



Covenant University

B.Eng. Degree Programme in
Chemical Engineering

Course Structure

(Volume 6)

The courses and course contents that a student of Chemical Engineering department must offer successively before the student can graduate with B.Eng Chemical Engineering from the Department are discussed in Table 1.2 (i - v).

Table 1.2(i) : 100 Level Engineering Courses by Semesters

100 LEVEL ENGINEERING										
	ALPHA SEMESTER					OMEGA SEMESTER				
	Course Code	Course Title	Status	Units	Pre-Requisite	Course Code	Course Title	Status	Units	Pre-Requisite
Core Courses	GEC117	Technical Drawing	C	1		MAT121	Mathematics V: Calculus	C	3	
	MAT111	Mathematics I: Algebra	C	3		MAT122	Mathematics VI: Vector Algebra	C	3	
	MAT112	Mathematics II: Trigonometry and Geometry	C	3		PHY121	Electricity and Magnetism	C	2	
	PHY111	Mechanics and Properties of Matter	C	3		PHY122	Atomic and Nuclear Physics	C	2	
	PHY112	Heat, Sound and Optics	C	3		PHY129	Physics Practical II	C	1	
	PHY119	Physics Practical I	C	1		CHM121	General Organic Chemistry	C	3	
	CHM111	General Physical Chemistry	C	3		CHM122	General Inorganic Chemistry	C	2	
	CHM119	General Chemistry Practical I	C	1		CHM129	General Chemistry Practical II	C	1	
		Sub-Total			18		Sub-Total			17
University Courses	EDS111	Entrepreneurial Development Studies I	C	1		EDS121	Entrepreneurial Development Studies II	C	1	
	TMC111	Total Man Concept I	C	1		TMC121	Total Man Concept II	C	1	
	TMC112	Total Man Concept – Sports	C	0		TMC122	Total Man Concept – Sports	C	0	
		Sub-Total			2		Sub-Total			2
General Courses	CST111	Use of Library, Study Skills and Information Communication Technology I	C	2		CST121	Use of Library, Study Skills and Information Communication Technology II	C	2	
	GST111	Communication in English I	C	2		GST121	Communication in English II	C	2	
						GST122	Communication in French	C	2	
		Sub-Total			4		Sub-Total			6
	TOTAL			24		TOTAL			25	49

Table 1.2(ii): 200 Level Engineering Courses by Semesters

200 LEVEL ENGINEERING

200 LEVEL ENGINEERING										
	ALPHA SEMESTER					OMEGA SEMESTER				
Core Courses	Course Code	Course Title	Status	Units	Pre-Requisite	Course Code	Course Title	Status	Units	Pre-Requisite
	CHE211	Introduction to Chemical Engineering I	C	1		CHE221	Introduction to Chemical Engineering II	C	2	
	GEC210	Engineering Mathematics I	C	3	MAT111, MAT112	GEC220	Engineering Mathematics II	C	3	MAT121 MAT122
	GEC211	Fundamentals of Electrical Engineering I	C	2		GEC221	Thermodynamics	C	3	
	GEC212	Engineering Graphics	C	2	GEC117	GEC222	Computer Aided Design & Manufacture	C	2	
	GEC213	Material Science & Engineering	C	2		GEC223	Fluid Mechanics	C	3	
	GEC214	Applied Mechanics	C	4		GEC224	Strength of Materials	C	3	
	GEC215	Applied Computer Programming I	C	2	CST111	GEC225	Applied Computer Programming II	C	1	GEC215
	GEC216	General Engineering Laboratory I	C	1		GEC226	General Engineering Laboratory II	C	1	GEC216
	GEC217	Engineer-In-Society	C	1		GEC228	Fundamentals of Electrical Engineering II	C	2	GEC211
	GEC218	Workshop Technology	C	2		GEC229	Student Workshop Experience Program (SWEP) *See 400 Level Omega	C	0	
		Sub-Total		20			Sub-Total		19	
University Courses	EDS211	Entrepreneurial Development Studies III	C	1	EDS111	EDS221	Entrepreneurial Development Studies IV	C	1	EDS121
	TMC211	Total Man Concept III	C	1	TMC111	TMC221	Total Man Concept IV	C	1	TMC121
	TMC212	Total Man Concept – Sports	C	0	TMC112	TMC222	Total Man Concept – Sports	C	0	TMC122
		Sub-Total		2			Sub-Total		2	
General Courses	GST211	Logic, Philosophy and Human Existence	C	2	GST111	GST221	Nigerian People and Culture	C	2	GST121
						GST222	Peace Studies and Conflict Resolution	C	2	GST121 GST122
		Sub-Total		2			Sub-Total		4	
	TOTAL		24			TOTAL		25	49	

NOTE:

*GEC229 (SWEP – done during the long vacation is registered as 6 Units in 400 Omega Semester and used in CGPA computation

Table 1.2(iii): 300 Level Chemical Engineering Courses by Semesters

300 LEVEL ENGINEERING										
	ALPHA SEMESTER					OMEGA SEMESTER				
Core Courses	Course Code	Course Title	Status	Units	Pre-Requisite	Course Code	Course Title	Status	Units	Pre-Requisite
	GEC310	Engineering Mathematics III	C	3	GEC210	GEC320	Engineering Mathematics IV	C	3	GEC220
	CHE331	Chemical Process Engineering Analysis I	C	2		GEC324	Technical Communication	C	1	
	CHE332	Chemical Engineering Practical I	C	2		GEC321	Engineering Economics	C	3	
	CHE333	Chemical Engineering Transport Phenomenal I	C	4	GEC223	CHE340	Separation Processes II	C	3	
	CHE315	Chemical Reaction Kinetics	C	3		CHE341	Particle Technology	C	2	
	CHE334	Process Modeling and Simulation	C	2		CHE342	Chemical Engineering Practical II	C	3	
	CHE335	Separation Processes I	C	4		CHE324	Introduction to Biochemical Engineering	C	3	
	CHE336	Process Instrumentation	C	2		CHE345	Chemical Engineering Process Thermodynamics I	C	3	
						CHE346	Reaction Engineering I	C	2	CHE315
					GEC329	SIWES I*	C	0		
	Sub-Total		22			Sub-Total		22	44	
University Courses	EDS311	Entrepreneurial Development Studies V	C	1	EDS211	EDS321	Entrepreneurial Development Studies VI	C	1	EDS321
	TMC311	Total Man Concept V	C	1	TMC211	TMC321	Total Man Concept VI	C	1	TMC221
	TMC312	Total Man Concept – Sports	C	0	TMC212	TMC322	Total Man Concept – Sports	C	0	TMC222
		Sub-Total		2			Sub-Total		2	
	TOTAL		24			TOTAL		24	46	

Table 1.2(iii): 300 Level Chemical Engineering Courses by Semesters

NOTE: * GEC329 (SIWES I – done during the long vacation is registered as 6 Units in 400 Omega Semester and used in CGPA computation

Table 1.2(iv): 400 Level Chemical Engineering Courses by Semesters

400 LEVEL ENGINEERING										
ALPHA SEMESTER						OMEGA SEMESTER				
	Course Code	Course Title	Status	Units	Pre-Requisite	Course Code	Course Title	Status	Units	Pre-Requisite
Core Courses	GEC410	Engineering Statistics	C	3		GEC429	Student Industrial Work Experience Scheme SIWES [2]	C	6	
	CHE418	Chemical Process Engineering Analysis II	C	2	CHE331					
	CHE432	Separation Processes III	C	3						
	CHE437	Chemical Engineering Laboratory III	C	2	CHE342					
	CHE433	Transport Phenomena II	C	4						
	CHE434	Fundamentals of Plant Design I	C	2						
	CHE435	Chemical Engineering Process Thermodynamics II	C	2	CHE345					
	CHE436	Reaction Engineering II	C	2	CHE346					
	CHE417	Polymer Process Engineering	C	2						
						GEC428	SIWES-1	C	6	GEC427
		Sub-Total			22		Sub-Total			18
University Courses	EDS411	Entrepreneurial Development Studies VII	C	1	EDS311					
	TMC411	Total Man Concept VII	C	1	TMC311					
	TMC412	Total Man Concept – Sports	C	0	TMC312					
				2						2
	TOTAL			24		Total			18	43

Table 1.2(v): 500 Level Chemical Engineering Courses Semesters

500 LEVEL ENGINEERING										
	ALPHA SEMESTER					OMEGA SEMESTER				
Core Courses	Course Code	Course Title	Status	Units	Pre-Requisite	Course Code	Course Title	Status	Units	Pre- Requisite
	GEC517	Engineering Law	C	2		GEC527	Engineering Management	C	3	
	CHE531	Biochemical Engineering Processes	C	3		CHE525	Polymer Science and Technology	C	3	
	CHE532	Process Dynamics and Control	C	4	CHE336	CHE544	Chemical Engineering Process Optimization	C	3	
	CHE533	Process Design in Chemical Engineering I	C	3		CHE543	Process Design in Chemical Engineering II	C	2	CHE533
	CHE534	Environmental Engineering	C	3		CHE549	Chemical Engineering Research Project II	C	6	CHE549
	CHE536	Fundamentals of Plant Design II	C	2	CHE434					
	CHE539	Chemical Engineering Research Project I	C	0						
		Sub-Total		17			Sub-Total		17	34
		Note: Select ONLY 3 credit units from these Electives for each semester								
ELECTIVES	CHE514	Corrosion of Metals and Alloys	E	3		CHE527	Sugar Technology	E	3	
	CHE515	Industrial Chemical Processes	E	3		CHE528	Petroleum Refining and Petrochemical Technology	E	3	
	CHE530	Pulp and Paper Processing Technology	E	3		CHE542	Reservoir Engineering	E	3	
		Sub-Total		3			Sub-Total		3	6
University Courses	EDS512	Cost Engineering	C	2	EDS512	EDS522	Engineering Valuation	C	2	
	TMC511	Total Man Concept IX	C	1	TMC211	TMC521	Total Man Concept X	C	1	
	TMC512	Total Man Concept – Sports	C	0	TMC512	TMC522	Total Man Concept – Sports	C	0	
		Sub-Total		3			Sub-Total		3	6
	TOTAL		23			TOTAL		23	46	

**(CHE542) Reservoir Engineering is a compulsory elective course.