



2022



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We know what we do. We do it well. We can prove it!

	Course Code	Course Title	Pre and/or Co-Requisites	Cds	Course Code	Course Title	Pre and/or Co-Requisites	Cds	
1ST YEAR	QUIM3131	General Chemistry I	Co-Req: QUIM 3133 & (MATE 3171 or MATE 3005)	3	MATE3031	Calculus I	MATE 3172 or MATE 3005	4	
	QUIM3133	General Chemistry Lab I	Co-Req: QUIM 3131 & (MATE 3171 or MATE 3005)	1	INGE 3016	Algorithms & Comp. Prog.		3	
	~INGL ____	Note: There are 3 sequences to complete the English requirements. Read details at the bottom.			3	~INGL ____	Note: There are 3 sequences to complete the English requirements. Read details at the bottom.		
	^ESPA3101 or ESPA 3131	Basic Spanish I or Academic Literacy I		3	EDFI ____	Physical Education Elective		1	
	*INME3809	Creative Design I	Note: If you are a transfer student, read details at the bottom regarding this course.	3	^ESPA3102 or ESPA 3132	Basic Spanish II or Academic Literacy II	ESPA 3101 or ESPA 3131	3	
	SOHU	Socio-humanistic elective. Scan the QR code at the bottom of second page to see the options available.			3	**FILO ____	**Must be an ETHIC course from the list provided at the bottom of this document.****		
				16				17	
2ND YEAR	MATE 3032	Calculus II	MATE 3031	4	MATE 3063	Calculus III	MATE 3032	3	
	FISI 3171	Physics I	MATE 3031	4	FISI 3172	Physics II	FISI 3171	4	
	FISI 3173	Physics Lab I	Co-Req: FISI 3171	1	FISI 3174	Physics Lab II	FISI 3173 Co-Req: FISI 3172	1	
	~INGL ____	Note: There are 3 sequences to complete the English requirements. Read details at the bottom.			3	~INGL ____	Note: There are 3 sequences to complete the English requirements. Read details at the bottom.		
	INGE 3031	Eng. Mechanics Statics	MATE 3031	3	INGE 3032	Eng. Mech. Dynamics	INGE 3031 & FISI 3171	3	
					3	INME 4108	Materials Science & Eng.	QUIM 3131 + 3133 & FISI 3171	3
				15				17	
3RD YEAR	MATE 4009	Ordinary Diff. Equations	MATE 3063	3	INGE 4015	Fluid Mechanics	INGE 3032 & MATE 3063	3	
	INME 4109	Materials Science & Engineering Lab	INME 4108	1	INME 4011	Design of Machine Elements I	(INGE 4019 or INGE 4012) & (INME 4107 or INME 4108)	3	
	INME 4001	Thermodynamics I	QUIM 3131 + 3133 & FISI 3172 + 3174	3	INME 4002	Thermodynamics II	INME 4001	3	
	INGE 4019	Introduction to Mechanics of Materials	INGE 3031 & MATE 3063	4	INEL 4201	Electronics I	INEL 3105 & FISI 3172	3	
	INME 4005	Mechanism Design	INGE 3032 & INGE 3016	3	INME 4055	Manufacturing Processes	INME 4107 or INME 4108	3	
	INEL 3105	Electrical Systems Analysis I	MATE 3032 & INGE 3016 Co-Req: FISI 3172 & MATE 3063	3				15	
				17				15	
4TH YEAR	INME 4210	System Dynamics and Controls I	MATE 4009, (INEL 3105 or INEL 4075), INGE 3016, INME 4005 & INME 4001	3	INME 4003	Design Thermal Fluid Systems	INME 4001 & INME 4015	3	
	INME 4012	Design of Machine Elements II	INME 4011	3	INME 4220	System Dynamics and Controls II	INME 4210	3	
	INME 4015	Heat Transfer	MATE 4009, INGE 3016, (INME 4001 or INME 4045) & (INGE 4015 or INGE 4010)	3	>INME ____	Professional Elect. Must be in an Engineering course from a pre-defined INME Computational elective list. (See list of options on Page 2)			
	INGE 4016	Fluid Mechanics Lab	Co-Req: INGE 4015	1	INME 4237	Mechatronics Lab	ININ 4010, INME 4210 & (INEL 4201 or INEL 4076)	2	
	INME 4056	Manufacturing Processes Lab	INME 3809 or INGE 3809 or INGE 3011 Co-Req: INME 4055	1	FREE ELECT.			3	
	ININ 4010	Probability and Statistics for Engineers	MATE 3032 & INGE 3016	3	EDFI ____	Physical Education Elective		1	
					14				15
5TH YEAR	INME 4238	Thermal Science Lab	INME 4237 & INME 4002 Co-Req: INME 4003	2	INME 4157	Engineering Design (Capstone)	INME 4056, INME 4012, INME 4003, INME 4220 & ININ 4015 Co-Req: INME 4238	4	
	**SOHU	Socio-humanistic elective. Scan the QR code at the bottom of second page to see the options available.			3	FREE ELECT.		3	
	>INME ____	Professional Elective (See list of options on Page 2)			3	FREE ELECT.		3	
	ININ 4015	Engineering Economic Analysis	MATE 3032	3					
	FREE ELECT.				3				
				14				10	

TOTAL CREDITS: 150 CREDITS

~Students admitted to the **Basic English Sequence**, must take 12 credits in: INGL 3101, 3102, 3201, and INGL 3209 (Communication in Science).

~Students admitted to the **Intermediate English Sequence**, must take 12 credits in: INGL 3103, 3104 plus INGL 3236 (Technical Communication) OR INGL 3250 (Public Speaking) plus 3 credits in English electives from a list. See the Counselor for details.

~Students that approved the **Advanced** Placement Test known as "Prueba de Nivel Avanzado or PNA" with 4 or higher in the English part, are accredited with 6 credits in English and **MUST** only approve: INGL 3211 & 3212. Students with a score of 3 on the Advanced Placement Examination will be placed in INGL 3103 (Intermediate English).

^For Spanish, students that approved the Advanced Placement Test known as "Prueba de Nivel Avanzado or PNA" with 4 or higher, are accredited with 6 credits in Spanish and DO NOT NEED to approve any more credits in Spanish. Students with a score of 3 on the Advanced Placement Examination or students that did not take that test, will be placed and must approve ESPA 3131 and ESPA 3132 (Academic Literacy I & II) to complete the Spanish requirements of this curriculum. The equivalent ESPA 3101 and 3102 (Basic Spanish I & II) will be accepted only from transfer students. Students admitted from High School to our program that need to take Spanish, must approve ESPA 3131 and ESPA 3132.

***IMPORTANT INFORMATION FOR TRANSFER STUDENTS OR STUDENTS JOINING THIS CURRICULUM:** (1) If you are a transfer student or an INME student that joined this curriculum, and took INGE 3011 (2 crs.), you will need to enroll in INME 3815 (1 cr.) to cover the deficiency in the number of credits and to have the equivalent of INME 3809. (2) If you took INME 5997 (3 crs.) before joining this curriculum, it will be counted as a Free Elective. (3) If you are a transfer student **BUT** took INGE 3011 (2 crs.) plus INME 3810 (2 crs.), you will need to enroll in INME 3815 (1 cr.) to cover the deficiency in the number of credits and to have the equivalent of INME 3809. **IMPORTANT:** (4) If you took INME 3810 and QUIM 3132 and QUIM 3134, these courses will be counted as a Free Electives, too. (5) If you took ECON 3021, this course will be counted as an elective course in SOHU. Always ask your counselor.

**** Three (3) of the nine (9) credits in socio-humanistics must be from the following list of ETHIC courses: ADMI 3009, or FILO 3155, 3156, 3185, 4025, 4026, 4027, 4045, 4046, 4160 or SOCI 3007, 3010, 4027, 4157 or 5015. These courses do not have any prerequisites. The other six (6) of the nine (9) credits in Socio-Humanistic Electives must be selected from the list of the approved courses provided for engineering students which is available at the College of Engineering's Academic Affairs Office website or by scanning the QR code on Page 2.**

>In order to obtain the BSME, it is required that students take 6 credits in Professional Electives, from which a **MINIMUM of 3 credits must be in INME Computational Electives**. See page 2 for more information and course alternatives. Always ask your counselor.

For more information, please contact ME's Academic Advisors

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COMPUTATIONAL ELECTIVE COURSES (Select a **MINIMUM OF 3 CREDITS** from this list)

COURSE CODE	COURSE TITLE	PRE-REQUISITES	CDS.
INME 4540	Introduction to Ground Vehicle Dynamics	INGE 3016 OR CIIC 3015 & INGE 3032 OR 3035 OR DIR	3
INME 5510	Introduction to Finite Element Modeling	INME 4011 & INGE 3016	3
INME 5520	Introduction to Computational Fluid Dynamics	INME 4015	3
INME 5530	Introduction to Multibody Dynamics Modeling (MBD)	INME 4005	3

PROFESSIONAL ELECTIVE COURSES (Select a **MAXIMUM OF 3 CREDITS** from this list)

COURSE CODE	COURSE TITLE	PRE-REQUISITES	CDS.
INME 4006	Machinery Dynamics	MATE 4009 & INME 4005	3
INME 4018	Energy Conversion	INME 4002, INME 4015 & INEL 4076	3
INME 4019	Energy Management and Audit	INME 4001 OR INQU 4011	3
INME 4027	Energy Installation Engineering	INME 4002 & INME 4015	3
INME 4035	Refrigeration and Air Conditioning	INME 4002 & INME 4015	3
INME 4037	Internal Combustion Engines	INME 4015	3
INME 4039	Mechanical Eng. Practice (Used for research internships outside UPRM)	DIR	3
INME 4058	Computer Aided Design	INME 4012 & INME 4015	3
INME 4065	Product Design	DIR (and interview with the professor in charge)	3
INME 4705	Applied Aerodynamics	INGE 4010 (or 4015 + 4016), INGE3016 & MATE 4009	3
INME 4707	Gas Turbine Thermodynamics and Propulsion	INME 4002 OR 4045, INGE 4010 (or 4015 + 4016), INGE 3016 & MATE 4009 Co-Req: INME 4002	3
INME 4709	Aircraft Performance	INGE 3032 OR 3035 & MATE 4009 & INGE 3016	3
INME 4717	Introduction to Aircraft Structural Analysis	INGE 3032 OR 3035 & MATE 4009 & INGE 3016	3
INME 4810	Design and Automation Techniques	INME 4055	3
INME 4850	Introduction to Robotics	INME 4011	3
INME 4995	Eng. Practice for Coop Students (Free elective if taken once)	DIR	0-9
INME 4998	Undergraduate Research (Used for research internships within UPRM)	DIR	1-6
INME 5005	Lubrication	DIR	3
INME 5007	Solar Energy Application	INME 4015 or INQU 4001	3
INME 5008	Corrosion	INME 4107	3
INME 5010	Design Thinking	30 or more credits approved	3
INME 5015	Selected Topics in Mechanical Engineering	DIR	3
INME 5018	Materials Failure Analysis	INME 4012 & INME 4107	3
INME 5025	Metals Fatigue	INME 4107	3
INME 5105	Fundamentals of Nuclear Science and Engineering	FISI 3172 & MATE 4009 OR 4145	3
INME 5106	Nuclear Power Plant Engineering	FISI 3172 & MATE 4009 OR 4145	3
INME 5107	Radiological Safety and Radioactive Waste Management	FISI 3172 & MATE 4009 OR 4145	3
INME 5707	Gas Turbine System Operation	INME 4002 OR 4045, INGE 3016 & INME 4707	3
INME 5717	Aircraft Structural Analysis and Design	INME 4717 & INGE 4019 OR 4012	3
INME 5995 / INME 5996	Special Projects: Minibaja; Fórmula; RUMAir; Solar Car; Moonbuggy; DART; PACE; DRACO; Loxodon; Vex; RUMblebots; HPVC; RoboBoat; RUMarino; UAV's, among others	DIR	1-6
INME 6XXX	These topics: Advanced Thermo; Biomaterials; BioMEMS; Biomedical Engineering; Continuum Mechanics; Design of Microfluidic Systems; Engineering Design; Finite Element Analysis; Fracture Mechanics; Principles of Electronic Packaging; Vibrations, among others	DIR	1-6

In order to obtain the BSME, it is required that students take 6 credits in Professional Electives, from which a **MINIMUM** of 3 credits must be in Computational Electives. INME 4995 can be used as a Professional Elective if taken at least twice (one of these terms during semester period).

SCAN THE QR CODES FOR MORE INFORMATION

To download a PDF version of this curriculum, scan this QR code:



To see the list of the elective courses in SOHU, scan this QR



For contact information about our Student's Associations and/or Special Projects, scan this QR



Ask about our Aerospace Engineering and Nuclear Engineering Minors!

For more information, please contact ME's Academic Advisors

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