

**B.S.M.E. DEGREE IN
MECHANICAL ENGINEERING AND ENGINEERING SCIENCE
WITH A CONCENTRATION IN MOTORSPORTS ENGINEERING**

FRESHMAN YEAR

ENGR 1201	INTRO TO ENGR I	2	ENGR 1202	INTRO TO ENGR II	2
CHEM 1251	CHEMISTRY I	3	PHYS 2101	PHYSICS I	3
CHEM 1251L	CHEMISTRY I LAB	1	PHYS 2101L	PHYSICS I LAB	1
MATH 1241	CALCULUS I	3	MATH 1242	CALCULUS II	3
ENGL 1101	ENGLISH I	3	ENGL 1102	ENGLISH II	3
LBST 110X	ARTS AND SOCIETY	3	SCIENCE ELECTIVE		3
		15			15

SOPHOMORE YEAR

PHYS 2102	PHYSICS II	3	MEGR 2180	MANUF. SYSTEMS	3
PHYS 2102L	PHYSICS II LAB	1	MEGR 2156	DESIGN PROJ. LAB I	2
MEGR 2141	ENGR MECHANICS I	3	MEGR 2144	SOLID MECHANICS	3
MATH 2171	DIFF. EQUATIONS	3	MATH 2241	CALCULUS III	3
ECON 2101	MACRO ECONOMICS	3	ECGR 2161	BASIC ELECT. ENGR	3
LBST 2101	WESTERN CULTURE	3	MEGR 2240	COMPUTATIONAL METHODS	3
MEGR 2299	Intro to Motorsports Engineering	1			
		17			17

JUNIOR YEAR

MEGR 3111	THERMODYNAMICS I	3	MEGR 3112	THERMODYNAMICS II	3
MEGR 3121	DYNAMIC SYSTEMS I	3	MEGR 3122	DYNAMIC SYSTEMS II	3
MEGR 3161	ENGR MATERIALS	3	MEGR 3116	HEAT TRANSFER	3
MEGR 3171	MEAS. & INSTRUM.	2	MEGR 3156	DESIGN PROJ. LAB II	2
MEGR 3171L	INSTRUM. LAB	2	MEGR 3114	FLUID MECHANICS	3
MATH ELECTIVE ¹		3	MEGR 3152	MECHS & MATRLS LAB	2
		16			16

SENIOR YEAR

MEGR 3355*	MOTORSPORTS SENIOR DESIGN I	2	MEGR 3356	MOTORSPORTS SENIOR DESIGN II	2
	MOTORSPORTS TECHNICAL ELECTIVE	3		MOTORSPORTS TECHNICAL ELECTIVE	3
	MOTORSPORTS TECHNICAL ELECTIVE	3		MOTORSPORTS TECHNICAL ELECTIVE	3
LBST 2102	GLOBAL UNDERSTANDING	3	LBST 221X	ETHICAL ISSUES	3
MEGR 3221	MACH ANAL & DESIGN	3	MEGR 3216	THERMAL/FLUIDS DSN	3
MEGR 3251	THERMAL/FLUIDS LAB	2			
ENGR 3295	PROF. DEVELOPMENT	1			
		17			14

* Must be an approved Motorsports project

TOTAL HOURS 127

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¹ All Mechanical Engineering students must meet the Statistics requirement described on the back of this page.

² Technical electives are described on page 2. At least three of the technical electives must be within the major. One technical elective may be outside the major if it has appropriate technical content and has prior approval.

PROGRAM ELECTIVES

MATH and STATISTICS

¹All MEGR students are required to complete: a) a math elective and b) a course with appropriate statistics content. Option 1 for fulfilling the combination of the math elective and the statistics requirement is STAT 3128. Option 2 is to use the technical elective MEGR 3282 to fulfill the statistics requirement while also taking MATH 2164 or MATH 3171 as the math elective. The math elective will not also count as a technical elective. For either option, five courses are required to fulfill the requirements of math, statistics and technical electives.

Option 1 – STAT 3128 fulfills math elective and statistics requirements (plus students will need four technical electives).

Option 2 – MEGR 3282 plus MATH 2164 or MATH 3171 (plus students will need three additional technical electives).

SCIENCE

The courses available to fulfill the science elective are PHYS 1130 (Astronomy), BIOL 1110, CHEM 1252, GEOL 1200 or a 3000 or higher-level Chemistry or Physics course. A lab is not required for the science elective.

TECHNICAL ELECTIVES²

Students must take four approved Motorsports Engineering Technical Electives, which include:

- MEGR 309X: Various courses with three credits that are designated as approved technical electives
- MEGR 3210: Automotive Power Plants (requires MEGR 3112)
- MEGR 3092: Advanced Automotive Power Plants (requires MEGR 3210)
- MEGR 3211: Road Vehicle Dynamics (requires MEGR 3122)
- MEGR 3225: Introduction to Finite Element Analysis (requires MEGR 2144, 2240 and MATH 2171)
- MEGR 3231: Advanced CAD/CAM (requires ENGR 1202 and MEGR 2156)
- MEGR 3241: Motorsports Instrumentation (requires ECGR 2161)
- MEGR 3242: Applied Vehicle Aerodynamics (requires MEGR 2240, 3111 and 3114)
- MEGR 3243: Automotive Powertrain Lab (requires MEGR 3210)
- MEGR 3282: Statistical Process Control and Metrology (requires MEGR 2180)

LIBERAL STUDIES

UNC Charlotte's General Education program requires students to satisfy the general education Liberal studies core curriculum with one course from each of the four key areas of learning:

ARTS AND SOCIETY (3 credits)

LBST 1101 The Arts and Society: Dance
LBST 1103 The Arts and Society: Music
LBST 1105 The Arts and Society: Visual Arts

LBST 1102 The Arts and Society: Film
LBST 1104 The Arts and Society: Theater

WESTERN TRADITION (3 credits)

LBST 2101 Western Cultural and Historical Awareness

GLOBAL UNDERSTANDING (3 credits)

LBST 2102 Global and Intercultural Connections

ETHICAL ISSUES AND GLOBAL CRITIQUE (3 credits)

LBST 2211 Ethical Issues in Personal, Professional and Public Life
LBST 2212 Literature and Culture
LBST 2213 Science, Technology, and Society
LBST 2214 Issues of Health and Quality of Life
LBST 2215 Citizenship

FOREIGN LANGUAGE

College of Engineering students are not required to take foreign language courses.