1008	Aircraft Electronic Theory	3	
AER1012	Aircraft Materials, Testing and Tools	2.5	
AER1014	Aircraft Ground Handling 1	1	
ENG1060	English Composition	3	
MAT1210	Principles of Mathematics	3	Existing
			Existing
Year Two: (postsecondary)		2	
		3.5	
AER2000	Airframe Electrical Systems	2.5	
AER2001	Airframe Construction and Inspections	2.5	
AER2003	Airframe Structures I	1	
AER2005	Airframe Structures II	1	
AER2007	Hydraulics and Pneumatics	3	
AER2009	Landing Gear Systems	3	
AER2011	Airframe Systems	1	
AER2002	Powerplant Electrical Systems	2	
AER2004	Powerplant Fuel Systems	1.5	
AER2006	Powerplant Ignition Systems	1	
AER2008	Engine Systems	1.5	
AER2012	Propellers	5	
AER2014	Reciprocating Engine Theory and Repair	4.5	
AER2016	Turbine Engine Theory and Repair		
Year Three (One Semester)			All Existing
ENG2080 Technical Communications		3	
PHY1030 General Physics		4	
ELEXXX Humanities Elective		3	
ELTXXX Social Science Elective		3	
CIS1050 Introduction to Spreadsheets		1	
Total			

7. TOTAL CREDITS in proposed program: 44

8. TOTAL GENERAL EDUCATION CREDITS beyond those in the program: 20

9. TOTAL CREDITS for the degree: 64

10. For associate and baccalaureate degree programs, provide a 2- or 4-year degree map showing intended semester-by-semester sequence of courses including program courses, general education requirements, and electives. For graduate degree programs, describe the intended timeframe and sequence for completion of the degree. *See spreadsheet for more details*

Part IV: Budget Considerations

1. Expenditures for the proposed program:

	Year One	Year Two and Three
Faculty	6,000	32,000*
Admin/Other Staff	0	0
Facilities/Equipment	Existing	Existing
Library/Other Materials	Existing	Existing
Other Costs (e.g. accreditation/licensure expenses)	FAA certification in place	FAA certification in place
TOTAL COSTS:	6,000	32,000

Budget Justification:

*Faculty: AER courses will be taught by BTC faculty who are being compensated by the Burlington Technical Center. Three $2,000 stipends will be available for Vermont Tech Professional Pilot Technology faculty to perform classroom observation and provide instructional mentoring to BTC faculty teaching Vermont Tech AER courses. *Year Two faculty costs ($26,000) assume new sections of existing general education courses may need to be created to accommodate the projected 10 Aviation Maintenance Technology students in Year Two Spring Semester. An additional $6,000 is for the continuation of the PPT faculty instructional mentors.*

2. Revenue/sources to meet new expenditures

	Year One	Year Two and Three
Tuition	$36,780 (dual enrollment)	$36,780 (dual enrollment) $83,000 (10 students/one semester)
Reallocation		
Other Sources		
TOTAL REVENUES:	$36,780	$119,780

Revenue Justification:

Year One: Ten students will be enrolled in the first year through Dual Enrollment. The State of Vermont will cover the cost of two dual enrollment courses per year per student.

Year Two/Three: Ten new students will be enrolled in the first two semesters through Dual Enrollment. Ten students will be enrolled full-time in Year Three One Semester.

Part V: Enrollment, Marketing and Public Relations Considerations

a. Projected enrollment for new program:

	Year One	Three Years Out
Full-Time	10	30
Part-Time		
In-State	10	30
Out-of-State	0	0

2. Describe how you arrived at these projections:

3. Describe the marketing strategies for the new program. *T.B.D. but can leverage on marketing already done on behalf of the Professional Pilots. In addition, VTC can collaborate and build upon BTC's marketing and outreach efforts to expand the pool of college applicants to include those from more diverse/non-traditional backgrounds.*

4. Competition:
   a. In state and region: *None in-state, none in region having this particular model of technical training beginning in high school.*
   b. Web-based: *Like pilot training, maintenance training is difficult to administer via the internet.*

5. How the program will impact enrollments in existing programs at the College: *The only impact should be positive. Having more aviation training and career options at VTC should only help enrollment. Existing VTC students wishing to change majors (within the entire college or between the pilot program and aviation maintenance) would have one more option thus providing positive student retention.*

6. How the program will impact enrollments in existing programs at other VSC colleges: *No impact as no other VSC colleges offer anything comparable.*

7. How the program will impact existing and/ or future external relations: *VTC prides itself with providing Vermont employers the well-rounded employees needed to operate. This program will not only fulfill that goal but will expand the network of Vermont-based and Regional employers VTC interfaces with.*

VERMONT TECHNICAL COLLEGE

AVIATION MAINTENANCE PROGRAM

CREDIT ALLOCATION CALCULATION PROCEDURE

- Federal guidelines state that for each credit hour spent in lecture (classroom), two credit hours are spent outside of class in additional study. Example: A student attending a 3 credit-hour course would spend 3 hours/week in lecture and 6 hours/week in additional study for a total of 9 hours.

- Federal guidelines state that each hour spent in lab or shop is worth 1/3 – 2/3 of that hour. Example: A student spends 3 hours in lab as part of a class. According to the guideline, the student would only receive 1-2 hours' worth of credit.

- The American Council on Education (A.C.E.) has determined that the Federal Aviation Administration (FAA) Mechanic Certificate with an Airframe and Powerplant Rating "worth" 67 college credits. The amount of credit hours used in the VTC Maintenance Program calculation met or exceeded the ACE recommendation.

Therefore the following method was employed:

- Of the total hours spent in class (lecture), two out of every three hours would be considered "homework" or "outside study" time. Three hours of classroom time would therefore be worth 1 credit hour (a multiplication factor of 0.33).

- Of the total time spent in the lab, per Federal guidelines, only a third would be counted towards a credit hour of instruction. Three hours of lab time would count as 1 credit hour (a multiplication factor of 0.33).

- Example: AER 2007 consists of 30 hours of lecture and 30 hours of lab. Converting this to the VTC model credit hours, using the guidelines above, are as follows:

Lecture: (30 hours x 0.33)/15 weeks = 0.66 credit hours (rounded to 0.5 credits)

Lab: (30 hours x 0.33)/15 weeks = 0.66 credit hours (rounded to 0.5 credits)

AER 2007 is therefore a 1 credit class.

Using this method, total credits for the aviation-specific portion of the degree is 44.5 credits. With the required General Education Courses of 20 credit hours. For a total of 64.5 credits.

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2000**
COURSE TITLE	**Airframe Electrical Systems**
SHORT TITLE	Airframe Electrical Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	2
CROSS-LIST	
HOURS	1 hours of lecture, 1 hour of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	In this course, the student learns the basic theory of generator and motor operation and demonstrates the inspection and repair of these components. They also gain an understanding of airframe electrical system architecture. As the repair of aircraft wiring is important to the technician, the types and techniques of wire splices and terminations are learned and practiced.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand the basic theory of generator and motor operation as it pertains to airframe electrical systems (PO1) 2. Demonstrate inspection and repair of components (PO2) (PO4) 3. Understand airframe electrical wiring (PO1)
COURSE CONTENT	1. Getting started 2. Safety and terms 3. Generator theory 4. 12-volt shunt wound generator systems 5. 24-volt compound wound generator systems 6. 12/24 alternators 7. 120/208 VAC generators 8. Inverters and rectifiers
LAB OUTCOMES	The successful student will be able to: 1. Demonstrate inspection and repair of components (PO2) (PO4)
LAB CONTENT	1. Basic generator inspection and testing
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	35 hours lecture, 49 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2001**
COURSE TITLE	**Airframe Construction & Inspection**
SHORT TITLE	Airframe Const & Inspect
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	3.5
CROSS-LIST	
HOURS	1.5 hours of lecture, 2 hours of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	This class goes in-depth into the different airframe components, their function, removal, inspection, and installation. The student performs tasks such as balancing a flight control, which then leads into a complete 100-hour airframe inspection.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Describe airframe components and their functions. (PO1) 2. Perform airframe component removal, inspection and installation (PO2) 3. Complete a 100-hour airframe inspection (PO3) (PO5)
COURSE CONTENT	1. Getting started 2. Administrative forms and requirements 3. Introduction to airframe structures 4. Wood fuselage construction 5. Wood wing construction 6. Basic aerodynamics 7. The airfoil 8. Flight forces 9. Axes of an aircraft, stability, and control 10. Secondary and auxiliary controls 11. High speed aerodynamics 12. Rigging specifications 13. Rigging supplies and equipment 14. Introduction to rotary wing aircraft 15. Helicopters
LAB OUTCOMES	The successful student will be able to: 1. Perform airframe component removal, inspection and installation (PO2) 2. Complete a 100-hour airframe inspection (PO3) (PO5)
LAB CONTENT	1. Assembly and rigging procedures 2. Inspection procedures
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	62 hours lecture, 94 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2002**
COURSE TITLE	**Powerplant Electrical Systems**
SHORT TITLE	Powerplant Elect Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	1
CROSS-LIST	
HOURS	0.5 hours of lecture, 0.5 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	The student learns about the different types of generators and motors on powerplants and can demonstrate the inspection and repair of these systems. They gain an understanding of powerplant electrical system architecture. As the repair of powerplant wiring is important to the technician, the types and techniques of wire splices and terminations are studied and practiced.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Inspect and repair generators and motors on powerplants (PO2, 4) 2. Demonstrate wire splicing and wire termination (PO2, 4)
COURSE CONTENT	1. Getting started 2. Starter motor safety and terms 3. Aircraft motor theory 4. Aircraft DC motors 5. Aircraft starter motors 6. Starter generators 7. Generator safety and terms 8. Generator theory 9. 12-volt shunt wound generator system 10. Wiring safety and terms 11. Wiring Diagrams 12. Powerplant wiring 13. Circuit protection devices 14. Circuit controls
LAB OUTCOMES	The successful student will be able to: 1. Inspect and repair generators and motors on powerplants (PO2, 4) 2. Demonstrate wire splicing and wire termination (PO2, 4)
LAB CONTENT	1. Basic generator inspection and testing 2. Wiring installation 3. Electrical Troubleshooting
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	27 hours lecture, 31 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2003**
COURSE TITLE	**Airframe Structures I**
SHORT TITLE	Airframe Structures I
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	2.5
CROSS-LIST	
HOURS	1 hour of lecture, 1.5 hours of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	In this course, the student learns about different aircraft construction methods to include wood, fabric, composites, and welding, as well as the science behind their development. They have the opportunity to practice these building methods by constructing small structures, damaging, then repairing them to observe various outcomes.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand different aircraft construction methods and the science of their development (PO1) 2. Construct small structures for test and repair (PO4) 3. Apply data to implement better practice (PO2, 5)
COURSE CONTENT	1. Getting started 2. Introduction to aircraft structures 3. Wood repairs 4. Fundamentals and introduction to welding 5. Oxyacetylene welding 6. Arc welding (shielded metal arc) 7. Gas tungsten arc welding (GTAW) 8. Gas metal arc welding (GMAW) 9. Special joining techniques 10. Material selection 11. Welding inspection 12. Introduction to fabric covering 13. Natural fabrics 14. Synthetic fabrics 15. Fabric airworthiness testing 16. Preparation, procedure, and limitations of fabric covering 17. Legal registration 18. Composite materials 19. Plastics
LAB OUTCOMES	The successful student will be able to: 1. Construct small structures for test and repair (PO4)
LAB CONTENT	1. Repair and fabrication 2. Inspection of tubular welds 3. Dope and finish applications 4. Doped repairs 5. Finishes 6. Composite manufacturing 7. Composite repairs
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	58 hours lecture, 80 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2004**
COURSE TITLE	**Powerplant Fuel Systems**
SHORT TITLE	Powerplant Fuel Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	2
CROSS-LIST	
HOURS	1 hour of lecture, 1 hour of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	A properly functioning engine fuel metering system is critical to the safety of an aircraft engine. The student learns the theory of operation behind piston and turbine engine metering systems to include float and pressure carburetors, fuel injection systems, hydro mechanical, and Full Authority Digital Engine Control. As many of these units are precision assemblies, the student learns which units can and can't be repaired. The student discusses and practices removal/replacement, disassembly/reassembly, inspection, and adjustment.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand fuel metering for piston and turbine aircraft engines (PO1) 2. Choose which fuel systems can be repaired or not (PO2) 3. Remove, inspect, and replace various fuel system components (PO2)
COURSE CONTENT	1. Getting started 2. Fuel system terms and safety 3. Characteristics of gasoline 4. Fuel systems 5. Float type carburetors 6. Pressure carburetors
LAB OUTCOMES	The successful student will be able to: 1. Remove, inspect, and replace various fuel system components (PO2)
LAB CONTENT	1. Principles of carburation 2. Fuel injection systems 3. Turbine engine fuel metering systems
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	36 hours lecture, 42 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2005**
COURSE TITLE	**Airframe Structures II**
SHORT TITLE	Airframe Structures II
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	2.5
CROSS-LIST	
HOURS	1 hour of lecture, 1.5 hours of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	Picking up from the end of *AER 2003*, the student delves into the theory and practice of sheet metal repair and construction. This includes subjects such as bend allowance, load calculations, layout, forming, and riveting. Starting with the different metal alloys, fasteners, and tools used for construction, the student expands their sheet metal skill-set by learning to fabricate simple parts, then building a small wing spar section. At the conclusion of the course, repair processes are discussed and practiced on their individual projects.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand sheetmetal theory, construction and repair (PO1, 3) 2. Perform load calculations (PO1) 3. Fabricate metal parts (PO2, 4) 4. Perform sheetmetal repairs (PO2, 4)
COURSE CONTENT	1. Getting started 2. Rivet guns and drills 3. Rivets (basic) 4. Airframe (metals) 5. Rivets (advanced) 6. Shop equipment 7. Sheetmetal structural loading 8. Unconventional fasteners
LAB OUTCOMES	The successful student will be able to: 1. Fabricate metal parts (PO2, 4) 2. Perform sheetmetal repairs (PO2, 4)
LAB CONTENT	1. Rivet layout 2. Layout and bending of flat sheet stock 3. Sheetmetal repairs
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	40 hours lecture, 80 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2006**
COURSE TITLE	**Powerplant Ignition Systems**
SHORT TITLE	Powerplant Ignition Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	1.5
CROSS-LIST	
HOURS	1 hour of lecture, 0.5 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	Powerplant ignition systems include both the magneto installed on piston engines and capacitance discharge systems on turbine engines. The student learns the theory of operation of both systems and learn appropriate safe handling techniques for these complex systems. As the class progresses, they delve into the disassembly, inspection, reassembly, and testing of both systems. Topics in this class include magneto timing and testing, spark plug servicing, and turbine ignitor inspection and testing.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand the theory of ignition systems for piston and turbine aircraft (PO1) 2. Disassemble and reassemble ignition systems (PO2) 3. Inspect and test ignition systems (PO2, 4)
COURSE CONTENT	1. Getting started 2. Safety 3. Magneto basic theory and test equipment
LAB OUTCOMES	The successful student will be able to: 1. Disassemble and reassemble ignition systems (PO2) 2. Inspect and test ignition systems (PO2, 4)
LAB CONTENT	1. Aircraft reciprocating engine ignition systems 2. Aircraft turbine ignition system
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	40 hours lecture, 33 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2007**
COURSE TITLE	**Hydraulics & Pneumatics**
SHORT TITLE	Hydraulics & Pneumatics
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	1
CROSS-LIST	
HOURS	0.5 hours of lecture, 0.5 hours of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	Hydraulics and Pneumatics are used to power many aircraft systems. The student learns the theory of operation behind these systems, as well as the various hydraulic and pneumatic components in them. Theory includes calculating force and pressure, as well as troubleshooting, inspection, and repair of items such as hydraulic actuators and pumps. The student has the opportunity to remove, repair, reinstall, and test their components in actual aircraft systems.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand the theory and operation of hydraulic and pneumatic systems. (PO1) 2. Perform inspections repairs and servicing of hydraulic and pneumatic systems and component. (PO2) (PO5)
COURSE CONTENT	1. Getting started 2. Fundamentals of hydraulic systems 3. Fundamentals of pneumatic systems
LAB OUTCOMES	The successful student will be able to: 1. Perform inspections repairs and servicing of hydraulic and pneumatic systems and component. (PO2, 5)
LAB CONTENT	1. Basic hydraulic system maintenance procedures
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	30 hours lecture, 30 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2008**
COURSE TITLE	**Aircraft Engine Systems**
SHORT TITLE	Aircraft Engine Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	1
CROSS-LIST	
HOURS	0.5 hours of lecture, 0.5 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	Similar to *AER 2011*, this class examines those ancillary systems specific to the powerplant. A general overview in areas to include lubrication, fire protection, and engine instrumentation systems is followed by hands-on practice. Skills practiced include oil filter inspection; instrument testing and calibration; oil pressure adjustment; and fire detection system testing.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Describe engine lubricating, fire protection and engine instrument systems (PO1) 2. Perform testing and adjustment of engine lubricating, fire protection and instrument systems (PO2, 4)
COURSE CONTENT	1. Getting started 2. Introduction to the lubrication system 3. Types of lubricating systems 4. Operation and components of lubricating systems 5. Aircraft engine instruments and warning systems
LAB OUTCOMES	The successful student will be able to: 1. Perform testing and adjustment of engine lubricating, fire protection and instrument systems (PO2, 4)
LAB CONTENT	1. Maintaining and troubleshooting the lubrication system 2. Fire protection systems 3. Operation, maintenance, repair, and troubleshooting fire detection and protection s
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	24 hours lecture, 12 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2009**
COURSE TITLE	**Landing Gear Systems**
SHORT TITLE	Landing Gear Sys
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	1
CROSS-LIST	
HOURS	0.5 hours of lecture, 0.5 hours of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	The student learns about the various components that comprise aircraft landing gear; such as wheels, tires, brakes, gear retraction, and shock absorbing mechanisms. They then learn disassemble/reassemble, inspection, and repair procedures and practice on various components. The learn the process of placing an aircraft on a jack (lift) and performing a landing gear retraction test.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Describe aircraft landing gear systems. (PO1) 2. Perform inspection and repair of landing gear components. (PO2, 5) 3. Demonstrate safely placing an aircraft on jacks (lift) for landing gear retraction test. (PO3, 4)
COURSE CONTENT	1. Getting started 2. Landing gear basics 3. Aircraft brake theory 4. Aircraft wheels, tires and tubes
LAB OUTCOMES	The successful student will be able to: 1. Perform inspection and repair of landing gear components. (PO2, 5) 2. Demonstrate safely placing an aircraft on jacks (lift) for landing gear retraction test. (PO3, 4)
LAB CONTENT	1. Landing gear system components 2. Aircraft brake and wheel maintenance
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	30 hours lecture, 30 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2011**
COURSE TITLE	**Airframe Systems**
SHORT TITLE	Airframe Systems
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	No
CREDITS	3
CROSS-LIST	
HOURS	1.5 hours of lecture, 1.5 hour of lab per week
SEMESTER	Fall
COURSE DESCRIPTION	In Airframe Systems, the student gains an understanding of aircraft ancillary systems to include fuel delivery, fire protection, flight instruments, climate control, communication, and navigation systems. In a more generalized format, inspection, troubleshooting, and repair techniques are learned and practiced.
SUGGESTED TEXTS	*A&P Technician Airframe Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand the basics of fuel delivery, fire protection, climate control, and communication/navigation/flight instruments as applicable to the airframe (PO1) 2. Perform troubleshooting and repair of these systems (PO2)
COURSE CONTENT	1. Getting started 2. Atmospheric conditions and requirements 3. Air conditioning systems 4. Heating systems 5. Fire detection, protection, and extinguishing systems 6. Instrument and position and warning lights 7. Communication and navigation systems
LAB OUTCOMES	The successful student will be able to: 1. Perform troubleshooting and repair of these systems (PO2)
LAB CONTENT	1. Oxygen systems 2. Fuel systems 3. Ice and rain control systems 4. Instruments; pitot-static; position and warning; and communication/navigation systems
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	69 hours lecture, 63 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2012**
COURSE TITLE	**Aircraft Propellers**
SHORT TITLE	Aircraft Propellers
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	1.5
CROSS-LIST	
HOURS	1 hours of lecture, 0.5 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	Aviation powerplant mechanics are limited in the types of repairs and alteration they are allowed to perform to propellers and their systems. This class focuses on theory and those repairs allowed by the FAA. Subject areas include propeller and governor theory, turboprop operation, balancing, repair, and adjustment. The student practices blade repair, governor adjustment, prop de-ice testing, and troubleshooting, as well as prop removal and reinstallation.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand propeller theory and allowable repairs (PO1, 2) 2. Describe propeller governor and turboprop operation, balance, and repair (PO1, 2) 3. Perform blade repair, governor adjustment, and de-ice test (PO2, 4)
COURSE CONTENT	1. Getting started 2. Introduction to propellers and propeller control systems 3. Auxiliary systems inspection, service, maintenance, and repair of propeller control systems
LAB OUTCOMES	The successful student will be able to: 1. Perform blade repair, governor adjustment, and de-ice test (PO2, 4)
LAB CONTENT	1. Basic propeller theory
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	40 hours lecture, 33 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2014**
COURSE TITLE	**Reciprocating Engine Theory & Repair**
SHORT TITLE	Recip Eng Theory & Repair
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	5
CROSS-LIST	
HOURS	2 hours of lecture, 3 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	This class begins with reciprocating engine theory including power calculations, induction/exhaust/cooling systems, general engine construction, and testing and measuring of engine parts. Next, the student learns to perform a 100-hour powerplant inspection, which includes an Airworthiness Directive and engine conformity research. The course concludes with the removal of an engine to disassemble, clean, inspect, and measure all internal parts. The engine is then reassembled and reinstalled on the aircraft. The student performs an engine run-up to check all critical functions. Any issues with the engine are diagnosed and repaired.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand reciprocating engine theory to include induction, exhaust and cooling systems (PO1) 2. Perform a 100-hour powerplant inspection (PO3, 5) 3. Remove and disassemble an engine (PO2, 4) 4. Inspect, clean, and measure internal parts (PO2, 4) 5. Reassemble and install an engine onto an aircraft (PO4, 5) 6. Perform a run-up and check critical functions (PO1)
COURSE CONTENT	1. Getting started 2. Terms and safety 3. Engine theory and performance 4. Classifications of reciprocating engines 5. Construction and nomenclature 6. Air induction systems 7. Superchargers 8. Turbocharging 9. Reciprocating engine exhaust systems 10. Reciprocating engine cooling systems 11. Introduction to reciprocating engine overhaul 12. Overhaul preliminaries
LAB OUTCOMES	The successful student will be able to: 1. Perform a 100-hour powerplant inspection (PO3, 5) 2. Remove and disassemble an engine (PO2, 4) 3. Inspect, clean, and measure internal parts (PO2, 4) 4. Reassemble and install an engine onto an aircraft (PO4, 5) 5. Perform a run-up and check critical functions (PO1)
LAB CONTENT	1. Pre-overhaul procedures 2. Cleaning procedures 3. Structural inspection 4. Dimensional inspection repair and replacement 5. Preliminaries for engine removal 6. Reciprocating engine installation and operation 7. Engine inspection 8. Troubleshooting 9. Checks and tests maintenance
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded

EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	85 hours theory, 131 hours lab (see program credit hour notes)

VERMONT TECH

ELEMENT	CONTENT
DEPARTMENT	AER
AUTHOR (S)	Moses Daly, Robin Guillian
COURSE NUMBER	**AER 2016**
COURSE TITLE	**Turbine Engine Theory & Repair**
SHORT TITLE	Turbine Eng Thry & Rpr
COURSE LEVEL	2000
SHARED VSC COURSE	No
DATE CREATED	02/22/2021
CHECKED/CHANGED	
PREREQUISITES	AER 1000, 1002, 1004, 1006, 1008, 1012, 1014 with 85% or better
	Prerequisite must be taken previously ☒
COREQUISITES	
	Corequisite must be taken concurrently ☐
RESTRICTIONS	
SPECIAL FEES	
CREDITS	4.5
CROSS-LIST	
HOURS	1.5 hours of lecture, 3 hours of lab per week
SEMESTER	Spring
COURSE DESCRIPTION	This class begins with turbine engine theory including thrust calculations, induction/exhaust/cooling systems, and the parts of the jet engine itself. Due to the specialized nature of turbine engine construction and tooling. The student disassembles and reassembles a non-running engine to learn about general turbine engine construction. Next, the student performs an Airworthiness Directive and engine conformity inspection, followed by engine removal from a turbine powered aircraft. After cleaning and inspection of the engine and engine compartment, they reinstall the engine and perform an engine run-up to check all critical functions. Any issues with the engine are diagnosed and repaired.
SUGGESTED TEXTS	*A&P Technician Powerplant Textbook*; Jeppesen
OPTIONAL TEXTS	
COURSE OUTCOMES	The successful student will be able to: 1. Understand turbine engine theory to include thrust calculations (PO1) 2. Remove, disassemble, reassemble and reinstall a turbine engine (PO2, 4) 3. Perform and Airworthiness Directive and Engine Conformity inspection (PO3, 5) 4. Perform a turbine engine run-up and check all critical functions (PO1, 3)
	1. Getting started 2. Terms and safety 3. Jet propulsion history and principals 4. Turbine engine performance and efficiencies 5. Classification of jet propulsion engines 6. Construction and nomenclature 7. Turbine engine exhaust systems 8. Turbine engine cooling systems 9. Introduction to turbine engine overhaul 10. Introduction to turbine engine inspection 11. Introduction to turbine engine maintenance 12. Terms and procedures used in troubleshooting
LAB OUTCOMES	The successful student will be able to: 1. Remove, disassemble, reassemble and reinstall a turbine engine (PO2, 4) 2. Perform and Airworthiness Directive and Engine Conformity inspection (PO3, 5) 3. Perform a turbine engine run-up and check all critical (PO1, 3)
LAB CONTENT	1. Disassembly of sections 2. Inspection and repair of parts 3. Reassembly 4. Turbine engine removal 5. Engine preparation for installation 6. Engine operation
LECTURE CAP	12
LAB CAP	12
GRADED OR P/NP	Graded
EVALUATION	Maintenance procedure, exam, attendance
DELIVERY METHOD	LEC, LAB
ROOM REQUIREMENTS	
AUTHOR'S NOTES	75 hours lecture, 141 hours lab (see program credit hour notes)

ITEM 3:
Policy 301 draft revisions

Manual of Policies and Procedures

Title	Number	Page
POLICY ON DETERMINATION OF IN-STATE RESIDENCY FOR TUITION PURPOSES	**301**	**1 of 4**
	Date **6/16/22**	

PURPOSE

The Vermont State Colleges charges different tuition rates to in- and out-of-state students. Therefore, criteria and procedures to determine in-state residency for tuition purposes are required.

STATEMENT OF POLICY

The following requirements must be met by a student prior to being granted resident status for the purpose of tuition and other VSC charges:

1) The student shall be domiciled in Vermont, said domicile having been continuous for one year immediately prior to the date of enrollment. Domicile shall mean a person's true, fixed and permanent home, to which he/she intends to return when absent. Domicile shall not be dependent upon a person's marital status. Although domicile may have been established, a student is presumed to be an out-of-state resident for tuition purposes if he or she moved to Vermont or continues residence in Vermont for the purpose of attending a Vermont institution of higher learning or qualifying for resident status for tuition purposes. Such presumption is rebuttable.
2) The student must demonstrate such attachment to the community as would be typical of a permanent resident of his/her age and education. The College's chief admissions officer shall consider in the determination of residency for tuition purposes, among other factors: voter registration, property ownership, payment of income and property taxes, automobile registration and driver's license.
3) Receipt of significant financial support from the student's family will create a rebuttable presumption that the student's residence is with his/her family. A student who has not reached the age of eighteen shall be presumed to hold the residence of his or her parents or legal guardian. The presumption shall be rebuttable.

4) A student who moves into Vermont within one year of enrollment shall be presumed to have moved to Vermont for the purposes of attending a Vermont institution of higher learning and qualifying for resident status for tuition purposes. This presumption shall be rebuttable.
5) A student who is eligible for tuition purposes to enroll as a resident student in another state shall not be enrolled as a "Vermont Resident." The inability to enroll as a resident student in another state does not by itself establish residency in Vermont for tuition purposes. Additionally, a domicile or residency classification assigned by a public or private authority neither qualifies nor disqualifies a student for in-state residency status at a member College. However, such classification may be taken into consideration by the chief admissions officer.
6) Notwithstanding paragraphs 1-5, a student shall be considered a resident for in-state tuition purposes at the start of the next semester or academic period where:
    a. The student, in accordance with 16 V.S.A. § 2185, is a member of the Armed Forces of the United States on active duty who is transferred to Vermont for duty other than for the purpose of education; or
    b. The student is eligible for in-state tuition and fees, as of August 1, 2021, because the student:
        i. is a veteran who lives in Vermont (regardless of the student's formal state of residence) and enrolls in a member College;
        ii. is anyone using a veteran's transferred benefits, who lives in Vermont (regardless of the student's formal state of residence) and enrolls in a member College;
        iii. is anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship, who lives in Vermont (regardless of the student's formal state of residence);
        iv. is anyone using a veteran's transferred benefits, who lives in Vermont (regardless of the student's formal state of residence) while the transferor is a member of the uniformed services serving on active duty; or
        v. as of March 1, 2019, is anyone using educational assistance under 38 U.S.C. §§ 3100-3122 (Chapter 31, Training and Rehabilitation for Veterans with Service-Connected Disabilities).
7) Notwithstanding paragraphs 1-5, a student shall be considered a resident for in-state tuition purposes as of DATE where, in accordance with 16 V.S.A. § 2185 the student:
    a. qualifies as a refugee pursuant to 8 U.S.C. 1101(a)(42); or
    b. is granted parole to enter the United States pursuant to 8 U.S.C. 1182(d)(5); c. is issued a special immigrant visa pursuant to the Afghan Allies Protection Act of 2009, as amended.

8) Notwithstanding paragraphs 1-5, a student shall be considered a resident for in-state tuition purposes if:
    a. After January 1, 2015, the student has earned:
        i. a high school diploma; or
        ii. a secondary school equivalency certificate based on successful completion of General Education Development tests;

    and

    b. At the time the student earned a diploma or certificate under subsection (a), the primary legal residence of the student, or the student's parent(s) or guardian(s) if the student was under age 18, was in Vermont; and
    c. The student is and remains domiciled in Vermont at the time the student enrolls at the Vermont State Colleges. Domicile shall mean a person's true, fixed and permanent home, to which he/she intends to return when absent. Domicile shall not be dependent upon a person's marital status.

    Eligibility for in-state tuition under this paragraph shall not necessarily constitute in-state residency for any other purpose within or outside the VSC system.

9) A student enrolling at the Vermont State Colleges shall be classified by the College's chief admissions officer as a resident or non-resident for tuition purposes. The decision by the officer shall be based upon information furnished by the student and other relevant information. The officer is authorized to require such written documents, affidavits, verifications or other evidence as he/she deems necessary.
10) The burden of proof shall, in all cases, rest upon the student claiming to be a Vermont resident for tuition purposes by clear and convincing evidence.
11) Changes in residency status for tuition purposes shall become effective for the semester following the date of reclassification.
12) A student with resident status for tuition purposes will lose that status if he/she, at any time, fails to meet the above requirements.
13) The decision of the College's chief admissions officer on the classification of a student as a resident or non-resident for tuition purposes may be appealed in writing to the College's Dean of Administration. Further appeal of a classification of a student's residency for tuition purposes may be made in writing to the Office of the Chancellor. The decision of the Office of the Chancellor shall be final.
14) An applicant for admission or enrollment may obtain a determination of residency status for tuition purposes in accordance with the above criteria and procedures in advance of admission or enrollment.

Signed by:

Sophie Zdatny, Chancellor

Date	Version	Revision	Approved By
08/07/1981	1.0	Adopted	VSCS Board of Trustees
10/20/2006	2.0	Update	VSCS Board of Trustees
10/25/2007	3.0	Update	VSCS Board of Trustees
02/19/2015	4.0	Update	VSCS Board of Trustees
06/11/2015	5.0	Update	VSCS Board of Trustees
03/25/2017	6.0	Update	VSCS Board of Trustees
03/24/2018	7.0	Update	VSCS Board of Trustees
02/25/2019	8.0	Update	VSCS Board of Trustees
08/04/2021	9.0	Update	VSCS Board of Trustees