

13. Scheme of Studies

B.E Mechanical (Specialization in Automotive) Engineering									
First Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
CY-110	Applied Chemistry for Engineers	2	1	3	ES-206/ES-209	Islamic Studies/ Ethical Behavior (For Non-Muslims)	2	0	2
MT-116	Calculus and Analytical Geometry	3	0	3	MT-221	Linear Algebra & Ordinary Differential Equations	3	0	3
ES-105/ES-127	Pakistan Studies/ Pakistan Studies (for Foreigners)	2	0	2	ES-108	Ideology and Constitution of Pakistan	2	0	2
EA-128	Functional English	3	0	3	MF-101	IT Fundamentals and Applications	2	1	3
ME-118	Engineering Drawing	1	1	2	EE-210	Basic Electrical and Electronics Engineering	2	1	3
ME-119	Thermodynamics – I	3	0	3	ME-120	Statics	3	0	3
CY-100	Essentials of Chemistry (For Computer Science Students)	NC			---	---	--	--	--
Total		14	2	16	Total		14	2	16
Second Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
ME-226	Dynamics	2	0	2	MT-233	Probability & Statistics	2	0	2
ME-223	Engineering Mechanics Lab	0	1	1	MT-334	Numerical Methods for Engineers	3	0	3
MF-201	Civics and Community Engagement	2	0	2	MT-336	Statistics and Numerical Methods Lab	0	1	1
ME-228	Workshop Practice	0	1	1	ME-219	Mechanics of Machines	3	0	3
ME-229	Materials Engineering	2	0	2	ME-235	Fluid Mechanics – I	3	0	3
MT-232	Advanced Calculus & Transformations	2	0	2	ME-234	Applied Programming for Mechanical Engineers	1	1	2
ME-227	Mechanics of Materials – I	3	0	3	ME-233	Manufacturing Processes	3	0	3
ME-231	Thermodynamics – II	2	0	2	ME-232	Materials and Manufacturing Lab	0	1	1
ME-113	Computer Aided Drawing	0	1	1	MF-205	Community Service	NC		
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Total		13	3	16	Total		15	4	19
Third Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
ME-325	Mechanics of Materials – II	3	0	3	ME-336	Machine Design	3	0	3
ME-326	Fluid Mechanics – II	3	0	3	ME-337	Machine Design and Vibration Lab	0	1	1
ME-328	Mechanics of Materials Lab	0	1	1	ME-318	Heat & Mass Transfer	3	0	3
ME-331	Fluid Mechanics Lab	0	1	1	EE-402	Control Engineering	2	0	2
ME-332	Measurements and Instrumentation	2	0	2	ME-444	Measurement, Instrumentation and Control Engineering Lab	0	1	1
EA-244	Academic Reading and Writing	3	0	3	AU-364	Automotive Chassis Systems	2	0	2
AU-361	Vehicle Manufacturing Processes	2	0	2	AU-365	Vehicle Vibrations & Control	3	0	3
AU-362	Automotive Propulsion	2	0	2	MF-304	Engineering Economics	2	0	2
AU-363	Thermodynamics and Propulsion Lab	0	1	1	EA/ES-###	Foreign Language-I	NC		
ES-110/ES-211	Understanding of Holy Quran – II/ Introduction to Ethics – II	0	1	1	---	----	---		
Total		15	4	19	Total		15	2	17

Final Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
AU-422	Automotive Transmission & Drives	2	0	2	AU-445	Electric & Hybrid Vehicles	2	0	2
ME-334	Refrigeration & Air Conditioning	3	0	3	MG-485	Entrepreneurship	2	0	2
ME-320	RAC and Heat Transfer Lab	0	1	1	ME-443	Health, Safety & Environment	1	0	1
AU-498*	Automotive Engineering Design Project	0	3	3	AU-498*	Automotive Engineering Design Project	0	3	3
AU/ME-###	Technical Elective – I	3/2	0/1	3	AU/ME-###	Technical Elective – II	3/2	0/1	3
ME-441	Finite Element Methods	2	1	3	ME-438	AI and Internet of Things	2	1	3
IM-323	Project Management	2	0	2	EA/ES-XXX	Arts & Humanities Elective	2	0	2
EA/ES-###	Foreign Language-II	NC			MG/ME-XXX	Social Science Elective	2	0	2
Total		12/11	5/6	17	Total		14/13	4/5	18

* Duration one academic year: Requires literature survey and preliminary work during this Semester

Technical Electives									
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
AU-304	Vehicle Dynamics	2	1	3	ME-327	Advanced and Digital Manufacturing	3	0	3
AU-403	Body Engineering & Automotive Structures	3	0	3	ME-419	Stress Analysis	3	0	3
AU-417	Automotive Paints and Coatings	3	0	3	ME-423	Computer-Aided Design/ Computer-Aided Manufacturing	2	1	3
AU-451	Product Design & Development	3	0	3	ME-424	Clean Energy Technology	3	0	3
AU-449	Automotive Service and Dealership	3	0	3	ME-439	Mechatronics	2	1	3
AU-453	Introduction to Robotics	2	1	3	ME-440	Product Development and Reverse Engineering	2	1	3
AU-454	Autonomous Vehicles	3	0	3	----	---	--	--	--
AU-455	Automotive Embedded Systems	3	0	3	----	---	--	--	--
AU-456	Vehicle Crashworthiness	3	0	3	----	---	--	--	--

Humanities and Social Science Electives									
Arts & Humanities Electives					Social Electives				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
EA-219	Professional Ethics	2	0	2	MG-228	Sociology & Development	2	0	2
EA-321	Logic & Critical Thinking	2	0	2	MG-257	Organizational Behavior	2	0	2
EA-229	Anthropology	2	0	2	ME-433	Law for Engineers	2	0	2