

Program Assessment Plan
Bachelor of Science
in
Airway Science - Aircraft Systems Management
(Professional Pilot) Program



School of Aeronautics
Inter American University of Puerto Rico
Bayamón Campus

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Approved by the Faculty: Fall 2020
Revised: Summer 2021

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1 Mission Statement

1.1 Inter American University of Puerto Rico Mission Statement

The mission of the Inter American University of Puerto Rico system is published on the General Catalog (can be download at <https://documentos.inter.edu/#374-catalogos-subgraduados>). The mission statement is as follows:

“Inter American University of Puerto Rico has the mission to offer post-secondary and higher education in the arts and sciences, by means of teaching, research and community service, within an ecumenical Christian context. In addition, it offers educational programs at the pre-school, elementary and secondary levels.

The University, also, contributes to society, by educating people that come from different socioeconomic sectors, within and outside Puerto Rico. It incorporates in its offerings and services, innovating study modalities supported by informatics and telecommunications. The University aims to prepare its graduates to be responsible and cultured citizens, with democratic and Christian values, who are conscious of their social and environmental obligation, and are able to perform competently and exercise leadership in an occupational or professional context.

The University aims to maximize the educational potential of students in an environment without discrimination, in compliance with the law, the accreditation regulations and standards, and in harmony with the search for academic excellence. It, also, aims to make the best use of this environment to develop critical thinking, scientific knowledge, sensitivity towards the arts, ethical responsibility and the skills of social coexistence.”

1.2 Inter American University Bayamon Campus Mission Statement

The mission of the Inter American University Bayamon Campus is published on the web site <https://bayamon.inter.edu/conocenos/mision-y-vision/>. The mission statement is as follows:

“Form competent professionals through quality, dynamic, and relevant academic education in science, engineering, aeronautics, technology, business administration, and the arts. This education is framed in ethical, Christian and ecumenical values.

Our academic offer is aimed at attending the pre-university, undergraduate and graduate levels, through courses and face-to-face and distance programs. In this way, the Bayamón Campus contributes to society by educating people who come from the various socioeconomic sectors, inside and outside of Puerto Rico.

We are characterized by an education that fosters social and environmental responsibility, critical thinking, creativity, innovation and entrepreneurship.

Our academic community is committed to academic excellence, service, and the advancement of knowledge through research.”

1.3 School of Aeronautics Mission Statement

The mission of the School of Aeronautics is published and displayed in the bulletin board of the department and on the web http://aeroweb.azurewebsites.net/?page_id=431. The mission statement is as follows:

“To provide educational and practical experiences, empowering our students to contribute positively to the global aviation community.”

1.4 Aircraft Systems Management (Professional Pilot) Program Mission Statement

The mission of the Aircraft Systems Management (Professional Pilot) is published and displayed in the bulletin board of the department and on the web site http://aeroweb.azurewebsites.net/?page_id=111. The mission statement is as follows:

“To develop professional pilots with the necessary skills, knowledge, and attitudes to excel in the aviation industry.”

2. Educational Goals (EG)

The educational goals of the Aircraft Systems Management (Professional Pilot) Program represent and describe the expected accomplishments of the graduates within three to ten years after graduation. The educational goals of the Aircraft Systems Management (Professional Pilot) Program are published and displayed in the bulletin board of the department and on the web site http://aeronautics.azurewebsites.net/?page_id=111. The Educational Goals are as follows:

1. **Professionalism:** Exercise the highest standards of personal and professional integrity. Demonstrate an understanding of the current and ethical issues related to the analysis and execution aspects inherent to the Professional Pilot.
2. **Team Skills:** Develop leadership skills, demonstrate proficiency in all forms of communication and perform well in a multi-disciplinary and multi-cultural team environment.
3. **Life-long Learning:** Recognize the need for continuing their education through graduate studies, continuous education opportunities, on the job training and/or self-education in the National and International Aviation environment.
4. **Flight Skills:** demonstrate the highest levels of piloting performance and airplane systems management skills in the flight instruction, air taxi, commuter, corporate, regional or air carrier domains of aviation.

2.1. Consistency of the Educational Goals with the Mission of the Institution

The Aircraft Systems Management (Professional Pilot) Educational Goals (EGs) offer all the necessary tools for the program to prepare students with the capabilities and profile that would fulfill the expectations of the Inter American University of Puerto Rico – Bayamon Campus mission. The EGs provide a means to prepare our students to be capable of contributing to the social and economic development of Puerto Rico and the international community by providing professional and ethical solutions problems and developing and transferring technology.

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The table 1 and 2 shows a relationship among the main educational objectives and the goals of the mission of the institution and Bayamon Campus, respectively. Relationships are marked with an “→” in the matching entry.

Table 1 EG relationship with Mission of Inter American University of Puerto Rico

INSTITUTIONAL MISSION'S GOALS	EGs			
	1	2	3	4
To develop the talents of men and women regardless of race, religion, gender, age or nationality	→	→	→	→
To promote and offer a wide variety of academic programs in liberal arts, science and technology at undergraduate and graduate level	→			→
To develop students who assume responsibility for their learning, who excel in their social commitment	→	→	→	→
To have students that appreciate the culture, ecological conscience, critical thought, management of multi-modal communication skills	→	→	→	→
To have students skillful in use of technology, and constancy in seeking continuous personal and professional improvement	→	→	→	→

Table 2 EG relationship with Mission of Inter American University of Puerto Rico -Bayamon Campus

BAYAMON CAMPUS MISSION'S GOALS	EGs			
	1	2	3	4
To develop competent professionals through quality, dynamic, and relevant academic education in science, engineering, aeronautics, technology, business administration, and the arts. This education is framed in ethical, Christian and ecumenical values.	→	→	→	→
We are characterized by an education that fosters social and environmental responsibility, critical thinking, creativity, innovation and entrepreneurship.	→			→
Our academic community is committed to academic excellence, service, and the advancement of knowledge through research.	→	→	→	→

2.2 Program Constituencies

The primary constituents of the Aircraft Systems Management (Professional Pilot) Program include:

- 1. Undergraduate Aircraft Systems Management Students:** The undergraduate Aircraft Systems Management students are represented by students enrolled in the program courses and/or by members of student organizations. This constituency provides direct

feedback about how well is the internal curricular structure helping in achieving their goals and ambitions.

2. **Aircraft Systems Management Alumni:** Students within the first three years after graduation. They are better prepared to judge if the program has adequately prepared them for their employment or job.
3. **School of Aeronautics Faculty:** The core of our educational program is our faculty. The structure and activities of our program, including courses, projects, student activities, advising, etc., depend on the competence, quantity and satisfaction of our faculty. The faculty is commonly involved by the establishment of committees and by department meetings. They guide students in the learning process and are responsible for the program educational outcomes relative to program educational objectives.
4. **School of Aeronautics Advisory Board:** The School of Aeronautics Pilots Advisory Board (SOAAB) is composed by representatives from the industry from local companies working as Air Carrier Certificate under Part 121 and 135 of the Code of Federal Regulations (CFR), Title 14 Aeronautics & Space. The SOAAB is composed of 4 to 5 members and meets twice a year. Guidance for our Aircraft Systems Management (Professional Pilot) Program represents a major Board activity. To address the specific needs of the students, the SOAAB discuss with the Dean of the School of Aeronautics the needs of the industry along with the department EGs and mission. The SOAAB is a truly committed group that is seriously interested and concerned about the well-being of the program and high standards and quality of our graduates.

2.3 Evaluation of Educational Goals

The process used to evaluate the level of achievement of the Aircraft Systems Management (Professional Pilot) Educational Goals employ a variety of techniques.

Alumni resume: A list of alumni having graduated from three to ten years prior to the accreditation audit is compiled. A resume is requested from the alumni either by mail or on-line. The resume is checked with a carefully designed rubric to verify the student's achievement of the EGs and how well their academic experience at the Inter American University of Puerto Rico, Bayamon campus prepared them to succeed in their chosen field of Aircraft Systems Management (Professional Pilot).

Employer Survey: A survey is mailed directly to the alumni employer. Employers are asked a series of questions addressing the preparation of our graduates to succeed in the field of Aircraft Systems Management (Professional Pilot)

School of Aeronautics Advisory Board is asked to use their experience and that of others within their organization, to rate Aircraft Systems Management (Professional Pilot) graduates, co-ops, and interns against the Aircraft Systems Management (Professional Pilot) Program Objectives. The results are discussed at a meeting for understanding and to develop any required action by the Board and/or the faculty.

3. Student Learning Outcomes (SLO)

Student Learning Outcomes are defined as “statements that describe what students are expected to know and be able to do by the time of graduation that enable them to meet the

objectives”. Our program SLOs identify what our graduates are expected to know or able to do upon graduation.

3.1 General Student Learning Outcomes

To satisfy Aircraft Systems Management (Professional Pilot) Performance Criteria, our graduates MUST demonstrate that they are able to:

- a) Apply mathematics, science, and applied sciences to aviation-related disciplines
- b) Analyze and interpret data
- c) Work effectively on multi-disciplinary and diverse teams
- d) Make professional and ethical decisions
- e) Communicate effectively, using both written and oral communication skills
- f) Recognize the need for, and engage in life-long learning
- g) Assess contemporary issues
- h) Use the techniques, skills, and modern technology necessary for professional practice
- i) Assess the national and international aviation environment
- j) Apply pertinent knowledge in identifying and solving problems
- k) Apply knowledge of business sustainability to aviation issues

3.2 Definition of Performance Criteria (PCs)

The School of Aeronautics faculty decided to establish Performance Criteria for each outcome to improve the effectiveness of the program and course assessment. These definitions will help to pinpoint which part of the outcome needs improvement. This data will help in closing the loop activities to improve any deficiency. The Performance Criteria for each outcome are defined as follows:

Flight students must demonstrate that they are able to:

- A. Apply mathematics, science, and applied sciences to aviation-related disciplines.
 1. Students must be able to identify, execute, solve, and evaluate concepts and equations related to the solution of problems within aviation physics.
 2. Students will describe the principles of aircraft design, performance and operating characteristics; and the regulations related to the maintenance of aircraft and associated systems.
 3. Students must be able to predict the airplane’s performance capability by using math, concepts and equations to solve for weight and balance problems.
- B. Analyze and interpret data
 1. Students will discuss the impact of meteorology and environmental issues on aviation operations by being able to analyze and correctly interpret weather data from Graphic Weather Sources and/or Printed Weather Reports and Forecasts.

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2. Students must be able to examine and properly interpret the data contained in instrument approach charts and translate these instructions into actions and procedures.
- C. Work effectively on multi-disciplinary and diverse teams
1. Students will perform in collaborative learning by analyzing accident reports. Later they will deliver a group oral presentation on the complete nature of the accident.
 2. Students must be able to perform in collaborative learning by analyzing accident reports. Groups will use these reports and engage in mutual assistantship, exchange of ideas, discussion, encouragement, and joint support to deliver a group presentation on the complete nature of the accident.
- D. Make professional and ethical decisions
1. Students must discriminate between ethical versus unethical practices and between professional and unprofessional behavior within the aviation industry.
 2. Students must be able to evaluate a professional and ethical issue related to the practice of flight instruction and/or professional pilot.
- E. Communicate effectively, using both written and oral communication skills
1. Students must be able to demonstrate ICAO oral proficiency skills, to at least Level 4 (operational level), in pronunciation, structure, vocabulary, fluency, comprehension, and interactions.
 2. Students must be able to write an original essay on a current subject in Aviation Human Factors where he/she evaluates aviation safety and the impact of human factors on safety.
 3. Students must be able to create and present a preflight lesson on a selected pilot maneuver and/or aeronautical topic, from an instructional standpoint as it would be taught to a student.
- F. Engage in and recognize the need for life-long learning
1. Students must be able to demonstrate an awareness of the professional development required for each aviation specialty.
 2. Students must be able to demonstrate the need for personal and professional enhancement by being able to write an Integrated Paper pointing out resources for professional pilot development (including those for independent learning) and elucidating their importance.
- G. Assess contemporary issues
1. Students must be able to evaluate agreements and/or laws affecting the aviation industry today.
 2. Students must be able to conduct research and write an original essay on the contemporary issues surrounding a human factors topic. The purpose of this essay is to allow students to analyze the current and future state of issues regarding aviation human factors.
 3. Students must be able to research a topic affecting the flight instruction and/or professional pilot industry today.
- H. Use the techniques, skills, and modern technology necessary for professional practice

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1. Students must be able to execute a fully planned IFR cross-country from departure to destination demonstrating use of navigational technology, cockpit resources, and technical flying skills for departure, enroute, and arrival procedures.
 2. Commercial students will demonstrate a broad understanding of the role and skills of the commercial pilot.
 3. Flight instructor students will demonstrate a broad understanding of the role and skills of the Flight instructor pilot.
- I. Assess the national and international aviation environment.
1. Students must be able to discriminate between acts and regulations affecting the aviation industry domestically and internationally.
 2. Students must explain the integration of airports, airspace, and air traffic control in managing the National Airspace System
 3. Students must be able to explain the international accident investigation process including the role of the International Civil Aviation Organization and other regional and national authorities.
- J. Apply pertinent knowledge in identifying and solving problems
1. Students must be able to identify, execute, solve, and evaluate concepts and equations related to the solution of problems within aviation physics.
 2. Students must be able to identify the hazards and risks associated with a safety scenario and propose methods to reduce the levels of risk to as low as reasonably practical (ALARP).
 3. Students must be able to assess and correctly perform so as to identify and solve simulated in-flight emergencies.
- K. Apply knowledge of business sustainability to aviation issues
1. Students must be able to evaluate different methods available to increase the airport capacity and reduce possible delays associated with the operations.
 2. Students must be able to conduct research on airline strategies to offer innovative solutions towards sustainable air carrier operations in terms of development, economy, and/or social standpoints.

3.3 Relationship of Student Learning Outcomes to Educational Goals.

The table 4 exhibits the relationship of the Student Learning Outcomes and how they support achievement of the Educational Goals (EGs).

Table 4 Relationship of Outcomes to Educational Goals

Student Learning Outcomes		EG 1	EG 2	EG 3	EG 4
a	Apply mathematics, science, and applied sciences to aviation-related disciplines	→			→
b	Analyze and interpret data	→			→

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c	Work effectively on multi-disciplinary and diverse teams		→	→	
d	Make professional and ethical decisions	→	→		
e	Communicate effectively, using both written and oral communication skills	→	→		→
f	Recognize the need for, and engage in life-long learning			→	
g	Assess contemporary issues	→	→		
h	Use the techniques, skills, and modern technology necessary for professional practice	→	→		→
i	Assess the national and international aviation environment			→	→
j	Apply pertinent knowledge in identifying and solving problems	→	→		→
k	Apply knowledge of business sustainability to aviation issues	→	→		→

3.4 Relationship of Courses in the Curriculum to the Student Learning Outcomes

The program has developed and published the tables 5, 6 and 7 to show the relationship between courses and the Student Learning Outcomes (SLOs).

Table 5 Relationship of concentration courses to the Student Learning Outcomes

Course Code	Courses	Student Learning Outcomes										
		a	b	C	d	e	f	g	h	i	j	k
AWSC 2115	Private Pilot Theory	→	→						→	→		
AWSC 2116	Basic Flight Laboratory	→							→			
AWSC 3155	Instrument Pilot	→	→						→	→		
AWSC 3160	Commercial Pilot	→							→	→	→	
AWSC 3411	Principles of Air Traffic Control	→	→	→		→			→	→		
AWSC 4204	Airline Operations							→			→	→
AWSC 4305	Meteorology in Aviation	→	→									
AWSC 4320	Advanced Aircraft Systems	→							→			
AWSC 4340	Applied Aerodynamics	→										
AWSC 4364	Certified Flight Instructor: Instrument	→							→			
AWSC 4370	Flight Instructor *	→			→	→	→	→	→		→	
AWSC 4373	Multi-engine Instructor	→							→		→	
AWSC 4394	Training Techniques for Flight Crew Members			→					→		→	

*Capstone course

→ Course used for assessment data collection

Table 6 Relationship of core courses in the curriculum to the Student Learning Outcomes

Course Code	Courses	Student Learning Outcomes										
		a	b	c	D	e	f	g	h	i	j	K
AWSC 2000	Introduction to Aeronautics and Space	→			→	→		→		→		
AWSC 2130	English Proficiency for Aviation Professionals			→	→	→		→	→	→		

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AWSC 3300	Aviation Law				→	→		→	→	→		
AWSC 3600	Aviation Safety and Security		→	→		→		→		→	→	
AWSC 4000	Airport Development and Operations			→		→				→		→
AWSC 4100	Career Development for Aerospace Professionals			→	→	→	→	→	→			
AWSC 4310	Human Factors in Aviation	→		→		→	→	→				→
BADM 1900	Fundamentals of Management		→		→			→				
ENGL 2075	Technical Literature					→						
MAEC 2211	Principles of Economics (MICRO)		→					→				
MAEC 2212	Principles of Economics (MACRO)		→					→				
MATH 1500	Pre-Calculus	→	→									→
PHYS 3500	Aviation Physics	→	→									→
PSYC 1051	General Psychology		→	→								

→ Course used for assessment data collection

Table 7 Relationship of general education courses in the curriculum to the Student Learning Outcomes

Course Code	Courses	Student Learning Outcomes										
		a	b	C	d	e	f	g	h	i	j	k
GESP 1101	Literature & Communication: Narrative and Essay					→						
GESP 1102	Literature & Communication: Poetry and Theater					→						
GESP 2203	Vision of the World through Literature					→						
GEEN 1201 or 2311	Development of English through Reading I Reading & Writing					→						
GEEN 1202 or 2312	Development of English through Reading II Literature & Writing					→						
GEEN 1203 or 2313	Development of English through Writing Reading & Research					→						
GEPE 4040	Ethics Dimensions of Contemporary Matters				→			→				
GECF 1010	The Christian Faith				→							
GEST 2020	Science Technology and Environment	→						→	→			
GEHS 2010	Historical Process of Puerto Rico							→				
GEIC 1010	Information and Computer Literacy								→			
GEHP 3000	Well Being and Quality of Life				→		→					
GEMA 1200	Fundamentals of Algebra	→	→									→

3.5 Aviation Core Topics

To satisfy Aviation Sciences Management Program criteria, our graduates MUST demonstrate that they are able to:

1. Describe the professional attributes, requirements or certifications, and planning applicable to aviation careers.
2. Describe the principles of aircraft design, performance and operating characteristics; and the regulations related to the maintenance of aircraft and associated systems.
3. Evaluate aviation safety and the impact of human factors on safety.
4. Discuss the impact of national and international aviation law, regulations and labor issues on aviation operations.
5. Explain the integration of airports, airspace, and air traffic control in managing the National Airspace System.
6. Discuss the impact of meteorology and environmental issues on aviation operations.

The program has developed and published the following tables to show the relationship between courses and the aviation core topics.

Table 8 Relationship of concentration courses in the curriculum to the aviation core topics

Course Code	Courses	Aviation Core Topics					
		1	2	3	4	5	6
AWSC 2115	Private Pilot Theory	→	→	→	→	→	→
AWSC 2116	Basic Flight Laboratory	→	→	→	→	→	→
AWSC 3155	Instrument Pilot	→		→		→	→
AWSC 3160	Commercial Pilot	→	→	→	→	→	→
AWSC 3411	Principles of Air Traffic Control					→	
AWSC 4204	Airline Operations	→		→	→		→
AWSC 4305	Meteorology in Aviation			→		→	→
AWSC 4320	Advanced Aircraft Systems		→				
AWSC 4340	Applied Aerodynamics		→				
AWSC 4364	Certified Flight Instructor: Instrument	→	→	→	→	→	→
AWSC 4370	Flight Instructor *	→	→	→	→	→	→
AWSC 4373	Multi-engine Instructor	→	→	→			
AWSC 4394	Training Techniques for Flight Crew Members			→			

→ Course used for assessment data collection

Table 9 Relationship of aviation core courses in the curriculum to the aviation core topics

Course Code	Courses	Aviation Core Topics					
		1	2	3	4	5	6
AWSC 2000	Introduction to Aeronautics and Space	→			→	→	

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AWSC 2130	English Proficiency for Aviation Professionals			→		→		
AWSC 3300	Aviation Law		→	→	→	→	→	→
AWSC 3600	Aviation Safety and Security			→	→			
AWSC 4000	Airport Development and Operations			→	→			→
AWSC 4100	Career Development for Aerospace Professionals	→		→	→			
AWSC 4310	Human Factors in Aviation			→				
PHYS 3500	Aviation Physics		→					

→ Course used for assessment data collection

Table 10 Relationship between aviation core topics and Student Learning Outcomes' Performance Criteria

Aviation Core Topics	Student Learning Outcomes/Program Criteria										
	A	B	C	D	E	F	G	H	I	J	K
1. Describe the professional attributes, requirements or certifications, and planning applicable to aviation careers.			→	→	→	→ 1	→		→		
2. Describe the principles of aircraft design, performance and operating characteristics; and the regulations related to the maintenance of aircraft and associated systems	→ 2	→						→		→	
3. Evaluate aviation safety and the impact of human factors on safety.	→				→ 2		→		→	→	→
4. Discuss the impact of national and international aviation law, regulations and labor issues on aviation operations.	→			→		→	→		→ 1		→
5. Explain the integration of airports, airspace, and air traffic control in managing the National Airspace System.		→					→	→	→ 2		→
6. Discuss the impact of meteorology and environmental issues on aviation operations.	→	→ 1								→	→

Example: Aviation Core Topic number 4 is aligned with program criteria I.1 which stated that the students must be able to discriminate between acts and regulations affecting the aviation industry domestically and internationally. Assessment is collected in those courses where the student learning outcome and program criteria are aligned with the aviation core topic. Thus, a total of 6 outcomes are evidenced.

4. Assessment Plan

4.1. Tools used for assessment

Table 11 Mapping of assessment methods with the Student Learning Outcomes

Assessment tools	Student Learning Outcomes										
	a	b	c	d	e	f	g	h	i	j	k
Exams (standardized/locally developed)	→	→		→		→			→	→	
Written Reports/essays				→	→	→	→				→
Oral Presentation			→		→						→
Performance (Stage) Checks		→						→		→	
Teamwork evaluation			→								
External Examiner								→			
Total Occurrences	3	2	2	2	3	2	3	3	3	3	2

→ = more than one instance

4.2 Assessment Plan Data Collection Cycle

The assessment plan consists of the following steps:

1. For each of the Student Learning Outcomes, specific Performance Criteria (PCs) are identified that our students should achieve before graduation.
2. Using assessment tools to collect and evaluate data about our students it is determined whether they are achieving the PC, therefore, meeting the Student Learning Outcomes, and ultimately the EGs.
3. If the outcomes are not being met, then corrective changes must be made and subjected to a new cycle in the assessment process.

Each of the Student Learning Outcomes is achieved by planning and monitoring the curricular content from certain key and contributing courses. Key courses are those courses chosen, by the faculty, to assess each Student Learning Outcomes based on the data collection cycle plan (Table 12).

Table 12 Aircraft Systems Management (Professional Pilot) Program Data Collection

SLO	2020		2021		2022		2023		2024	
	Spring	Fall								
A			→		→		→		→	
B			→		→		→		→	
C			→		→		→		→	
D	→			→		→		→		→
E	→			→		→		→		→
F	→			→		→		→		→
G			→		→		→		→	
H			→		→		→		→	
I	→			→		→		→		→
J			→		→		→		→	
K	→			→		→		→		→

4.3 Level of Achievement

A criterion for success has been set for each direct and indirect means tools of assessment, and is given in Table 13.

Table 13 Level of Achievement

Assessment Tools	Direct or Indirect Measure	Level of Achievement
Exams	Direct	70%
Written Reports/essays	Direct	70%
Oral Presentation	Direct	70%
Performance Checks	Direct	70%
Teamwork Evaluation	Direct	70%
External Examiner	Indirect	70%

The School of Aeronautics faculty decided to set the achievement level of 70%. The criteria are a “moving target”. Meeting any particular criteria does not mean our efforts to improve will come to an end; once we are consistently meeting our targets for most outcomes we will set new, more ambitious targets.

4.4 Assessment Plan Layout Table

The Learning Outcomes presented here correspond to the Student Learning Outcomes established by the Aviation Accreditation Board International (AABI). The specific Performance Criteria (written in bold-italic) has been included within the second column that explains the assessment method used to evaluate achievement in that particular objective.

Table 14 Assessment Plan Layout Table

Course	What should a student be able to know, value, or be able to do upon graduation and beyond?	<ol style="list-style-type: none"> 1. What assessment tools and/or methods will you use to determine achievement of the learning outcomes? 2. Describe how the data from these tools and/or methods will be/have been collected. 3. Explain the data analysis procedure.
PHYS 3500 Aviation Physics	A.1 Flight students must demonstrate the ability to apply mathematics, science, and applied sciences to aviation-related disciplines.	<i>Students must be able to identify, execute, solve, and evaluate concepts and equations related to the solution of problems within aviation physics.</i> <ol style="list-style-type: none"> 1. The assessment tool used will be an exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on these specific questions.
AWSC 2115 Private Pilot Theory	A.2 Students must demonstrate the ability to apply mathematics, science, and applied sciences to aviation-related disciplines.	<i>Students will describe the principles of aircraft design, performance and operating characteristics; and the regulations related to the maintenance of aircraft and associated systems.</i> <ol style="list-style-type: none"> 1. The assessment tool will be the final exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on the specific questions.
AWSC 3160 Commercial Pilot (Theory Portion)	A.3 Flight students must demonstrate the ability to apply mathematics, science, and applied sciences to aviation-related disciplines.	<i>Students must be able to predict the airplane's performance capability by using math, concepts and equations to solve for weight and balance problems</i> <ol style="list-style-type: none"> 1. The assessment tool used will be the second exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on these specific questions.
AWSC 3155 Instrument Pilot (Theory portion)	B.1 Flight students must demonstrate the ability to analyze and interpret data.	<i>Students will discuss the impact of meteorology and environmental issues on aviation operations by being able to analyze and correctly interpret weather data from Graphic Weather Sources and Printed Weather Reports and Forecasts.</i> <ol style="list-style-type: none"> 1. The assessment tool will be an exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on the specific questions

<p>AWSC 3155</p> <p>Instrument Pilot (Flight portion)</p>	<p>B.2</p> <p>Flight students must demonstrate the ability to analyze and interpret data.</p>	<p><i>Students must be able to examine and properly interpret the data contained in instrument approach charts and translate these instructions into actions and procedures.</i></p> <ol style="list-style-type: none"> 1. The assessment tools used are a flight performance check using a rubric. 2. Stage Check 2 or End-of-Course can be used to evaluate the student's knowledge of Instrument Approach Charts and the execution of this information during flight operations. A specially designed rubric measures the student's competence in both of these aspects. 3. The student must be found acceptable in both to pass the stage check and therefore, demonstrate achievement in this outcome.
<p>AWSC 4310</p> <p>Human Factors in Aviation</p>	<p>C.1</p> <p>Flight students must demonstrate the ability to work effectively on multi-disciplinary and diverse teams.</p>	<p><i>Students will perform in collaborative learning by analyzing accident reports. Later they will deliver an oral presentation on the complete nature of the accident.</i></p> <ol style="list-style-type: none"> 1. A rubric will be used for peer evaluation of teamwork by students themselves. 2. This rubric has a total score of 25 points. 3. At least 70% of students must score 20 or more on the rubric.
<p>AWSC 4394</p> <p>Training Techniques for Flight Crew (Crew Resource Management)</p>	<p>C.2</p> <p>Flight Students must demonstrate the ability to work effectively in multi-disciplinary and diverse teams.</p>	<p><i>Students must be able to perform in collaborative learning by analyzing accident reports. Groups will use these reports and engage in mutual assistantship, exchange of ideas, discussion, encouragement, and joint support to deliver a group presentation on the complete nature of the accident.</i></p> <ol style="list-style-type: none"> 1. Various rubrics will evaluate the students' ability to work effectively in teams. One rubric allows them to engage in a discussion roundtable, another rubric evaluates their teamwork process management and group functioning prior to the presentation, and another rubric is used by student themselves to evaluate each other as teammates. 2. The roundtable rubric has a total value of 25 points, the process management / group functioning rubric has a total score of 50 points, and finally the teamwork evaluation by students is valued at 25 pts. A total of 100 points is used to evaluate the ability to work in

		teams. At least 70% of students must score 70%.
AWSC 4100 Career Development for Aerospace Professionals	D.1 Flight students must demonstrate the ability to make professional and ethical decisions	<i>Students must discriminate between ethical versus unethical practices and between professional and unprofessional behavior within the aviation industry.</i> <ol style="list-style-type: none"> 1. The assessment tool used will be an exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on these specific questions.
AWSC 4370 Flight Instructor (Theory portion)	D.2 Flight students must demonstrate the ability to make professional and ethical decisions	<i>Students must be able to evaluate a professional and ethical issue related to the practice of flight instruction and/or professional pilot.</i> <ol style="list-style-type: none"> 1. The assessment tool used will be an essay evaluated using a rubric. 2. 70% of students must score at least 70%
AWSC 2130 English Proficiency for Aviation Professionals	E.1 Flight students must demonstrate the ability to communicate effectively, using both written and oral communication skills.	<i>Students must be able to demonstrate ICAO oral proficiency skills, to at least Level 4 (operational level), in pronunciation, structure, vocabulary, fluency, comprehension, and interaction.</i> <ol style="list-style-type: none"> 1. An ICAO rubric is used to evaluate the oral interview. 2. The maximum score is 6 points for all interview components. 3. At least, 70% of students must obtain a level/score of 4 points or higher on each final course interview criterion.
AWSC 4310 Human Factors in Aviation	E.2 Students must demonstrate the ability to communicate effectively, using both written and oral communication skills.	<i>Students must be able to write an original essay on a current subject in Aviation Human Factors where he/she evaluates aviation safety and the impact of human factors on safety.</i> <ol style="list-style-type: none"> 1. The assessment tool will be an essay graded with a rubric. 2. 70% of students must score 70% on this rubric.
AWSC 4370 Flight Instructor (Theory portion)	E.3 Flight students must demonstrate the ability to communicate effectively, using both written and oral communication skills.	<i>Students must be able to create and present a preflight lesson on a selected pilot maneuver and/or aeronautical topic, from an instructional standpoint as it would be taught to a student.</i> <ol style="list-style-type: none"> 1. A special rubric will be used to evaluate the oral presentation and another rubric will be used to evaluate the student's ability to construct and write a lesson plan.

		<ol style="list-style-type: none"> Both rubrics contain specific set of criteria on (instructional communication) which will be evaluated by this rubric. 70% of students must score 70%.
AWSC 4100 Career Development for Aerospace Professionals	F.1 Flight students must demonstrate the ability to engage in and recognize the need for life-long learning.	<i>Students must be able to demonstrate an awareness of the professional development required for each aviation specialty.</i> <ol style="list-style-type: none"> The assessment tool used will be an exam. Embedded test questions about the specific topics will be inserted in the test. At least 70% of students will score 70% or more on these specific questions.
AWSC 4370 Flight Instructor (Theory portion)	F.2 Flight students must demonstrate the ability to engage in and recognize the need for life-long learning.	<i>Students must be able to demonstrate the need for personal and professional enhancement by being able to write an Integrated Paper pointing out resources for professional development (including those for independent learning) and elucidating their importance.</i> <ol style="list-style-type: none"> The assessment tool will be an Integrated Paper evaluated using a specialized rubric. At least 70% of students must score 70 percent.
AWSC 3300 Aviation Law	G.1 Flight students must demonstrate the ability to assess contemporary issues.	<i>Students must be able to evaluate agreements and/or laws affecting the aviation industry today.</i> <ol style="list-style-type: none"> The assessment tool used is a written project checked by using a rubric. This rubric measures the student's ability to research on a current law or agreement that affects the aviation industry today. After research the student will propose new regulation(s) or changes to existing regulations to the U.S. Code of Law. 70% of students must score 70% on the rubric.
AWSC 4310 Human Factors in Aviation	G.2 Flight students must demonstrate the ability to assess contemporary issues.	<i>Students must be able to conduct research and write an original essay on the contemporary issues surrounding a human factors topic. The purpose of this essay is to allow students to analyze the current and future state of issues regarding aviation human factors.</i> <ol style="list-style-type: none"> The assessment tool is an essay graded with a rubric. The rubric includes a criterion called: <i>Analysis of human factors contemporary issues and impact on aviation today.</i>

		3. Students must score at least 7 out of 10 points in this specific measure.
AWSC 4370 Flight Instructor (Theory Portion)	G.3 Flight students must demonstrate the ability to assess contemporary issues.	<i>Students must be able to research a topic affecting the flight instruction and/or professional pilot industry today.</i> 1. The assessment tool used will be an essay evaluated using a rubric. 2. 70% of students must score at least 70%
AWSC 3155 Instrument Pilot (Flight portion)	H.1 Flight students must demonstrate the ability to use the techniques, skills, and modern technology necessary for professional practice.	<i>Students must be able to execute a fully planned IFR cross-country from departure to destination demonstrating use of navigational technology, cockpit resources, and technical flying skills for departure, enroute, and arrival procedures.</i> 1. The assessment tools used are a performance check using a Checklist-style rubric. 2. The third stage (performance) check is used to evaluate the student in IFR cross-country procedures. The checklist contains eight (8) execution aspects (criteria) which students must demonstrate in order to successfully pass the stage check, and therefore, evidence achievement of the outcome. 3. The student must demonstrate all 8 specific skills, concepts, or processes.
AWSC 3160 Commercial Pilot (Flight Portion)	H.2 Flight students must demonstrate the ability to use the techniques, skills, and modern technology necessary for professional practice.	<i>Commercial students will demonstrate a broad understanding of the role and skills of the commercial pilot.</i> At least 70% of students pass the FAA practical test. The practical test is administered by FAA representatives or designated pilot examiners independent of IAUPR.
AWSC 4370 Flight Instructor (Flight portion)	H.3 Flight students must demonstrate the ability to use the techniques, skills, and modern technology necessary for professional practice.	<i>Flight instructor students will demonstrate a broad understanding of the role and skills of the flight instructor pilot.</i> At least 70% of students pass the FAA practical test. The practical test is administered by FAA representatives or designated pilot examiners independent of IAUPR.
AWSC 2000 Introduction to Aeronautics and Space	I.1 Flight students must demonstrate the ability to assess the national and international aviation environment.	<i>Students must be able to discriminate between acts and regulations affecting the aviation industry domestically and internationally.</i> 1. The assessment tools used will be the Midterm Exam. 2. Embedded test questions about the specific topics will be inserted in the tests. 3. At least 70% of students will score 70% or more on these specific questions.

<p>AWSC 2115</p> <p>Private Pilot Theory</p>	<p>I.2</p> <p>Students must demonstrate the ability to assess the national and international aviation environment.</p>	<p><i>Students must explain the integration of airports, airspace, and air traffic control in managing the National Airspace System</i></p> <ol style="list-style-type: none"> 1. The assessment tool will be an exam. 2. Embedded test questions about the specific topics will be inserted in the tests. 3. At least 70% of students will score 70% or more on these specific questions.
<p>AWSC 3600</p> <p>Aviation Safety and Security</p>	<p>I.3</p> <p>Flight students must demonstrate the ability to assess the national and international aviation environment.</p>	<p><i>Flight students must be able to explain the international accident investigation process including the role of the International Civil Aviation Organization and other regional and national authorities.</i></p> <ol style="list-style-type: none"> 1. The assessment tool used will be the first exam. 2. An embedded short essay question will be inserted in the exam regarding this topic. 3. At least 70% of students will score 70% or more on this specific question.
<p>PHYS 3500</p> <p>Aviation Physics</p>	<p>J.1</p> <p>Flight students must demonstrate the ability to apply pertinent knowledge in identifying and solving problems.</p>	<p><i>Students must be able to identify, execute, solve, and evaluate concepts and equations related to the solution of problems within aviation physics.</i></p> <ol style="list-style-type: none"> 1. The assessment tool will be an exam. 2. Embedded test questions about the specific topics will be inserted in the test. 3. At least 70% of students will score 70% or more on these specific questions.
<p>AWSC 3600</p> <p>Aviation Safety and Security</p>	<p>J.2</p> <p>Students must demonstrate the ability to apply pertinent knowledge in identifying and solving problems.</p>	<p><i>Students must be able to identify the hazards and risks associated with a safety scenario and propose methods to reduce the levels of risk to as low as reasonably practical (ALARP). Once the students identify the related hazards, they will determine the likelihood and severity of the risks associated with the situation. In the end, the students will propose methods to reduce the risks to levels as low as reasonably practical (ALARP).</i></p> <ol style="list-style-type: none"> 1. The assessment tool will be a written report of a case study. 2. This report has a maximum value of 10 points. 3. 70% of students must score 7 points in the written report.
<p>AWSC 4370</p> <p>Flight Instructor (Flight Portion)</p>	<p>J.3</p> <p>Flight students must demonstrate the ability to apply pertinent knowledge in identifying and solving problems.</p>	<p><i>Students must be able to assess and correctly perform so as to identify and solve simulated in-flight emergencies that include but are not limited to: loss of communications, engine fire, and systems and equipment malfunctions.</i></p>

		<ol style="list-style-type: none"> 1. The assessment tool to be used is a specially developed rubric utilized during the End-of-Course or final performance check of CFI candidates. 2. Students must be found acceptable and commendable on all criteria. 3. After each performance check is satisfactorily completed the data will be collected and the student will be recommended for certification (practical test).
AWSC 4000 Airport Development and Operations	K.1 Flight students must be able to demonstrate the ability to apply knowledge of business sustainability to aviation issues.	<i>Students must be able to evaluate different methods available to increase the airport capacity and reduce possible delays associated with the operations.</i> Based on a given scenario, the student will identify possible areas of conflicts in terms of the safe and efficient flow of aircraft in and out of the airport. The student will analyze different approaches to alleviate or eliminate the situation. Finally, the student will design a strategy to implement it as the action plan to follow. <ol style="list-style-type: none"> 1. The assessment tool will be a written and oral project graded with a rubric. 2. The rubric is especially designed to evaluate the students on a defined set of criteria. 3. 70% of students will score 70% on this rubric
AWSC 4204 Air Carrier Operations	K.2 Flight students must be able to demonstrate the ability to apply knowledge of business sustainability to aviation issues.	<i>Students must be able to conduct research on airline strategies to offer innovative solutions towards sustainable air carrier operations in terms of development, economy, and/or social standpoints.</i> <ol style="list-style-type: none"> 1. The assessment tool will be a written project corrected with a rubric. 2. 70% of students will score 70% on this rubric

V. Definitions and Designations

Student Learning Outcome (SLO): Describe what students are expected to know and able to do by the time of graduation. These relate to the knowledge, skills and behaviors that the students acquire as they progress through the program.

Performance Criteria (PC): Also known as the Program-level Outcomes, these are measurable statements and indicates the specific characteristics students should exhibit in order to demonstrate desire arraignment of the general program outcome.

Assessment Methods: Instruments or tools that are used to assess student learning.

Source of Assessment: The key course or other setting in which the assessment data will be collected. These are identified by the symbol: →

Time of Data Collection: Identifies when the assessment data will be collected.

Assessment Coordinator (Dr. Jonathan Velázquez): Person responsible for assuring that the assessment data is collected.

Evaluation of Results (Assessment Committee members): Group responsible for determining the meaning of the assessment results and making recommendations for action.