Embry-Riddle Aeronautical University » Academic Division » Daytona Beach Campus » DB\_College of Arts and Sciences » DB\_General Education **DB\_General Education program** 

## Standing Requirements Program Mission Statement

**General Education Program Mission** 

Recognizing its general and special missions in education, Embry-Riddle Aeronautical University embraces a General Education Program. This course of study ensures that students possess the attributes expected of all university graduates. The General

Education Program enables students, regardless of their degree program, to understand the significance of acquiring a broad range of knowledge.

Throughout the General Education Program, students gain and enhance competence in written and oral communication. They practice reasoning and critical thinking skills and demonstrate computer proficiency. As students engage in this course of study, they familiarize themselves with and investigate ideas and methodologies from several disciplines. These include the arts and humanities, the social sciences, economics, the natural sciences and mathematics. The program also helps students recognize interrelationships among the disciplines.

Promoting the appreciation of varied perspectives, the General Education Program provides intellectual stimulation, ensuring that students are broadly educated. This course of study empowers students to make informed value judgments, to expand their knowledge and understanding of themselves, and to lead meaningful, responsible, and satisfying lives as individuals, professionals, and concerned members of their society and the world. Over 4500 students are enrolled in the General Education Program at Daytona Beach.

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## **ERAU University Mission Statement**

Our mission is to teach the science, practice and business of aviation and aerospace, preparing students for productive careers<sup>1</sup> and leadership roles in service around the world.<sup>2</sup>

Our technologically enriched, student-centered environment<sup>3</sup> emphasizes learning through collaboration and teamwork,<sup>4</sup> concern for ethical and responsible behavior,<sup>5</sup> cultivation of analytical<sup>6</sup> and management abilities,<sup>7</sup> and a focus on the development of the professional skills needed for participation in a global community.<sup>8</sup> We believe a vibrant future for aviation and aerospace rests in the success of our students. Toward this end, Embry-Riddle is committed to providing a climate that facilitates the highest standards of academic achievement<sup>9</sup> and knowledge discovery,<sup>10</sup> in an interpersonal environment that supports the unique needs of each individual.<sup>11</sup> Embry-Riddle Aeronautical University is the world's leader in aviation and aerospace, engineering and related fields leading to associate's, baccalaureate's, master's and doctoral degrees.

## **Program Alignment to University Mission**

## Select all that apply.

- <sup>1</sup>Preparing students for productive careers
- <sup>2</sup>Preparing students for leadership roles in service around the world
- <sup>3</sup>Technologically enriched environment
- <sup>4</sup>Emphasize learning through collaboration and teamwork
- <sup>5</sup>Concern for ethical and responsible behavior
- <sup>6</sup>Cultivate analytical abilities
- <sup>8</sup>Develop the professional skills needed for participation in a global community
- <sup>9</sup>Facilitating the highest standards of academic achievement
- <sup>10</sup>Facilitating knowledge discovery

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## Standing Requirements Program Outcomes

## DB\_Gen\_Ed Program Outcomes

Outcome

Outcome	Mapping
PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Quantitative Reasoning (DB, PC, WW)
PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	<b>Embry-Riddle General Education Competency Set:</b> Communication (DB, PC, WW), Information Literacy (DB, PC, WW)
PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	<b>Embry-Riddle General Education Competency Set:</b> Communication (DB, PC, WW)
PO_04 Research Conduct and report research accurately and in accordance with professional standards.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Information Literacy (DB, PC, WW)
PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	<b>Embry-Riddle General Education Competency Set:</b> Cultural Literacy (DB, PC, WW), Scientific Literacy (DB, PC, WW)
PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Scientific Literacy (DB, PC, WW)
PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	<b>Embry-Riddle General Education Competency Set:</b> Communication (DB, PC, WW), Information Literacy (DB, PC, WW)

PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Quantitative Reasoning (DB, PC, WW)
PO_09 Global and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Cultural Literacy (DB, PC, WW)
PO_10 History Describe some of the historical and contemporary issues that affect societies.	<b>Embry-Riddle General Education Competency Set:</b> Cultural Literacy (DB, PC, WW)
PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.	<b>Embry-Riddle General Education Competency Set:</b> Critical Thinking (DB, PC, WW), Cultural Literacy (DB, PC, WW)



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#### DB General Education Curriculum Map

Courses and Activities Mapped to DB\_Gen\_Ed Program Outcomes

						Outcome					
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Aerospace Electronics				1							1
AEL 315 Linear Systems and Signals Analysis	Р										
AEL 316 Elements of Engineering Design and Laboratory Procedures		Р	Р	Р	Р	Р	Р	Р			
AEL 321 Advanced Communications Systems Analysis	Р						Р				
AEL 322 Advanced Communications, Microwave and Control Laboratory Systems Analysis		Р	Р	Р	Р	Р	Р	Р			
AEL 323 Applied Control Systems Analysis	Р			Р	Р	Р					
AEL 324 Microwave and Radar System Analysis	Р										
AEL 411 Communications and Navigation Systems			Р	Р	Р						
AEL 412 Surveillance and Control Systems		Р	Р		Р	Р					
AEL 413 Satellite Communications and Navigation Systems		Р	Р	Р	Р	Ρ	Р				
AEL 414 System Test Evaluation Laboratory		Р					Р				
AEL 421 Aerospace Electronic System Integration and Design		м	м	м	м	м	м				
AEL 422 Integrated Logistics Support	м	м	м	м	м	м	м	м			
AEL 423 Test System Development Laboratory		м	м	м	м	м	м				
AEL 424 Senior Project		м	м	м	м	м	м	м		м	м
Air Traffic Management											
AT 200 Air Traffic Management I	I										
AT 302 Air Traffic Management II	I				I						
AT 305 Air Traffic Management III	Р				Р		Р				
AT 315 VFR Tower	Р				Р		Р				
AT 401 Air Traffic Management IV	Р				Р		Р				

						Outcome					
AT 405	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use sciences, information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Global and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Air Traffic Management V AT 406	M				M		M				
Non Radar Air Traffic Control	Р				Р		Р				
Business Administration				1						1	
Introduction to Computer-Based Systems			I		I		Р				
BA 201 Principles of Management		I	I		I						
BA 210 Financial Accounting			Р		I			Р			
BA 215 Transportation Principles			Р	Р			Р			I	
BA 220 Marketing		Р	P	Р	Р						
BA 221 Advanced Computer-Based Systems			Р		I		Р				
BA 225 Business Law					Р						
BA 310 Airport Management		Р		Р				Р		Р	
BA 312 Managerial Accounting			Р		Р		Р				
BA 314 Human Resource Management			Р		Р						
BA 315 Airline Management	Р	Р					Р	Р			
BA 317 Organizational Behavior		Р	Р	Р	Р					Р	Р
BA 318 Entrepreneurial Small Business		Р	Р		Р		Р				
BA 320 Business Information Systems		Р	P		Р		м				
BA 321 Aviation/Aerospace Systems Analysis Methods	Р		Р			Р	Р	Р			
BA 322 Aviation Insurance	Р							Р			
BA 324 Aviation Labor Relations			Р							Р	
BA 325 Social Responsibility and Ethics in Management			Р		Р		Р			Р	
BA 326 Marketing Management		м	м	м			м				
BA 327 Airline-Airport Operations		Р	P	Р				Р		Р	
BA 332 Corporate Finance I					Р			Р			
BA 334 Investment Analysis	Р		Р	Р	Р		Р	Р			
BA 335 International Business	Р		P		Р			Р			6

						Outcome					
BA 340	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Global and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
BA 405 General Aviation Marketing	Р	Р						Р			
BA 410 Management of Air Cargo	Р							Р		Р	
BA 411 Logistics Management for Aviation/Aerospace	м	Р						м			
BA 412 Airport Planning and Design		м	м				Р	Р		м	
BA 418 Airport Administration and Finance	Р			Р							Р
BA 419 Aviation Maintenance Management		Р	Р	Р							
BA 420 Management of Production and Operations	м			Р			Р				
BA 422 Life Cycle Analysis for Systems and Programs in Aviation/Aerospace	Р	Р	м		Р	Ρ		Р			
BA 424 Project Management in Aviation Operations	Р	Р	Р				Р	Р			
BA 426 International Aviation Management		Р	м					м			
BA 427 Management of the Multicultural Workforce			Р	Р	Р					Р	
BA 430 International Trade and Regulations		Р	Р	Р				Р			
BA 436 Strategic Management			м	м			м				
BA 450 Airline/Airport Marketing				Р				I		Р	м
Computer Engineering											
CEC 220 Digital Circuit Design							Р				
CEC 222 Digital Circuit Laboratory	Р	Р									
CEC 300 Computing in Aerospace and Aviation	Р	Р	Р				Ρ			I	
CEC 315 Signals and Systems	Р						Р				
CEC 320 Microprocessor Systems	Р						Р				
CEC 322 Microprocessor Systems Laboratory	Р	Р					Ρ				
CEC 330 Digital Systems Design with Aerospace Applications	Р						Р				
CEC 410 Digital Signal Processing	Р						Р				
CEC 411 Digital Signal Processing Laboratory	Р						Ρ				7

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CEC 420 Computer Systems Design	м	м	м	м	Р		м	Р	Р		Р
CEC 421 Computer Systems Design II	м	м	м	м	Р		м	Р	Р		Р
CEC 440 Autonomous Vehicle Design	Р						Р				
CEC 450 Real-Time Systems	Р	Р			I		Р				
CEC 460 Telecommunications Systems	Р						Р				
CEC 470 Computer Architecture	Р						Р				
Civil Engineering				•							
CIV 304 Structural Analysis	Р	I	I	Р			Р	Р			
CIV 316 Hydraulics	Р										
CIV 340 Construction Engineering	Р	I	I								
CIV 362 Engineering and Construction Operations in Space	Р	I	I			Ρ					
CIV 370 Computational Methods in Civil Engineering	Р							Р			
CIV 431 Reinforced Concrete Design	м										
CIV 432 Structural Steel Design	м										
CIV 460 Senior Design Project	Р			Р			Р	I			
CIV 490 The Civil Engineering Profession		I	I						Р		
Communication											
COM 008 Academic English for Non-Native Speakers of English		I								I	I
COM 018 Advanced Academic English for Non-Native Speakers of English		I								I	I
COM 020 Fundamentals of Communication		I							I		I
COM 122 English Composition and Literature		I		I					I		I
COM 219 Speech			I	Р			I				
COM 221 Technical Report Writing		I	Р		I		Р				
COM 222 Business Communication		I	Р		I		Р				
COM 225 Science and Technology Communication		Р		Р	I	Р	Р		Р	Р	8 P

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COM 230 Digital Photography			Р		I		Р				I
COM 260 Introduction to Media		Р	Р	Р	I		Р			Р	Р
COM 265 Introduction to News Writing		Р		Р	Р		Р				
COM 268 Sports Writing		Р		P	I		1			1	I
COM 320 Mass Communication Law and Ethics		Р		Р	м					Р	Р
COM 322 Aviation and Aerospace Communication		Р	Р	м	Р		Р			м	м
COM 350 Environmental Communication		Р	Р	Р	Р	Р	Р			Р	Р
COM 360 Media Relations		Р	Р	Р	Р		Р			Р	Р
COM 364 Visual Design		Р	Р				Р		Р		Р
COM 410 Advanced Professional Writing		м	м	м	м		Р				
COM 411 Web Design Workshop		Р	Р		Р		Р				
COM 412 Advanced Technical Writing		м		м	м		Р				
COM 415 Non-Verbal Communication	Р	м	м	м			Р		Р		м
COM 460 Media Relations II	Р	м	Р	м	м		Р			Р	м
Computer Science											
CS 118 Fundamentals of Computer Programming	Р						Р				
CS 222 Introduction to Discrete Structures	Р						Р				
CS 225 Computer Science II	Р	Р					Р				
CS 303 Network Security	Р						Р				
CS 315 Data Structures and Analysis of Algorithms							Р				
CS 317 Files and Database Systems	Р						Р				
CS 332 Organization of Programming Languages	Р						Р				
CS 335 Introduction to Computer Graphics	Р						Р				
CS 344 C Programming and UNIX	Р						Р				
CS 350 Computer Modeling and Simulation	Р						Р				
CS 420 Operating Systems	Р						Р				9

						Outcome					
CS 455	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
CS 490 Computer Science Capstone Design		м			Р		м				Р
Economics									I	I	
EC 200 An Economic Survey	I		Р				Р			Р	
EC 210 Microeconomics					Р			Р		Р	Р
EC 211 Macroeconomics	I		Р				Р			Р	l
EC 225 Engineering Economics	Р				Р			Į			
EC 315 Managerial Economics	Р							Р		Р	
EC 420 Economics of Air Transportation					Р			Р		Р	Р
Electrical Engineering											
EE 223 Linear Circuits Analysis	I						I				
EE 224 Electrical Engineering Laboratory		I									
EE 300 Linear Circuit Analysis II	Р										
EE 301 Electrical Engineering Laboratory II		Р									
EE 302 Electronics Devices and Circuits	Р						Р				
EE 304 Electronic Circuits Laboratory		Р									
EE 307 Avionics I	м				м		м				
EE 308 Introduction to Electrical Communications	м										
EE 310 Avionics II	м				м		м				
EE 335 Electrical Engineering I	Р						I				
EE 336 Electrical Engineering Laboratory I		Р									
EE 340 Electric and Magnetic Fields	Р	Р		Р			Р				
EE 401 Control Systems Analysis and Design	м						Р				
EE 402 Control Systems Laboratory	м	Р		Р			Р				
EE 417 Digital Communications	м										
EE 420 Avionics Preliminary Design	м	м	м	м	м	м	м	м		Р	

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EE 421 Avionics Detail Design	м	м	м	м	м	м	м	м		Р	
EE 430 Introduction to Radio Frequency Circuits	м	м		м			м	Р			
EE 430L Radio Frequency Circuits Laboratory	м	м		м			м				
Engineering									•		
EGR 101 Introduction to Engineering	I	I	Р		Р	I	I	I	I	I	I
EGR 115 Introduction to Computing for Engineers	Р	Р			I	Р	Р	I			
Electronics									·		-
EL 107 Direct and Alternating Current Fundamentals and Circuit Analysis	Р	Р			Р		Р				
EL 108 Direct and Alternating Current Laboratory		Р		Р	Р	Р	Р	Р			
EL 203 Microelectronics Fundamentals and Circuit Analysis											
EL 204 Microelectronics Laboratory		Р		Р	Р		Р				
EL 212 Digital Circuit and Systems Analysis		Р		Р	Р			Р			
EL 213 Digital Circuit Laboratory		Р				Р	Р	Р			
EL 307 Microprocessor Systems		Р		Р	Р		Р				
EL 308 Microprocessor Systems Laboratory		Р	Р	Р	Р		Р	Р			
Engineering Physics			·								
EP 101 Current Topics in Space Sciences	I	Р	I	I	Р					I	
EP 320 Electro-Optical Engineering		I	Р		Р		Р				
EP 340 Introduction to Space Systems Design		Р	I	Р	I	Р	I	I			
EP 391 Microcomputers and Electronic Instrumentation		Р	Р	Р	Р		Р				
EP 393 Spaceflight Dynamics		Р		Р			Р				
EP 394 Space Systems Engineering		Р		Р	Р		Р				
EP 400 Thermodynamics and Statistical Mechanics		P				Р				I	I
EP 410 Space Physics		Р	Р	Р		м	Р	I			
EP 420 Planetary Science				P		P	P				11

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	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
EP 425 Observatory Astronomy		Р		Р		м	Р				
EP 440 Engineering Electricity and Magnetism						Р	Р				
EP 455 Quantum Physics		Р	Р	1		м	I				
EP 496 Space Systems Design I		м	м	м			м				
EP 497 Space Systems Design II		м	м	м		Р	м				
Engineering Science											
ES 201 Statics	Р						I				
ES 202 Solid Mechanics	Р	Р					Ρ				
ES 204 Dynamics	Р						Ρ				
ES 206 Fluid Mechanics	Р						Р				
ES 305 Thermodynamics	Р			I		Р	Р				
ES 320 Engineering Materials Science	Р					Р	Р				
ES 403 Heat Transfer	м				I	Р					
Human Factors											
HF 300 Human Factors I: Principles & Fundamentals											I
HF 302 Human Factors II: Analytic Methods and Techniques											Р
HF 305 Human Factors III: Test and Evaluation											Р
HF 310 Human-Computer Interaction											Р
HF 312 Ergonomics and Bioengineering											Р
HF 315 Automation and Systems Issues in Aviation											Р
HF 325 Human Factors and System Safety											Р
HF 335 Human Factors in Air Traffic Control											Р
HF 340 Human Factors and Product Liability											Р
HF 400 Human Factors IV: System Design											м
HF 410 Human Factors Engineering: Crew Station Design											Р

						Outcome					
HF 412 Simulating Humans in Complex Systems	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical. <b>P</b>
HF 415 Human Factors in Simulation Systems											Р
HF 490 Practicum in Human Factors Psychology											Р
Honors		•	·					·			
HON 150 Honors Seminar I	I	I	I	I	I	I	I		I	I	I
HON 250 Honors Seminar II	Р	Р	Р	Р	Р	I	Р		Р	Р	Р
HON 350 Honors Seminar III	м	м	м	м	Р	Р	Р		Р	Р	м
Homeland Security											
HS 110 Introduction to Homeland Security					I				I	I	I
HS 210 Fundamentals of Transportation Security		Р	Р								
HS 215 Introduction to Industrial Security			Р	Р							
HS 230 Terrorism: Origins, Ideologies, and Goals									I		I
HS 280 Business Skills for the Homeland Security Professional					Р						
HS 310 Fundamentals of Emergency Management		Р	Р	Р				Р			Р
HS 315 Critical Infrastructure and Risk Analysis	Р	Р	Р	Р				Р			Р
HS 320 Homeland Security Law and Policy									I		Р
HS 370 Emergency Management Strategy & Policy		Р									
HS 380 Asymmetric Terrorism: Cyberspace, Technology, and Innovation		Р									
HS 385 Homeland Security Technology and Systems		Р				Р					
HS 405 Emerging Issues in Homeland Security				Р						Р	
HS 410 Exercise Design and Evaluation in Homeland Security		Р									
HS 425 Counter Terrorism Strategy and Policy		Р	Р	Р							
HS 480 Environmental Security						Р			Р		
HS 490 Senior Project in Homeland Security		м	м	м	Р			м			м
Humanities											13

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HU 140 Western Humanities I: Antiquity and the Middle Ages		Р		Р					I	Р	I
HU 141 Western Humanities II: Renaissance to Postmodern		Р		Р					I	Р	I
HU 142 Studies in Literature		Р		Р					I	Р	I
HU 143 Introduction to Rhetoric		Р		Р					I	Р	I
HU 144 Studies in Art		Р		Р					I	Р	I
HU 145 Themes in the Humanities		Р		Р					I	Р	I
HU 146 Music Appreciation and Criticism		Р		Р					I	Р	I
HS 300 World Literature		Р		Р					Р	Р	Р
HU 302 Contemporary Issues in Science		Р	Р	Р	Р	Р			Р	м	м
HU 305 Modern Literature		Р		Р					Р		Р
HU 310 American Literature		Р		Р					Р	Р	Р
HU 316 Studies in Music		Р	Р	Р			Р		Р	Р	Р
HU 319 Advanced Speech			м		P		Р				
HU 325 Exploring Film		Р							Р	Р	Р
HU 330 Values and Ethics		м	Р	Р	Р	Р	Р		Р	Р	Р
HU 335 Technology and Modern Civilization		Р		Р	Р	Р			Р	Р	Р
HU 338 Traversing the Borders: Interdisciplinary Explorations		Р	Р	Р					Р	Р	Р
HU 341 World Philosophy		Р	м	м	Р	Р	м		Р	Р	Р
HU 345 Comparative Religions		Р		м	Р				Р	м	м
HU 355 Creative Writing		Р		м			Р		Р		м
HU 375 The Nature of Language		Р	Р	Р	Р				м	м	Р
HU 415 Non-Verbal Communication	Р	м	м	м			Р		Р		м
HU 420 Applied Cross-Cultural Communication		м	Р	м						Р	м
HU 475 Senior Thesis		м	м	м	м						м

						Outcome					
	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Mathematics											
MA 111 College Mathematics for Aviation I	I										
MA 112 College Mathematics for Aviation II	I										
MA 120 Quantitative Methods I	I										
MA 140 College Algebra	I										
MA 142 Trigonometry	I										
MA 145 College Algebra and Trigonometry	I										
MA 220 Quantitative Methods II	I										
MA 222 Business Statistics	I										
MA 241 Calculus and Analytical Geometry I	I										
MA 242 Calculus and Analytical Geometry II	I										
MA 243 Calculus and Analytical Geometry III	I										
MA 320 Decision Mathematics	I										
MA 345 Differential Equations and Matrix Methods	I										
MA 412 Probability and Statistics	Р										
MA 432 Linear Algebra	м										
MA 438 Numerical Analysis I	м		Р								
MA 442 Mathematical Methods for Engineering and Physics II	м					Р					
Mechanical Engineering											
ME 303 Vehicle Dynamics	м	Р				м	м				
ME 304 Introduction to Machine Design	Р										
ME 305 Machine Design Laboratory	Р										
ME 306 Robotic Mechanisms	Р	Р				Р	Р				
ME 400 Vibration & Acoustics	Р	Р									
ME 401 Advanced Fluid Dynamics	Р	Р									
ME 402 Robotic Arms	м					м	м				15

						Outcome					
ME 404	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Global and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Mechatronics	M	Р	Р	P		м	M				
Vehicle Power Systems	М	Р				м	М				
ME 407 Preliminary Design of Robotics Systems with Laboratory	м	м	м	м	Р	м	м	Р			
ME 409 Vehicle Aerodynamics	м	м	Р	Р		м	м				
ME 410 Advanced Machine Design	Р	Р	Р	Р		Р	Р				
ME 413 Preliminary Design of High Performance Vehicles with Laboratory	м	м									
ME 423 Senior Design of High Performance Vehicles	м	м	м	м	м	м	м	м			
ME 427 Senior Design of Robotic Systems	м	м	м	м	м	м	м	м			
Physical Science		1	1	I	I		1		1	1	<u> </u>
PS 101 Basic Chemistry	Р					Р				Р	Р
PS 101L Basic Chemistry Laboratory				I		Р	I				
PS 103 Technical Physics I	I					I				I	I
PS 103L Technical Physics I Laboratory		Р		Р		Р					
PS 104 Technical Physics II	Р					Р				Р	Р
PS 104L Technical Physics II Laboratory		Р		Р		Р					
PS 105 General Chemistry I	Р			I		Р				Р	Р
PS 105L General Chemistry I Laboratory				Р			Р				
PS 107 Elements of Biological Science	Р	Р	Р			Р	Р			Р	Р
PS 107L Biological Science Laboratory				Р			Р				
PS 140 Chemistry for Engineers					Р	Р	Р				
PS 141 Chemistry for Engineers Laboratory						Р	Р				
PS 142 Introduction to Environmental Science	Р	Р	Р	Р		Р	Р	Р	Р	Р	Р
PS 150 Physics for Engineers I					I	I					
PS 160 Physics for Engineers II	Р	Р			Р	Р	Р	Р	Р	Р	Р
PS 208 Physics II	Р	Р			Р	Р	Р	Р	Р	Р	Р

						Outcome					
PS 210 Physics III aboratory	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
PS 215 Physics I	Р				I	I				Р	Р
PS 216 Physics I Laboratory		Р		Р		Р					
PS 219 Physics III						Р	I		Р		
PS 220 Physics III Laboratory		Р		Р		Р					
PS 250 Physics III for Engineers						Р	I		Р		
PS 253 Physics Laboratory for Engineers		Р		Р		Р					
PS 290 Physics Laboratory Practicum				Р		Р					
PS 301 Astronomy						Р				Р	Р
PS 302 Evolution of Scientific Thought	Р	Р				I	м		м	м	м
PS 303 Modern Physics		Р		Р		Р				Р	Р
PS 305 Modern Physics Laboratory		Р		Р		Р					
PS 320 Classical Mechanics		Р		м	Р	м	Р		Р	Р	Р
PS 400 Senior Physics Laboratory		м	Р				Р				
PS 401 Astrophysics		Р	Р	Р		м	Р				
PS 405 Atomic/Nuclear Physics		Р	Р			м	I				
PS 408 Astrophysics II		Р	Р	Р		м	Р				
Psychology											
PSY 101 Introduction to Psychology											I
PSY 310 Sensation and Perception											Р
PSY 312 Research Analysis in Psychology											Р
PSY 315 Cognitive Psychology											Р
PSY 320 Aviation Psychology											Р
PSY 322 Research Design											м
PSY 335 Physiological Psychology											Р
PSY 340 Industrial-Organizational Psychology											17 P

						Outcome					
PSY 345	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Training and Development PSY 350 Seciel Development											P
PSY 365 Abnormal Psychology											Р
Software Engineering											
SE 300 Software Engineering Practices	Р	Р	Р		Р		Р	Р			
SE 310 Analysis and Design of Software Systems		Р					Р				
SE 320 Software Construction		Р					Р				
SE 410 Formal Software Modeling	Р	Р					Р				
SE 420 Software Quality Assurance	Р	Р	Р				Р				
SE 450 Software Team Project I											
SE 451 Software Team Project II											
Safety Science					1						
SF 201 Introduction to Health, Occupational, and Transportation Safety				Г	I		I	I		I	I
SF 210 Introduction to Aerospace Safety			I	I	I			I		I	I
SF 315 Environmental Compliance and Safety		I	Р				Р				
SF 316 Workers' Compensation, Insurance, and Risk Management		Р									
SF 320 Human Factors in Aviation Safety											Р
SF 330 Aircraft Accident Investigation		Р	м	1	Р	I	Р		1	I	I
SF 335 Mechanical and Structural Factors in Aviation Safety		I		I	Р	I			I	I	I
SF 345 Safety Program Management		м	м		Р	I	Р	Р	I	I	I
SF 350 Aircraft Crash and Emergency Management		I						I		I	I
SF 355 Industrial Hygiene and Toxicology		Р		Р		I		Р			
SF 375 Propulsion Plant Investigation		Р	I				Р				Р
SF 405 Applications in Industrial Hygiene			м	м		Р					м
SF 410 Design of Engineering Hazard Controls		Р	Р	Р	Р	I	Р				18 <b>P</b>

						Outcome					
	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
SF 420 Analysis of Observational Data			P	P	Р		Р				P
SF 435 Aircraft Crash Survival Analysis and Design		м	м	I	Р	м	Р	Р	I	I	м
SF 440 Design of Engineering Hazard Controls II		Р									P
SF 445 System Safety in Aviation			Р	м		м			м		
SF 462 Health, Safety, and Aviation Law		Р	Р	Р	Р					Р	Р
SF 499 Special Topics in Aviation Safety		м		м							
Social Sciences					l						
SS 110 World History		I								I	I
SS 120 U.S. History		I		I				I		I	I
SS 130 History of Aviation in America		I		I				I	I	I	I
SS 302 Evolution of Scientific Thought		Р				Ρ			Р	Р	Р
SS 310 Personality Development		Р				Р			Р	м	Р
SS 311 U.S Military History 1775-1900		Р		Р					Р	м	м
SS 320 Government of the U.S.		Р		Р				Р			м
SS 321 U.S. Military History 1900-Present		Р		Р					Р	м	м
SS 325 International Studies		Р		Р					Р	м	м
SS 326 Russian-U.S. Relations		Р		Р					Р	м	м
SS 331 Current Issues in America		Р		Р				I		м	м
SS 333 U.SAsian Relations		Р		Р					Р	м	м
SS 334 Contemporary Africa and the World		Р		Р						Р	Р
SS 336 The Modern Middle East in World Affairs		Р		Р						Р	Р
SS 337 Globalization and World Politics		Р		Р						Р	Р
SS 340 U.S. Foreign Policy		Р		Р				I	Р	м	м
SS 350 Psychology of Relationships					Р	Р			Р		Р
SS 353 Early U.S. Diplomacy		Р		Р				I	Р	м	м
SS 363 Inter-American Relations		Р		Р				I	Р	м	19 М

						Outcome					
	PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Systems Engineering											
SYS 301 Introduction to Systems Engineering	I	P	Р		I	Р	ļ		I	I	I
SYS 302 System Engineering Design Considerations	Р	Р	Р	I		Р	Р				Р
SYS 303 Optimization in Systems Engineering	I						м				
SYS 304 Systems Engineering in Management, Risk, and Decision Making	I	Р		I	I	Р	м	Р	Р	Р	I
SYS 403 Systems Engineering Life Cycle Costing		I	I	I			Р	Р		I	
SYS 405 Aerospace Systems Guidance and Control	I						Р				
SYS 410 Space Systems and Mission Analysis	Р	Р		Р			Р	Р			
SYS 417 Senior Systems Engineering Project	м	м	Р	м	Р		Р	I			
Applied Meteorology											
WX 353 Thermodynamics of the Atmosphere	Р										
WX 354 Dynamics of the Atmosphere	Р										
WX 427 Forecasting Techniques	м	м	м					I			
WX 456 Advanced Weather Analysis	м	м	м								
WX 480 Environmental Security		м	м							1	
WX 490 Advanced Dynamic Meteorology	м										
WX 491 Advanced Dynamic Meteorology	м										
Legend : I Introd	uced I	P Practiced	м	Mastered							

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#### Assessment Schedule

Courses and Activities Mapped to DB\_Gen\_Ed Program Outcomes

							Outcome					
		PO_01 Mathematics Apply knowledge of college-level mathematics for defining and solving problems.	PO_02 Written Documents Construct effective written documents for technical and non-technical audiences.	PO_03 Oral Communication Communicate ideas in non-written form, such as through oral presentations and visual media.	PO_04 Research Conduct and report research accurately and in accordance with professional standards.	PO_05 Ethical Responsibility Recognize the importance of ethical responsibility both professionally and socially.	PO_06 Scientific Inquiry Identify some of the important results of scientific inquiry in the physical and natural sciences, and use scientific information in critical thinking and decision-making.	PO_07 Communication Technology Use technology to organize and manipulate information to communicate ideas and concepts.	PO_08 Economic Principles Apply economic principles to identify, formulate, and solve problems.	PO_09 Clobal and Societal Impact Demonstrate an awareness and understanding of the values communicated through the humanities.	PO_10 History Describe some of the historical and contemporary issues that affect societies.	PO_11 Human Experience Recognize the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
DB General Educa	ation Assessment Cycl	es		1		I					1	
2014-15 Assessment Cycle		~	~	~		~	~		~		~	
2015-16 Assessment Cycle		~		~		~			~		~	
2016-17 Assessment Cycle		~	~	~			~	~				
2017-18 Assessment Cycle						~	~	~	~			
2018-19 Assessment Cycle										~	~	~
2019-20 Assessment Cycle												
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#### 2017-2018 Assessment Cycle

## Assessment Plan with Results and Proposed Improvements

#### **Result per Measure**

#### DB\_Gen\_Ed Program Outcomes

Outcome

#### **Outcome: PO\_01 Mathematics**

Apply knowledge of college-level mathematics for defining and solving problems.

•	Measure: MA 222 Statistics Exam
	Program level Direct - Exam

Details/Description:	Students will be assessed using an online student assessment of statistical topic knowledge.
Criterion for Success:	The outcome will be considered "attained" via these direct assessments when 80% of the students enrolled achieve a score of 50%.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. Gen Ed Coordinator and program faculty

#### Results for MA 222 Statistics Exam

Summary of Results:

#### CONCLUSIONS

The goal of this study was to determine if MA 222 was satisfactorily meeting the University mandate that its students be "statistically literate". Quantitative reasoning skill was measured using a standardized test on a student's conceptual understanding of statistics after they have taken a college level introductory statistics course, CAOS. This test was administered to a sample of the Spring 2018 students and the results analyzed. It was found that while the composition of the Spring 2018 class (in terms of what college the students were in) was representative of students generally taking MA 222, the sample obtained was biased. The bias in this study was a slight over sampling of the students that were doing better in this course, and could have the effect of possibly producing a larger estimated average. The CAOS test itself was analyzed to insure it was a valid measure of quantitative reasoning skill in the context of this study and was found to be so.

The results obtained suggested that the average CAOS scores for the MA 222 students (49.75%) was less than the national average (52.98%). This difference, although statistically significant, was found to not be practically significant (Cohens D statistic of 0.2 for the difference in the two means), hence we concluded that the MA 222 students have practically the same level of quantitative reasoning skill as other college students after finishing an introductory statistics course, on average.

Moreover, these results should not be taken too literally. The CAOS test only assesses one aspect of a student's knowledge domain, their conceptual understanding of statistics. Quantitative reasoning, however, also involves data analysis skills, such as appropriate use of technology to perform calculations, run tests, and make plots. Given that the percentage of students earning a B or better in the Spring 2018 class (78%) is about that from other years (about 80%), it seems MA 222 is performing up to the University's standards.

From this study we conclude that MA 222 is currently meeting the University general education guidelines, although there is much



room for potentially improving this course.

Results :

Attainment level: Criterion for Success (not met/ met/ exceeded): Not Met

Sample Size/ Number of Students Assessed: Proposed Improvements: 80

Many improvements could be made to MA 222 to improve its quality, some of which are already in the process of being implemented. The 3 main areas I would suggest improving would be the course structure, administration. and content. Course structure and content could both be improved by making the course more inquiry based using data sets relevant to the needs and interests of our students. This approach is almost essential in a course like statistics, where the underlying philosophy is that statistics is really an investigatory process and success depends largely on student engagement. I am currently in the process of addressing this issue by consulting with key faculty members in COAS, COB, and COA to obtain data sets that are relevant to the main themes relevant to most of the students taking MA 222: business, flight, and safety. Course administration could be improved by eventually shifting the class to a "flipped classroom" approach. Next year, I plan to write a CTLE redesign grant that will allow ERAU to use in-house written materials (notes and Canvas based assessments) with our students.

Substantiating Evidence:

DB\_Gen Ed Copy of Data Set for MA 222 (Excel Workbook (Open XML))

<sup>(B)</sup>DB\_GenEd\_MA 222 Assessment Report (Adobe Acrobat Document)

#### **Outcome: PO\_02 Written Documents**

Construct effective written documents for technical and non-technical audiences.

# Measure: SS 328 Writing Assignment Course level Direct - Student Artifact

Details/Description:	Students will submit a formal 2000-word paper that utilizes material from the 9/11 Commission Report to answer particluar questions.
Criterion for Success:	Eighty percent of submissions will demonstrate students' ability to construct effective written documents for technical and non-technical audiences.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. Gen Ed Coordinator and faculty

### Results for SS 328 Writing Assignment

Summary of Results:	Success in this measurement approach indicated that 80% of selected SS 328 student paper would demonstrate the ability to "Construct effective written documents for technical and non-technical audience." Both evaluators judged four of the six papers to show "distinction" and two as meeting the basic criteria. As Figure 3 illustrates, 100% of the papers were assessed as "Satisfactory".
	Discussion of Assessment Results
	Of the selected papers, 100% indicated appropriate author ability to "construct effective written documents for technical and non-technical audience." This



	percentage met the criterion of success delineated in the Assessment Plan.
Results :	Attainment level: Criterion for Success (not met/ met/ exceeded): Met
Sample Size/ Number of Students Assessed:	Of the 30 students enrolled in SS 328, 6 students were randomly selected for the purpose of conducting Gen Ed assessment. The cohort constitutes 17% of students registered for SS 328
Proposed Improvements:	Actions Taken
	Although the assignment allowed most students to demonstrate the ability "construct effective written documents for technical and non-technical audience," the course monitor believes that the master course outline for SS 328 needs to be modified. The General Education program outcomes have been modified as follows: "conduct meaningful research, including gathering information from primary and secondary sources and incorporating and documenting source material in his or her writing." The MCO has thus been modified. Moreover, faculty who teach SS328 will have to develop assignments that requires them to utilize primary and secondary sources.

Substantiating Evidence:

SS 328 Writing Assignment Results '17'18 (Word Document (Open XML))

Communicate ideas in non-written form, such as through oral presentations and visual media.

# Measure: COM 219 Speeches Program level Direct - Student Artifact

Details/Description:	A sample of speeches from the COM 219 courses will be collected. A rubric has been developed and will be used by an assessment committee to score the speeches.
Criterion for Success:	80% of students should receive a rubric score of 2 or higher and no more than 5% will receive a rubric score of 1 or below.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. Gen Ed Coordinator and BS Comm program Coordinator

Supporting Attachments:

COM 219 - Persuasive Speech Rubric (Microsoft Word)

#### Results for COM 219 Speeches

Summary of Results:	Following the Spring term, persuasive
	speeches – the capstone speech in this class -
	- were collected from COM 219 classes for
	assessment. Eight members of the COM 219
	faculty served as reviewers using a rubric,
	authored by COM 219 faculty, that assessed
	both content and delivery. Within those,
	seven elements of content were assessed and
	eight elements of delivery were assessed (see
	attached rubric). Students were assessed a
	score for content, a score for delivery, and an
	overall combined score.
	Students met expectations on both content
	and delivery. In content, 45 of the 52
	students (86.5 percent) scored excellent or
	satisfactory compared to 13.5 percent
	unsatisfactory. In delivery, 49 of 52 students
N.4	



	<ul> <li>(94 percent) scored excellent or satisfactory</li> <li>compared to 6 percent unsatisfactory. In</li> <li>total performance (delivery and content</li> <li>combined) 50 of the 52 students scored</li> <li>excellent or satisfactory (96 percent)</li> <li>compared to 4 percent unsatisfactory.</li> <li>Breaking down into the individual categories,</li> <li>however, reveal some areas that need</li> <li>improvement. Most significantly, 25 percent</li> <li>of the work samples scored unsatisfactory in</li> <li>presenting sufficient evidence to support a</li> <li>claim. We would hope this would be higher.</li> <li>In another category dealing with evidence,</li> <li>one related to sufficient and effective use of</li> <li>sources, 21.2 percent of work samples were</li> <li>unsatisfactory.</li> <li>Two other areas – the attention getter (19.2</li> <li>percent unsatisfactory) and conclusion (19.2)</li> <li> were close to the 80 percent satisfactory</li> <li>cut-off point for meeting expectations, so</li> <li>these two areas will also be focal points in</li> </ul>
	discussions with COM 219 faculty. Delivery scores had far fewer unsatisfactory totals, although eye contact scored 17.3 percent unsatisfactory. Please see attached file for all of the data related to the assessment.
Results :	Attainment level: Criterion for Success (not met/ met/ exceeded): Exceeded
Sample Size/ Number of Students Assessed:	There were 509 students enrolled in COM 219 in the Spring, 2018, semester. A total of 52 persuasive speeches (10.2 percent) were randomly selected for review and were assessed. These speeches were collected from nine different sections of the class (39 percent of the 23 sections taught). Eight members faculty members that teach COM 219 served as reviewers.
Proposed Improvements:	In the Spring semester start-up meeting, COM 219 faculty will meet with course monitor to discuss the results of this assessment, specifically the "issue" and "evidence" content categories and the eye



contact category in delivery. We will discuss best practices in teaching and requiring these skills and a plan for assessing progress of improvement in these areas going forward.

One point of discussion will be how we assess evidence and source integration. It's possible that in the assessment some assessors had different expectations of how many sources should be used as evidence to support a claim. It's also possible that some professors had different requirements for source/evidence on the assignments. We will look into this and work to ensure that our expectations are consistent across sections of the course.

#### Substantiating Evidence:

[] COM 219 Assessment Worksheet (Excel Workbook (Open XML))

#### Outcome: PO\_04 Research

Conduct and report research accurately and in accordance with professional standards.

•	Measure: GCS 306 Poster Project & Presentation Program level Direct - Student Artifact	
	Details/Description:	Outcome will be assessed through submission of end-of-semester poster project and oral presentation.
	Criterion for Success:	Eighty percent of the students demonstrate the ability to conduct and report research accurately

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	and in accordance with professional standards.
Timeframe of Data	Spring 2018
Collection:	
Key/Responsible	Univ. GenEd Coordinator and faculty
Personnel:	

### Results for GCS 306 Poster Project & Presentation

Summary of Results:	Success in this measurement approach indicated that 80% of selected GCS 306 student posters would demonstrate the ability to "Conduct and report research accurately and in accordance with professional standards." The UGEPC and the second evaluator agreed that 4 or nearly 70% of the posters were adequte but disagreed on two other posters. Those posters were taken to the third faculty member as juror who judged both to also not demonstrate competence. As Figure 3 illustrates, 66% of the posters were assessed as "Satisfactory," and 34% were assessed as "Unsatisfactory."
	Measurement Approach:
	Nearly 70% of the selected posters indicated appropriate author ability to "Conduct and report research accurately and in accordance with professional standards."
	This percentage does not meet the criterion of success delineated in the Assessment Plan. The Course Monitor and faculty member evaluating these portfolios found the inadequate portfolios to largely resulted from students not complying with instructions to include information about their research including a work cited or reference page or bibliography. A cursory glance at other posters provided but not assessed revealed that all other students fulfilled this aspect of the assignment so the two posters judged as failure might have been an anomaly.

Results :	Attainment level: Criterion for Success (not met/ met/ exceeded): Not Met
Sample Size/ Number of Students Assessed:	In spring 2018, 302 students enrolled in the entire cohort of upper-level SS and GCS courses. Of this population, 25 students enrolled in GCS 306, or 9% of all SS/GCS students and 5% of all GCS students, as can be seen in Figure 1, in the attached GCS 306 Assessment Report.
	Of the 25 students enrolled in GCS 306, 6 students were randomly selected for the purpose of conducting Gen Ed portfolio assessments. The cohort constitutes 19% of students registered for GCS 306, as seen in Figure 2
Proposed Improvements:	Based upon the results of this measurement approach, the Course Monitor recommends that a calibration session occur prior to future assessments to ensure that all evaluators are in agreement as to what is meant by the criteria and the expectations of the assignment. There also should be discussion as to whether the poster assignment is appropriate for assessment of this specific criteria.

#### Substantiating Evidence:

GCS 306 Assessment Report (Word Document (Open XML))

Outcome: PO\_07 Communication Technology

Use technology to organize and manipulate information to communicate ideas and concepts.

Measure: HS 235 Website Project
 Program level Direct - Student Artifact

Details/Description:	Students will create a website and then access each other's websites through their Firewalls (covers HTML, Firewalls, IDS, IP addressing, Subnets, etc.)
Criterion for Success:	At least 70% of submissions will demonstrate acceptable use of software to produce wesbites and access websites.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. GenEd Coordinator and faculty

Results for HS 235 Website Project

Summary of Results:	Program Coordinator made changes to the course assignment. Unable to gather results for AY '17'18 will reassess this outcome and measure in Spring 2019 instead.
Results :	Attainment level: Criterion for Success (not met/ met/ exceeded): Not Met
Sample Size/ Number of Students Assessed:	N/A
Proposed Improvements:	We will reassess this outcome and measure in Spring 2019 instead.

### Outcome: PO\_09 Global and Societal Impact

Demonstrate an awareness and understanding of the values communicated through the humanities.

Program level Direct - Student	Artifact
Details/Description:	To assess research, HU 140s faculty will develop, revise, and apply a rubric to a random sampling of 10% of student hallmark research essays complete in Spring 2018. HU140.02/.03: Western Humanities I: Antiquity and the Middle Ages HU141.01/.03: Western Humanities II: Renaissand to Postmodern HU142.02/.04/HYB.01/HYB.03: Studies in Literature HU143.01/.03: Introduction to Rhetoric HU144.01/.02: Studies in Art HU145.04/.06/.07/HYB.01: Themes in the Humanities HU146.01/.02: Studies in Music Appreciation
Criterion for Success:	80% of surveyed students will will receive an overall rubric score [TBD} or above and no more than 5% will receive an overall rubric score of les than 1.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. GenEd Coordinator and HU faculty

Results for HU 140 Courses Research Essays

Summary of Results: The Gen. Ed. Assessment Plan stipulated that 80% of selected student artifacts would demonstrate an awareness and understanding of the values communicated through the humanities. Artifacts would have to score Introductory or higher on SLO#2 and SLO#3. To determine whether this was achieved, the Monitor devised a scale for raw scores based on the rubric results, depicted in Figure 6.

Figure 6: Artifact Raw Score by Category



(see 18\_GenEd\_Assessment\_HU140.docx attachment) Category Raw Score Scale Novice 0 - .69 Introductory .7 - 1.3 Practicing 1.4 - 2.0

Based on this raw score scale, a total of 78% artifacts were assessed as Introductory or Practicing for SLO#2: Analysis of an Artifact; 22% of the artifacts from HU 140s series were assessed as Novice for SLO#2. As illustrated in Figure 7, category results show that the majority of artifacts achieved Introductory, except in HU 146. HU 145 resulted in the highest percentage of Practicing scores and the lowest percentage of Novice scores, suggesting that these students more effectively analyzed a humanities artifact.

Based on the raw score scale, a total of 77% artifacts were assessed as Introductory or Practicing for SLO#3: Understanding Context. 33% of the artifacts from HU 140s series were assessed as Novice. (See Figure #7 - 18\_GenEd\_Assmt\_HU140.docx attachment)

Attainment level: Criterion for Success (not met/ met/ exceeded): Not Met

Of the 695 students enrolled in Spring 2018 HU 140s courses, 90 student essays were randomly selected to be used as artifacts in direct assessment. Student artifacts represent 12.95% of students registered for HU 140s courses, as seen in Figure 2 (see 18\_GenEd\_Assmt\_HU140.docx attachment).

Figure 2: DA Sample Size

Artifact collection and dissemination was conducted by faculty, the Monitor, and an administrative assistant. HU 140s faculty

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Results:

Sample Size/ Number of

Students Assessed:

required all enrolled students to upload their hallmark research essay to Canvas, and an administrative assistant randomly downloaded five essays from 18 sections of randomly selected HU courses: two sections of HU 140, 141, 143, 144, and 146 and, due to higher enrollments, four sections from both HU 142 and 145. The assistant removed identifying information and combined 10 essays from each HU course into one PDF. The Monitor sent designated assessors their assigned artifacts and a link to a Google Form. on which assessors would record their scores. Each set of ten artifacts were evaluated by two designated, calibrated assessors using an agreed upon rubric.

Direct Assessment Measurement Based upon the results of this measurement, reviewed in conjunction with HU faculty, the Course Monitor recommends that faculty improve upon existing writing instruction that will enable students to better analyze humanities artifacts and more effectively communicate their awareness and understanding of the humanities in course research assignments. Other recommendations include:

**Proposed Improvements:** 

• Altering writing assignment prompts • Improving HU 143 and HU 146 prompts to include more emphasis on analysis of the artifact

Adding more emphasis on context in HU
 142 prompts

 Revising HU 141 and HU 144 prompts to better balance emphasis on context with analytical opportunities

• Including another category on the rubric to lessen the faculty-stated gap between Introductory and Novice

• Improving calibration sessions to increase inter-rater reliability and ensure all data sets are valid

Moving collection date closer to



calibration session date (Assessors with the most inconsistent scores completed assessment between 38 and 52 days after calibration sessions.)

 Adding calibration sessions if assessment has not been completed 14 days after initial session

• Revising wording of SLO#2 to focus on more specifically on the analysis of the humanities artifact

• Clarifying wording of SLO#3, as this SLO revealed higher inconsistency rate between raters

• Improving security measures for data collection

Moving assessment completion to
 SharePoint forms, rather than Google Forms
 Posting artifacts on SharePoint, rather
 than emailing PDFs of artifacts

Indirect Assessment Measurement Based upon the results of this measurement approach, reviewed in conjunction with HU faculty, the Course Monitor recommends that faculty continue with the strides that they have made towards improving student understanding of the course learning outcomes and how they relate to course materials, discussions, and assignments. Other recommendation include:

• Improving response rates for surveys • Requesting professors with response rates below 80% provide students with incentives to complete the survey statements (11 out of 15 instructors had a response rate below 80%, with 7 having a response at or below 70%)

• Clarifying wording for survey statement #2 "In my HU 140s course, I learned about some historical and contemporary issues that affect societies through discussions, texts, or assignments"

Replacing the word "learned" with
 "analyzed" to better gauge whether students
 did more than superficially learn about



issues

Substantiating Evidence:

[] 18\_GenEd\_Assessment\_HU140s.docx (Word Document (Open XML))

# Measure: HU 140 End of Course Evaluations Program level Indirect - Survey

Details/Description:	<ul> <li>Faculty members teaching HU 140s will ask</li> <li>students enrolled in the course to respond to a</li> <li>survey administered at the end of the term via</li> <li>Evaluation Toolkit.</li> <li>HU140.02/.03: Western Humanities I: Antiquity</li> <li>and the Middle Ages</li> <li>HU141.01/.03: Western Humanities II: Renaissance</li> <li>to Postmodern</li> <li>HU142.02/.04/HYB.01/HYB.03: Studies in</li> <li>Literature</li> <li>HU143.01/.03: Introduction to Rhetoric</li> <li>HU145.04/.06/.07/HYB.01: Themes in the</li> <li>Humanities</li> </ul>
	HU146.01/.02: Studies in Music Appreciation
Criterion for Success:	80% of surveyed students will report that the course texts, discussions, and assignments have increased their recognition of the complexity of human experience from a variety of perspectives, for example, cultural, aesthetic, social, technological, scientific, psychological, philosophical, and historical.
Timeframe of Data Collection:	Spring 2018
Key/Responsible Personnel:	Univ. GenEd Coordinator and HU faculty

Summary of Results:	A survey instrument was developed to indirectly measure whether students achieved the General Education Program Outcomes #9 "Demonstrate an awareness and understanding of the values communicated through the humanities." The survey instrument was added to final course evaluations and distributed via Evaluation Toolkit. The measure included the below Likert-survey statements that best addressed Gen. Ed. PO #9: • In my HU 140s course, I learned about some historical and contemporary issues that affect societies through discussions, texts, or assignments. • In my HU 140s course, I learned about the complexity and diversity of human experience from a variety of perspectives and/or across time periods. An overwhelming majority of students (96.35%) strongly agreed or agreed that their HU course provided them with the opportunity to learn about some issues that influence societies. The majority of students (94.81%) strongly agreed or agreed that their HU 140s course provided them with the opportunity to learn about the complexity and diversity of the human experience. When these responses are collated, the majority of students claim to have learned about contextual cultural, historical, and social aspects that would inform values. A total of 96% of the respondents strongly agreed or agreed that they achieved this Gen. Ed. PO.
Results : Sample Size/ Number of	Attainment level: Criterion for Success (not met/ met/ exceeded): Exceeded Of the 695 students enrolled in HU 140s
Sample Sizer Number Of	

series courses, 520 completed the survey for

a response rate of 74.82%.

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Students Assessed:

Proposed Improvements:

Based upon the survey results, the Course Monitor recommends that faculty continue with the strides that they have made towards improving student understanding of the course learning outcomes and how they relate to course materials, discussions, and assignments.

Other recommendation include:

• Improving response rates for surveys (11 out of 15 instructors had a response rate below 80%, with 7 having a response at or below 70%)

• Clarifying wording for survey statement #2 "In my HU 140s course, I learned about some historical and contemporary issues that affect societies through discussions, texts, or assignments"

1. Replacing the word "learned" with "analyzed" to better gauge whether students did more than superficially learn about issues

• Working with IR

o Lessening survey fatigue

o Ensuring long-term indirect assessment protocols

o Compiling results with easier-to-access data and created charts

• Collaborating with other Gen. Ed.

programs at Daytona Beach, Prescott, and Worldwide

o Ensuring student perceptions are being measured similarly across programs and campuses

o Using similar survey statements for programmatic assessment

Substantiating Evidence:

EOC\_20172018\_Indirect\_Assessment\_HU140s\_series (6).pdf (Adobe Acrobat Document)

### **Overall Reflection**

No text specified

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