UNIVERSIDAD ANA G. MÉNDEZ UAGM

Bachillerato en Ciencias en Ingeniería Mecánica
Bachelor of Sciences in Mechanical Engineering
134 créditos

Academic Division: Engineering, Design & Architecture **Department:** Engineering **Effective:** August 2021

SECUENCIAL CURRICULAR

Primer Año

Primer Semestre				Segundo Semestre			
Curso	Créditos	Aprobado	En curso	Curso	Créditos	Aprobado	En curso
SCGS 200	3			ENGI 160	3		
MATH 152+*	4			MATH 221+	4		
HIGS 201	3			CHEM 203+	4		
ENGS 152*	3			ENGS 153	3		
SPGS 152*	3			SPGS 250	3		
Total	**16**			**Total**	**17**		

Segundo Año

Primer Semestre				Segundo Semestre			
Curso	Créditos	Aprobado	En curso	Curso	Créditos	Aprobado	En curso
ENGI 122	3			ENGI 244	3		
ENGI 280	3			ENGI 233	3		
MATH 222+	4			MATH 223	4		
PHSC 215+	4			MATH 395	3		
INGS 201	3			PHSC 216+	4		
Total	**17**			**Total**	**17**		

Tercer Año

Primer Semestre				Segundo Semestre			
Curso	Créditos	Aprobado	En curso	Curso	Créditos	Aprobado	En curso
ELEN 301	3			ENGI 319	1		
ELEN 302	1			ENGI 333	1		
ENGI 305	3			ENGI 406	1		
ENGI 318	3			MEEN 340	1		
MEEN 312	3			MEEN 420	3		
MEEN 320	3			MEEN 421	3		
MEEN 418	1			MEEN 425	3		
				HUGS 101	3		
Total	**17**			**Total**	**18**		

Cuarto Año

Primer Semestre				Segundo Semestre			
Curso	Créditos	Aprobado	En curso	Curso	Créditos	Aprobado	En curso
ENGI 478	3			MEEN 475	1		
MEEN 460	3			MEEN 481	3		
MEEN 461	1			MEEN 485	3		
MEEN 464	3			MEEN Electiva II	3		
MEEN Electiva I	3			SOGS 202	3		
SOGS 201	3			HUGS 102	3		
Total	**16**			**Total**	**16**		

Notas importantes:

1. *Todo estudiante será matriculado de acuerdo a los resultados de la prueba de ubicación o resultados del *College Board*.
2. + Curso con laboratorio.
3. The General Education component of all bachelor degrees in engineering is different from other programs because of the Engineering Accreditation Commission ABET requirements. Engineering competencies in mathematics start at Calculus level, and competencies in science require an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (ABET's Student Outcome 1). Also, they need to be able to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions (ABET's Student Outcome 6). These exceed compliance levels of the COMPETENT competency level for both quantitative and scientific reasoning.
4. New students, without previous university experience, are required to take the Student Induction and Leadership Seminar (SIGS 100) and it will be offered the week before classes begin. Late registration students must complete this seminar during the academic semester.
5. Developmental courses to develop academic skills for students entering with some deficiency: MATH 121 Intermediate Algebra (4 credits) and MATH 151 Pre-Calculus (4 credits).
6. Subject to change.

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CONTENIDO CURRICULAR

Componente de Educación General - 37 créditos

Cursos	Créditos	Título	Prerrequisito
INGS 201	3	Introducción a las destrezas de información, investigación y redacción	
ENGS 152*	3	Fundamentos de comunicación oral, lectura y redacción I	
ENGS 153	3	Fundamentos de comunicación oral, lectura y redacción II	ENGS 152*
SPGS 152*	3	Fundamentos de lectura y escritura	
SPGS 250	3	Técnicas de escritura	SPGS 152*
HIGS 201	3	Puerto Rico historia y cultura	
SOGS 201	3	El ser humano y la conciencia social	
SOGS 202	3	Estado-gobierno y el ser humano	SOGS 201
HUGS 101	3	Cultura mundial I	
HUGS 102	3	Cultura mundial II	HUGS 101
MATH 152+*	4	Pre-Calculo II	
SCGS 200	3	Ciencias, tecnología y sociedad	

Componente Medular - 46 créditos

Cursos	Créditos	Título	Prerrequisito
CHEM 203+	4	General Chemistry I	MATH 151+ or higher
ENGI 122	3	Introduction to Computer Programming	MATH 152+
ENGI 160	3	Engineering Graphics	MATH 152+
ENGI 233	3	Statics	PHSC 215+
ENGI 280	3	Data Analysis	MATH 221+
ENGI 478	3	Fundamentals of Engineering	ENGI 280, MEEN 420 or next to last semester status
ELEN 301	3	Electrical Networks I	PHSC 216+
ELEN 302	1	Electrical Networks I Laboratory	Co-req. ELEN 301
PHSC 215+	4	Physics I	MATH 221+
PHSC 216+	4	Physics II	PHSC 215+
MATH 221+	4	Calculus I	MATH 152+
MATH 222+	4	Calculus II	MATH 221+
MATH 223	4	Calculus III	MATH 222+
MATH 395	3	Differential Equations	MATH 222+

Componente de Concentración - 45 créditos

Cursos	Créditos	Título	Prerrequisito
ENGI 244	3	Engineering Materials	CHEM 203+, PHSC 215+
ENGI 305	3	Fluid Mechanics	ENGI 233, MATH 395
ENGI 318	3	Strength of Materials	ENGI 233
ENGI 319L	1	Materials Testing Laboratory	ENGI 244, ENGI 318
ENGI 333L	1	Machine Shop Laboratory	ENGI 160, ENGI 244, ENGI 318
MEEN 312	3	Kinematics of Mechanisms	ENGI 233
MEEN 320	3	Thermodynamics I	CHEM 203+, PHSC 216+
MEEN 340	3	Computer Aided Design	ENGI 160, MATH 221+
ENGI 406	1	Fluid Mechanics Laboratory	ENGI 305, MEEN 418
MEEN 418	1	Experimental Methods	PHSC 216+, ENGI 122
MEEN 420	3	Heat Transfer	ENGI 305, MEEN 320
MEEN 421	3	Thermodynamics II	ENGI 305, MEEN 320
MEEN 425	3	Design of Machine Elements	ENGI 318
MEEN 475	1	Multidisciplinary Experience in Industry Laboratory	MEEN 418, MEEN 420, MEEN 425 or last semester status

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Componente de Concentración - 45 créditos

Cursos	Créditos	Título	Prerrequisito
MEEN 460	3	Control of Dynamic Systems	ELEN 301, ELEN 302, ENGI 233, MATH 395
MEEN 461	1	Controls Laboratory	ELEN 301, ELEN 302, ENGI 233, MATH 395, MEEN 460 Co-req.
MEEN 481	3	Mechanical Systems Design	MEEN 340, MEEN 425 or last semester status
MEEN 485	3	Thermal System Design	MEEN 420, MEEN 421 or last semester status
MEEN 464	3	Mechanical Vibrations	ENGI 233, MATH 395

Electivas Dirigidas - 6 créditos

Cursos	Créditos	Título	Prerrequisito
MEEN 465	3	Vehicle Dynamics Fundamentals	MEEN 425
MEEN 482	3	Failure of Materials in Mechanical Design	MEEN 425
MEEN 484	3	Corrosion in Metals	MEEN 425
MEEN 489	3	Air Conditioning	MEEN 420, MEEN 421
MEEN 497	3	Special Problems	Chairperson's permission
MEEN 498	3	Undergraduate Research I	Chairperson's permission
MEEN 499	3	Undergraduate Research II	Chairperson's permission
INNO 300	3	Sustainable Innovation (Must register in entrepreneurship minor)	
INNO 303	3	Product Development, Prototyping and Idea Validation (Must register in entrepreneurship minor)	INNO 300
MEEN 641	3	Sustainable Energy	Senior status & Chair's permission
MEEN 462	3	Grid Integration	Senior status & Chair's permission
MEEN 643	3	Energy Management	Senior status & Chair's permission
MEEN 644	3	Photovoltaic Energy Conversion	Senior status & Chair's permission
MEEN 646	3	Solar Refrigeration and Air Conditioning	Senior status & Chair's permission
MEEN 648	3	Advanced Topics in Alternate Energy	Senior status & Chair's permission
MEEN 649	3	Independent Study in Alternative Energy	Senior status & Chair's permission
MEEN 651	3	Ocean Energy	Senior status & Chair's permission
MEEN 652	3	Biofuels	Senior status & Chair's permission
MEEN 502	3	Aircraft Design	Senior status & Chair's permission
MEEN 503	3	Fundamentals of Aerospace Engineering	Senior status & Chair's permission
MEEN 612	3	Aerospace Structural Analysis	Senior status & Chair's permission
MEEN 613	3	Flight Mechanics	Senior status & Chair's permission
MEEN 614	3	Propulsion Systems	Senior status & Chair's permission
MEEN 615	3	Aerodynamics II	Senior status & Chair's permission
MEEN 622	3	Compressible Flow	Senior status & Chair's permission
MEEN 624	3	Combustion	Senior status & Chair's permission
MEEN 628	3	Advanced Topics in Aerospace Engineering	Senior status & Chair's permission
MEEN 629	3	Independent Study in Aerospace Engineering	Senior status & Chair's permission
MEEN 501	3	Finite Elements Analysis	Senior status & Chair's permission
MEEN 601	3	Advanced Mathematics	Senior status & Chair's permission
MEEN 602	3	Advanced Mechanics of Material	Senior status & Chair's permission
MEEN 603	3	Advanced Fluid Mechanics	Senior status & Chair's permission
MEEN 604	3	Aerodynamics I	Senior status & Chair's permission
MEEN 611	3	Composite Materials	Senior status & Chair's permission
MEEN 616	3	Introduction to Aeroelasticity	Senior status & Chair's permission
MEEN 621	3	Boundary Layers	Senior status & Chair's permission
MEEN 623	3	Multi-scale Turbulence	Senior status & Chair's permission
MEEN 645	3	Wind Energy	Senior status & Chair's permission
MEEN 671	3	Advanced Heat Conduction	Senior status & Chair's permission

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Electivas Dirigidas - 6 créditos

Cursos	Créditos	Título	Prerrequisito
MEEN 673	3	Computational Fluid Dynamics (CFD)	Senior status & Chair's permission
MEEN 674	3	Micro and Nano Heat Transfer	Senior status & Chair's permission
MEEN 675	3	MEMS and Energy Harvesting	Senior status & Chair's permission
MEEN 676	3	Design Optimization	Senior status & Chair's permission
MEEN 678	3	Advanced Topics	Senior status & Chair's permission
MEEN 679	3	Independent Study	Senior status & Chair's permission
MEEN 681	3	Introduction to Biomechanics	Senior status & Chair's permission
MEEN 682	3	Systems Engineering	Senior status & Chair's permission
MEEN 683	3	Friction, Wear and Lubrication	Senior status & Chair's permission
MEEN 684	3	Advanced Tribology	Senior status & Chair's permission
MEEN 685	3	Applied Modern Control	Senior status & Chair's permission

EVALUACIÓN ACADÉMICA PRELIMINAR DISCUTIDA CON EL ESTUDIANTE.
LA MISMA PUEDE ESTAR SUJETO A CAMBIOS.

Total de créditos:
_____ Aprobados
_____ Por aprobar

Firma del estudiante: _____ Fecha: _____

Firma del Consejero Académico: _____
Fecha: _____