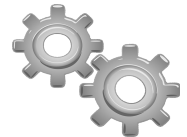




MECHANICAL ENGINEERING DEPARTMENT

University of Puerto Rico at Mayagüez

1913-2013: 100 Years of Excellence in Mechanical Engineering Education.



DESIGN ELECTIVE COURSES (A MINIMUM OF 6 CREDITS should be taken in Design Electives)

CODE	COURSE TITLE	PRE-REQUISITES	CDS.
INME 4003	Design of Thermal and Fluid Systems	INME 4001 & INME 4015	3
INME 4027	Energy Installation Engineering	INME 4002 & INME 4015	3
INME 4035	Refrigeration and Air Conditioning	INME 4002 & INME 4015	3
INME 4058	Computer Aided Design	INME 4012 & INME 4015	3
INME 4065	Product Design	DIR	3
INME 4709	Aircraft Performance	INGE 3032 OR 3035 & MATE 4009 & INGE 3016	3
INME 4717	Design and Analysis of Aircraft Structures	INGE 3032 OR 3035 & MATE 4009 & INGE 3016	3
INME 4810	Design and Automation Techniques	INME 4055	3
INME 5717	Advanced Design of Aircraft Structures	INME 4717 & INGE 4019 OR 4012	3
INME 599X	SAE Projects (Minibaja, Fórmula, RUMAir, Solar Car), Moonbuggy; Dart; PACE; Vex RUMblebots; Human Powered Vehicle (HPV); RoboBoat; RUMarino; UAV's, and more!	DIR	1-6
INME 5015	These topics: BioMEMS; Design of Microfluidic Systems; Principles of Electronic Packaging; Vehicle Design; User Centered Design (UCD); Engineering Design; Design Thinking, and more!	DIR	1-6

TECHNICAL ELECTIVE COURSES (A MAXIMUM OF 6 CREDITS in technical electives are allowed.)

CODE	COURSE TITLE	PRE-REQUISITES	CDS.
INME 4006	Machinery Dynamics	MATE 4009 & INME 4005	3
INME 4009	Automatic Controls	INME 4210	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 4028	Fluid Machinery	INGE 4010 OR 4015 & INME 4002	3
INME 4037	Internal Combustion Engines	INME 4015	3
INME 4046	Fundamentals of Vibration	INGE 3032 Co-Req: MATE 4009	3
INME 4705	Applied Aerodynamics	INGE 4010 (or 4015 + 4016), INGE3016 & MATE 4009	3
INME 4707	Thermodynamics and Gas Turbine Propulsion	INME4002 OR 4045, INGE 4010 (or 4015 + 4016), INGE3016 & MATE 4009 Co-Req: INME4002	3
INME 4850	Introduction to Robotics	INME4011	3
INME 5005	Lubrication	DIR	3
INME 5007	Solar Energy Application	INME4015 or INQU4001 or DIR	3
INME 5008	Corrosion	INME4107 or DIR	3
INME 5015	These topics: Biomaterials/Biomedical Engineering/Introduction to Plastics/Nuclear Engineering/Computational Fluid Dynamics/Most research projects and coops	DIR	1-6
INME 5018	Materials Failure Analysis	INME4012 & INME4107 or DIR	3
INME 5025	Metals Fatigue	INME4107 or DIR	3
INME 5707	Gas Turbine Operating System	INME4002 OR 4045, INGE3016 & INME4707 or DIR	3

OTHER ELECTIVE COURSES (The type of elective will depend on the topic and/or your final report.)

COOPS, INTERNSHIPS & UNDERGRADUATE RESEARCH					
INME 4039	Mechanical Eng. Practice (Mostly Technical/Free)	3	INME 5995	Special Problems	1-6
INME 4995	Eng. Practice for Coop Students (Mostly Technical/Free)	0-9	INME 5996	Special Problems II	1-6
INME 4998	Undergraduate Research (Mostly Technical/Free)	1-6	INME 5997	Selected Topics II	1-6
INME 5015	Selected Topics in Mech. Engineering	1-6	INTD 4995	Institutional Coop Plan (Mostly Technical/Free)	0-9

****In order to obtain the BSME, it is required that students take 12 credits in Professional Electives, from which a MINIMUM of 6 credits should be in Design Electives and the other 6 credits to be chosen between the Technical Electives or more courses from the Design alternatives.



MINOR IN AEROSPACE ENGINEERING



The Minor in Aerospace Engineering (MAE) provides a competitive and multidisciplinary education that aims to provide knowledge in space, aeronautic, and astronautics fields engaging students through real theoretical, computational and/or experimental aerospace engineering problems. You complete this minor along with your engineering degree. To apply for this minor, go visit the ME's Academic Advisor for more information.

Warning: If you are planning to complete the minor, these courses will be used as Free Electives. If you are interested in certain courses only, you can use them as Professional Electives, if necessary.	Course Code	Course	COURSE OFFERING SEASON	
			Fall	Spring
	INME 4705	Applied Aerodynamics Pre-reqs: INGE 4015 + INGE 4016, INGE 3016 & MATE 4009	X	
	INME 4709	Aircraft Performance Pre-reqs: INGE 3032, INGE 3016 & MATE 4009		X
	INME 4717	Aircraft Structural Analysis And Design Pre-reqs: INGE 3032, INGE 3016 & MATE 4009	X	
	INME 5717	Advanced Aircraft Structural Design Pre-reqs: INME 4717, INGE 4019 or 4012		X
	*INME 5707	Gas Turbine System Operation Pre-reqs: INME 4002 or 4045, INGE 3016 & INME 4707 or DIR		X

Students must take INME 4707 before INME 5707. However, since INME 4707 is not part of the course sequence of our Aeroespace Minor, it can be used as a TECHNICAL elective.

For more information, please contact ME's Academic Advisor
Mrs. Yolanda Pérez (yolanda.perez4@upr.edu)

uprm.edu/inme