

BSME Senior Design Options

		Semester & Course Sequence		
		Spring	Fall	Spring
FSAE Track		ME406	ME407	ME408
Senior Design Track	Solar Splash option		ME461 Solar Splash	ME460 (section – Vorobieff)
	Lobo Launch option		ME461 Rocket Engineering	ME460 (section – Aguilar)
	“Regular” Senior Design option	One semester of ME460 (section - Pleil or Hasan), offered both Fall & Spring		

Short Descriptions of Options:

FSAE Track

ME406: Design a racecar that will participate in Formula SAE international competition including acceleration, autocross and endurance events. Vehicles are judged on performance, cost and design. Project management, vehicle dynamics, tires, brakes, suspension and steering are covered.

ME407: Manufacture vehicle designed in 406. Make project management decisions on build or buy balancing cost, performance and schedule. Use CAD/CAM extensively to design, machine and fabricate complex parts. Plan integrated drivers’ training and test programs.

ME408: Implement testing program to validate vehicle design fabricated in 407 using state of the art data acquisition equipment. Modify and redesign as required. Continue drivers’ training program. Participate in Formula SAE international competition.

Senior Design Track – Solar Splash

UNM Solar Splash is a two-semester senior design project focused on building a solar-electric speedboat to compete in SOLAR SPLASH, the annual World Championship of intercollegiate Solar/Electric boating. The first semester of the project (Fall only) the students must enroll in a ME461/561 Solar Splash special topics course, which is open to seniors in good standing (GPA above 3.5 preferred) and to graduate students. The second semester of the project (Spring only) is a combination of a section of the ME460 capstone design class for undergraduates and a 3-credit problems course for graduate-level participants. For undergraduates, prerequisites for ME460 must be met, along with successful Fall participation in ME461/561 Solar Splash. To

register for the project, instructor permission is required. Inquire with Prof. Peter Vorobieff (kalmoth@unm.edu).

Senior Design Track – Lobo Launch

UNM Lobo Launch is a hands-on, large scale senior design project with direct connections to the aerospace industry. Students will learn about multiple aspects of rocket design and launch operations, culminating with a competitive rocket launch during the Experimental Sounding Rocket Association International Spaceport America Cup. Lobo Launch sub-teams include: structure design and analysis, electronic systems, data, recovery, propulsion, payload and launch logistics/operations.

Senior Design Track – “Regular” Senior Design

Students work in teams to design complete engineering systems. Considerations include technical solution, function, manufacturability, cost, safety and standards, and materials. Written and oral presentation skills are emphasized.