UH Hilo

Degree: Bachelor of Science
Division: CAFNRM
Title: Aeronautical Science BS
Description: This proposed UHH Flight School Program will offer students the opportunity to acquire a Baccalaureate of Science in Aeronautical Science. The degree is split into four separate tracks, each concentrating on a different aviation focus: (1) The Fixed Wing Professional Pilot track allows students to acquire their Commercial Pilot's license for fixed wing aircraft and move on to employment. (2) The Fixed Wing Flight Education Pilot track allows students to acquire their Certified Flight Instructor for Instruments (CFII) and will prepare them for a job as a fixed wing flight instructor. (3) The Helicopter Flight Operations track allows students to acquire their CFII for helicopters and will prepare them for a job as a helicopter flight instructor. (4) The Remotely Piloted Aircraft Systems (RPAS) track allows students to acquire their Private Pilot for Instruments rating and will prepare them for a job in the unmanned aircraft industry.

Effective Date: Fall 2016

1. Is this a proposal for

   (a) modification of an existing undergraduate or graduate program/degree/major/minor/certificate?

   (b) a new certificate or minor or track within an existing baccalaureate or graduate program?

   (c) a proposal for an individual liberal studies major equivalent?

   (d) a request for Approval To Plan a new graduate or undergraduate degree program (ATP)?

   (e) a new graduate degree program or a new baccalaureate degree program?

If (a) or (b), please answer all questions in this proposal form.

If (c), provide student’s name, student ID, faculty advisor's name, and title of proposed program in the space below; then answer question 2 only, and attach the proposal and advisor's letter.

If (d), answer only questions 1 and 9 and attach your request for Approval to Plan.

If (e), answer all questions and attach both the signed, approved ATP for your proposed program and the program proposal by clicking the "Attachment" tab at the bottom of the proposal form.

The BOR E5.201 template for new programs and budget template are posted on the VCAA Curriculum Resources page:
http://hilo.hawaii.edu/uhh/vcaa/CurriculumResources.php

Consult CurrCtrl campus administrator Jon Awaya awayaj@hawaii.edu for assistance.

(c) a proposal for a new Baccalaureate of Science in Aeronautical Science
2. Please answer the following, for both new programs and modifications, numbering your answers.

1. Specify (a) the number of credits required for the program and (b) the number of elective credits.

2. Specify the minimum required GPA for courses taken for the major, minor or certificate. Unless otherwise stipulated here, the minimum required GPA will be set as 2.0 (C) in Banner.

3. Specify the minimum acceptable grade for each course taken for the major, minor, or certificate. Unless otherwise stipulated here, the minimum acceptable grade will be set as 1.0 (D) in Banner.


3. How does the NEW program or program modification benefit students, the curriculum, and the institution, and how does this change relate to or impact other programs at the university?

This proposed UHH Flight School Program will offer students the opportunity to acquire a Baccalaureate of Science in Aeronautical Science. The degree is split into four separate tracks, each concentrating on a different aviation focus: (1) The Fixed Wing Professional Pilot track allows students to acquire their Commercial Pilot's license for fixed wing aircraft and move on to employment. (2) The Fixed Wing Flight Education Pilot track allows students to acquire their Certified Flight Instructor for Instruments (CFII) and will prepare them for a job as a fixed wing flight instructor. (3) The Helicopter Flight Operations track allows students to acquire their CFII for helicopters and will prepare them for a job as a helicopter flight instructor. (4) The Remotely Piloted Aircraft Systems (RPAS) track allows students to acquire their Private Pilot for Instruments rating and will prepare them for a job in the unmanned aircraft industry.

51 new courses have been created but the new program uses many existing UHH courses: MATH 104F, MATH 104G, ENG 100, CS 150, PHYS 106, PHYS 170L, CHEM 114, CHEM 114L, AG 200, CS 151, GEOG 102, GEOG 201, ECON 130 (or 131), GEOG 470, GEOG 480. In addition, to fulfill GE requirements, students will take 2 Humanities, 1 World Cultures, 1 Social Sciences, 1 Language Arts, 1 Global and Community Citizenship, and 1 Hawaiian Pan Pacific requirement.

4. Describe any additional library resources, facilities, equipment or other resources required for the new or modified program and provide an estimate of such costs.

Type in "None" if appropriate.

2. Library resources:

- The program draws in partly on existing courses, but new books, databases and case files will need to be purchased by the library. Additional support on expanding collections at the library would require approximately $10,000/year and this number will increase to $15,000/year when the program is in full implementation.

3. Physical resources:

- Equipment and Supplies: The costs are a function of the chosen flight services provider and are estimated at $50,000.
$50K was the number provided in consultation with a simulations company for development of appropriate flight simulation equipment. For example: computers with the power necessary to run flight simulations can cost around $2000 each.

- Office space for eight new faculty members and one administrative assistant will need to be provided on campus.
- Additional classroom space will need to be provided for up to 120 students once the program has reached steady-state in FY17/18.
- A flight simulation lab will be required on campus with 25 computer stations at an approximate cost of $50,000 for FY2015/16.
- Classrooms exist on campus to house the additional courses.
- Aircraft and hangar space and at the flight line will be provided in consultation with the flight provider.

4. Other resources required:

- Starting in August 2015 the Aeronautical Science program will require a full time administrative staff responsible for:
  - liaison with the FAA,
  - consultation with airport environment managers,
  - supporting public relations, and student support.

At Hilo International Airport: A building to house the contracted flight training provider and associated operations. A hangar for the storage of, and maintenance on, aircraft used by the contracted flight training provider. The Hawai‘i state legislature has provided UH Hilo with $500,000 in funds for airport facilities. These funds will be used in the leasing and improvement of airport facilities.

5. Describe any additional faculty required for the new or modified program and provide an estimate of such costs.

1. Faculty:

- It is estimated that at full implementation the program will require 51 new aviation related courses that will be taught by eight new faculty members. Additionally, the contracted flight provider will provide the flight instructors required for flight instruction.
- Aeronautical Science faculty is budgeted at $75,000 on average per year per person plus fringe benefits of 45%. Pay increases are planned to be 4% per year.
- Additional support of lecturers for prerequisite and GE classes is required. Lecturers are budgeted at $5,000 per course.
- New tuition income from flight program students will go into the general fund allowing new flight program faculty to be paid from that fund.

6. If this is a new program or a new certificate or a minor or a new track within an existing program, copy and paste from a Word document into the window below a catalog-ready list of the graduation (or minor or certificate) requirements, including required courses and acceptable electives.

If this is a program modification, copy and paste the current requirements into the window below; strike out portions to be deleted, and underline any new or additional portions.

Reminder: This proposal is for one type of program. Include requirements for only one type of program: the BA, or the minor, or the certificate, as indicated by the type of program you selected when you created this proposal.

Bachelor of Science in Aeronautical Science

UHH Aeronautical Science Admission Policy

All pilots must maintain an FAA specified level of medical readiness to exercise privileges granted by a pilot certificate. Prior to enrolling in the UHH Aeronautical Science Baccalaureate...
program, students must meet eligibility requirements. Students will visit an Aviation Medical Examiner (AME) licensed to perform a Medical Certification Exam. This exam ensures that a student possesses the medical capability to exercise the privileges granted by a pilot certificate. Check the Civil Aerospace Medical Institute website for an examiner near you. http://ame.cami.jccbi.gov/

Students must have:

- Current First-Class medical certificate, (or)
- Current Second-Class medical certificate

At the time of examination by the AME students will request a Student Pilot Certificate. This document is shown on the reverse-side of the medical certificate. In accordance with the Aviation and Transportation Security ACT (ATSA) students must show proof of U.S. citizenship. The ATSA will provide clearance for international and permanent resident students. In addition to a government-issued photo identification card, students must have one of the below:

- An original U.S. naturalization certificate with raised seal, Form N-550 or Form N-570
- An original certification of birth abroad, Form FS-545, or Form DS-1350
- An original certificate of U.S. citizenship, Form N-560, or Form N-561
- An original birth certificate with raised seal documenting birth in the United States or one of its territories
- A current U.S. passport (unexpired)

**RPAS Track**

At this time enrolling in the RPAS (Remotely Piloted Aircraft Systems) track, and any courses specific to it, is limited to U.S. citizens only. International Traffic in Arms Regulations (ITAR) enacted by the United States State Department prohibits participation in the RPAS track for non-U.S. citizens. Until ITAR is amended students must be U.S citizens to enroll in RPAS specific courses. https://www.pmddtc.state.gov/regulations_laws/itar.html

**Group 1. General Education Basic, Area, and Integrative Requirements**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment longer than one semester. Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements. The new GE basic, core, and integrative requirements and lists of certified courses are posted athilo.hawaii.edu/academics/gened/.

**Group 2. Major Core Requirements for Aeronautical Science major (all 4 tracks):**

- AVIT 140 Tropical Survival Skills (1)
- AVIT 201 Meteorology (3)
- AVIT 303 Aviation Weather (3)
- AVIT 305 Professional Aviation (3)
- AVIT 309 Aerodynamics and Performance (3)
- AVIT 324 Aircraft Systems and Components (3)
- AVIT 311 Aircraft Engines (2)
- AVIT 408 Flight Safety (3)
Semester hours for Core requirements: 21 credit hours

Required Related Courses for the Aeronautical Science major (all 4 tracks):

- MATH 104F PreCal I: Functions (3) *
- MATH 104G PreCal II: Trig & Geom (3) *
- ENG 100 Expository Writing (3)
- PHYS 106 College Physics I (3)
- PHYS 170L General Physics I Lab (1)
- CS 150 Intro to Computer Science I (3)
- CHEM 114 Intro Chemistry (3)
- CHEM 114L Intro Chemistry Lab (1)
- ECON 130 Intro to Microeconomics OR ECON 131 Macroeconomics (3)
- GEOG 102 World Regional Geography (3)
- AG 200 Agro-Environmental Science Com (3) OR an approved WI course

Semester hours for Required Related Courses: 29 credits

Group 3. Choose one of the following four tracks:

Tracks 1 and 2: Fixed Wing Specialization Requirements:
- AVIT 102 Private Pilot Operations I (3)
- AVIT 102L Private Pilot Flight Simulation (1)
- AVIT 102F Private Pilot Flight I (4)
- AVIT 103 Private Pilot Operations II (3)
- AVIT 103F Private Pilot Flight II (4)
- AVIT 222 Instrument Pilot Operations (4)
- AVIT 222L Instrument Pilot Simulation (1)
- AVIT 222F Instrument Pilot Flight (4)
- AVIT 323 Commercial Pilot Operations I (2)
- AVIT 323F Commercial Pilot Flight I (4)
- AVIT 326 Commercial Pilot Operations II (2)
- AVIT 326F Commercial Pilot Flight II (4)
- AVIT 327F Commercial Pilot Multi-Engine (2)
- AVIT 350 Domestic and International Nav (3)
- AVIT 357 Flight Physiology (2)
- AVIT 387 Crew Resource Management (3)

Subtotal: 46 credit hours

Fixed-Wing Specialization: Professional Pilot additional requirement:
- AVIT 420 Airline Operations (3)

or

Fixed-Wing Specialization: Education Focus additional requirements:
- AVIT 422 Certified Flight Instructor (3)
- AVIT 422F Flight Instructor Rating (2)
- AVIT 424 CFI – Instruments (2)
- AVIT 424F CFI – Instruments Rating (2)

Subtotal additional, track 1: 3 ; track 2: 9

Total Minimum Semester Hours Required for the Fixed Wing Specialization:
- Professional Pilot track: 123
- Education Focus track: 126

Track 3: Remotely Piloted Aircraft Systems:
- AVIT 102 Private Pilot Operations I (3)
AVIT 102L Private Pilot Flight I (4)  
AVIT 102F Private Pilot Flight I (4)  
AVIT 103 Private Pilot Operations II (3)  
AVIT 103F Private Pilot Flight II (4)  
CS 151 Intro to Computer Science II (Recommended) (3)  
AVIT 152 Introduction to RPAS (3)  
GEOG 201 Interpretation of Geographic Data (3)  
AVIT 222 Instrument Pilot Operations (4)  
AVIT 222L Instrument Pilot Simulation (1)  
AVIT 222F Instrument Pilot Flight (4)  
AVIT 252 RPAS Robotics (3)  
AVIT 352 RPAS Mission Planning and Sim (3)  
GEOG 470 Remote Sensing/Air Photo (3)  
GEOG 480 Geog Info Sys & Visualization (3)  
AVIT 452 RPAS Flight (4)  

Subtotal: 49 credit hours

Total Minimum Semester Hours Required for the Remotely Piloted Aircraft Systems Specialization: 123 credits

Track 4: Helicopter Specific:  
AVIT 131 Private Pilot Heli Ground I (3)  
AVIT 131F Private Pilot Heli Flight I (4)  
AVIT 131L Private Pilot Heli Simulation (1)  
AVIT 132 Private Pilot Heli Ground II (3)  
AVIT 132F Private Pilot Heli Flight II (3)  
AVIT 231 Instrument Pilot Heli Ground (4)  
AVIT 231F Instrument Pilot Heli Flight (4)  
AVIT 231L Instrument Pilot Heli Sim (1)  
AVIT 301 Helicopter Operations (3)  
AVIT 302 Helicopter Preventive Maint (1)  
AVIT 331 Commercial Pilot Heli Ground I (2)  
AVIT 331F Commercial Pilot Heli Flight I (3)  
AVIT 332 Commercial Pilot HeliGround II (2)  
AVIT 332F Commercial Pilot HeliFlight II (3)  
AVIT 431 CFI - Helicopter (3)  
AVIT 431F CFI - Helicopter Rating (3)  
AVIT 432 CFI Instr - Helicopter Ground (3)  
AVIT 432F CFI Instr - Helicopter Flight (3)  

Subtotal: 49 credit hours

Total Minimum Semester Hours for the Helicopter Specific track: 123 credits

Total Minimum Semester Hours for the B.S. in Aeronautical Science: 123-126 credits

*If a student tests out of MATH 104F and 104G, they can take MATH 115 or higher.

7. List any new courses or modified courses being proposed with this program proposal, providing alpha, number, and title of each one. The proposals for these new/modified courses MUST be submitted at the same time as this program proposal, to ensure proper review by approvers. Specify "Proposal submitted" next to each course in your list.
   
   AVIT 102 - Private Pilot Operations I (3) "Proposal submitted"  
   AVIT 102F - Private Pilot Flight I (4) "Proposal submitted"  
   AVIT 102L - Private Pilot Flight Simulation (1) "Proposal submitted"  
   AVIT 103 - Private Pilot Operations II (3) "Proposal submitted"  
   AVIT 103F - Private Pilot Flight II (4) "Proposal submitted"
AVIT 131 - Private Pilot Heli Ground I (3) "Proposal submitted"
AVIT 131F - Private Pilot Heli Flight I (4) "Proposal submitted"
AVIT 131L - Private Pilot Heli Simulation (1) "Proposal submitted"
AVIT 132 - Private Pilot Heli Ground II (3) "Proposal submitted"
AVIT 132F - Private Pilot Heli Flight II (3) "Proposal submitted"
AVIT 140 - Tropical Survival Skills (1) "Proposal submitted"
AVIT 152 - Introduction to RPAS (3) "Proposal submitted"
AVIT 201 – Meteorology (3) "Proposal submitted"
AVIT 222 - Instrument Pilot Operations (4) "Proposal submitted"
AVIT 222F - Instrument Pilot Flight (4) "Proposal submitted"
AVIT 222L - Instrument Pilot Simulation (1) "Proposal submitted"
AVIT 231 - Instrument Pilot Heli Ground (4) "Proposal submitted"
AVIT 231F - Instrument Pilot Heli Flight (4) "Proposal submitted"
AVIT 231L - Instrument Pilot Heli Sim (1) "Proposal submitted"
AVIT 252 - RPAS Robotics (3) "Proposal submitted"
AVIT 301 - Helicopter Operations (3) "Proposal submitted"
AVIT 302 - Helicopter Preventive Maint (1) "Proposal submitted"
AVIT 303 - Aviation Weather (3) "Proposal submitted"
AVIT 305 - Professional Aviation (3) "Proposal submitted"
AVIT 309 - Aerodynamics and Performance (3) "Proposal submitted"
AVIT 311 - Aircraft Engines (2) "Proposal submitted"
AVIT 323 - Commercial Pilot Operations I (2) "Proposal submitted"
AVIT 323F - Commercial Pilot Flight I (4) "Proposal submitted"
AVIT 324 - Aircraft Systems & Components (3) "Proposal submitted"
AVIT 326 - Commercial Pilot Operations II (2) "Proposal submitted"
AVIT 326F - Commercial Pilot Flight II (4) "Proposal submitted"
AVIT 327F - Commercial Pilot Multi-Engine (2) "Proposal submitted"
AVIT 331 - Commercial Pilot Heli Ground I (2) "Proposal submitted"
AVIT 331F - Commercial Pilot Heli Flight I (3) "Proposal submitted"
AVIT 332 - Commercial Pilot HeliGround II (2) "Proposal submitted"
AVIT 332F - Commercial Pilot HeliFlight II (3) "Proposal submitted"
AVIT 350 - Domestic and International Nav (3) "Proposal submitted"
AVIT 352 - RPAS Mission and Planning Sim (3) "Proposal submitted"
AVIT 357 - Flight Physiology (2) "Proposal submitted"
AVIT 387 - Crew Resource Management (3) "Proposal submitted"
AVIT 408 - Flight Safety (3) "Proposal submitted"
AVIT 420 - Airline Operations (3) "Proposal submitted"
AVIT 422 - Certified Flight Instructor (3) "Proposal submitted"
AVIT 422F - Flight Instructor Rating (2) "Proposal submitted"
AVIT 424 - CFI – Instruments (2) "Proposal submitted"
AVIT 424F - CFI - Instruments Rating (2) "Proposal submitted"
AVIT 431 - CFI – Helicopter (3) "Proposal submitted"
AVIT 431F - CFI - Helicopter Rating (3) "Proposal submitted"
AVIT 432 – CFI Instr - Helicopter Ground (3) "Proposal submitted"
AVIT 432F – CFI Instr - Helicopter Flight (3) "Proposal submitted"
AVIT 452 - RPAS Flight (4) "Proposal submitted"

8. Does this new or modified program involve courses offered by other departments? If not, type in "no."
   If yes, please attach an email (in PDF) or other document from the chair(s) of the other department(s) approving the inclusion of those courses by alpha, number, and title.

To attach, click on the ATTACHMENT button at the bottom of this page, next to the SUBMIT button.

Yes, letters have been requested from MATH, PHYSICS, ECONOMICS, GEOGRAPHY, COMPUTER SCIENCE, CHEMISTRY and the College of Agricultural (for AG200).
9. Please record the department vote approving the proposed change(s): Approve, Not Approve, Abstain; give the date of the vote.

The Faculty Senate of the College of Agriculture, Forestry and Natural Resource Management voted to approve the new Aeronautical Science Program on October 31, 2014 at 9:00 am.

Votes polled:

For: 8
Against: 1
Abstain: 3

10. Provide other attachments that you believe will be useful and informative to reviewers and approvers.

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