KCG COLLEGE OF TECHNOLOGY (AUTONOMOUS)
REGULATIONS 2023
B.E. CIVIL ENGINEERING
CHOICE BASED CREDIT SYSTEM
CURRICULUM FOR SEMESTERS I TO VIII

SEMESTER – I

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
	23IP101	Induction Programme		-	-	-	-	-
THEORY								
1	23HS101	Essential Communication	HSMC	3	0	0	3	3
2	23MA101	Matrices and Calculus	BSC	3	0	0	3	3
3	23AD101	Programming in Python	ESC	3	0	0	3	3
4	23HS102	Heritage of Tamils	HSMC	1	0	0	1	1
THEORY AND PRACTICALS								
5	23PH111	Engineering Physics	BSC	3	0	2	5	4
6	23CY111	Engineering Chemistry	BSC	3	0	2	5	4
PRACTICALS								
7	23AD121	Python Programming Laboratory	ESC	0	0	4	4	2
8	23HS121	Communication Skills Laboratory	HSMC	0	0	2	2	1
9	23HS122	General Clubs / Technical Clubs / NCC / NSS / Extension Activities	HSMC	0	0	2	2	1*
TOTAL				16	0	12	28	21

*The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA

SEMESTER – II

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23HS201	Professional English / Foreign Language	HSMC	3	0	0	3	3
2	23MA203	Statistics and Numerical Methods	BSC	3	1	0	4	4
3	23PH201	Physics for Civil Engineering	BSC	3	0	0	3	3
4	23CE201	Building Materials	PCC	3	0	0	3	3
5	23HS203	Tamils and Technology	HSMC	1	0	0	1	1
THEORY AND PRACTICALS								
6	23EE282	Basic Electrical, Electronics and Instrumentation Engineering	ESC	2	0	2	4	3
7	23ME211	Engineering Graphics	ESC	3	0	2	5	4
PRACTICALS								
8	23ME221	Engineering Practices Laboratory	ESC	0	0	4	4	2
9	23CE221	Materials Testing Laboratory	PCC	0	0	4	4	2
10	23HS221	Soft Skills	EEC	0	0	2	2	1*
TOTAL				18	1	14	33	25

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2	23CE301	Engineering Mechanics	PCC	3	0	0	3	3
3	23HS301	Universal Human Values and Ethics	HSMC	3	0	0	3	3
THEORY AND PRACTICALS								
4	23CE311	Surveying	PCC	3	0	2	5	4
5	23CE312	Advanced Concrete Technology	PCC	3	0	2	5	4
6	23ME312	Fluid Mechanics and Hydraulic Machinery	PCC	3	0	2	5	4
PRACTICALS								
7	23CE321	Computer Aided Building Drawing Laboratory	PCC	0	0	4	4	2
8	23ES391	Presentation Skills	EEC	0	0	2	2	1*
TOTAL				18	1	12	31	24

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23MA402	Optimization Techniques	BSC	3	1	0	4	4
2	23CE401	Transportation Engineering	PCC	3	0	0	3	3
3	23CE402	Water supply and Waste Water Engineering	PCC	3	0	0	3	3
4		Department Elective 1	DEC	3	0	0	3	3
THEORY AND PRACTICALS								
5	23CE411	Soil Mechanics	PCC	3	0	2	5	4
6	23CE412	Strength of Materials	PCC	3	0	2	5	4
PRACTICALS								
7	23CE421	Water and Waste water Analysis Laboratory	PCC	0	0	4	4	2
8	23ES491	Aptitude and Logical Reasoning -1	EEC	0	0	2	2	*1
9	23CE422	In plant training	EEC	0	0	2	2	1
TOTAL				18	1	12	31	24

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23RE501	Research Methodology and Intellectual Property Rights	ESC	2	0	0	2	2
2	23CE501	Design of Reinforced Concrete Elements	PCC	3	0	0	3	3
3	23CE502	Structural Analysis I	PCC	3	0	0	3	3
4	23CE503	Foundation Engineering	PCC	3	0	0	3	3
5		Department Elective 2	DEC	3	0	0	3	3
6		Non - Department Elective 1 (Emerging Technology)	NEC	3	0	0	3	3
PRACTICALS								
7	23CE521	Computer Aided Design and Detailing Laboratory	PCC	0	0	4	4	2
8	23CE522	Survey Camp	PCC	0	0	4	4	2
9	23CE523	Mini Project	EEC	0	0	4	4	2
10	23ES591	Aptitude and Logical Reasoning - 2	EEC	0	0	2	2	*1
TOTAL				17	0	14	31	23

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23CE601	Design of Steel Structures	PCC	3	0	0	3	3
2	23CE602	Structural Analysis II	PCC	3	0	0	3	3
3		Department Elective 3	DEC	3	0	0	3	3
4		Department Elective 4	DEC	3	0	0	3	3
5		Non - Department Elective 2 (Management /Safety Courses)	NEC	3	0	0	3	3
THEORY AND PRACTICALS								
6	23CE611	Environmental Sciences and Engineering	ESC	3	0	2	5	4
PRACTICALS								
7	23CE621	Project Work - Phase 1	EEC	0	0	4	4	2
8	23CE622	Technical Training	EEC	0	0	2	2	1
9	23CE623	Technical Seminar- 1	ESC	0	0	2	2	1
TOTAL				18	0	10	28	23

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1		Non - Department Elective 3 (Management Courses)	NEC	3	0	0	3	3
2		Department Elective 5	DEC	3	0	0	3	3
3		Department Elective 6	DEC	3	0	0	3	3
4	23CE701	Comprehension	EEC	2	0	0	2	2
THEORY AND PRACTICALS								
5	23CE711	Estimation Costing and Valuation Engineering	PCC	3	0	2	5	4
PRACTICALS								
6	23CE721	Project Work - Phase 2	EEC	0	0	6	6	3
7	23CE722	Technical Seminar - 2	ESC	0	0	4	4	2
TOTAL				14	0	12	26	20

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATE GO RY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1	23CE821/ 23CE822	Internship/ Capstone Project	EEC	0	0	20	20	10
TOTAL				0	0	20	20	10

TOTAL CREDITS: 170

DEPARTMENT ELECTIVE COURSES: VERTICALS

VERTICAL 1: STRUCTURES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE031	Repair and Rehabilitation of Structures	DEC	3	0	0	3	3
2	23CE032	Dynamics and Earthquake Resistant Structures	DEC	3	0	0	3	3
3	23CE033	Prestressed Structures	DEC	3	0	0	3	3
4	23CE034	Prefabricated Structures	DEC	3	0	0	3	3
5	23CE035	Composite Structures	DEC	3	0	0	3	3
6	23CE036	Finite Element Method	DEC	3	0	0	3	3

VERTICAL 2: GEOTECHNICAL

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE037	Geo environmental Engineering	DEC	3	0	0	3	3
2	23CE038	Ground Improvement Techniques	DEC	3	0	0	3	3
3	23CE039	Pile Foundation	DEC	3	0	0	3	3
4	23CE040	Tunneling Engineering	DEC	3	0	0	3	3
5	23CE041	Earth Retaining Structures	DEC	3	0	0	3	3
6	23CE042	Soil Dynamics and Machine Foundations	DEC	3	0	0	3	3

VERTICAL 3: TRANSPORTATION & INFRASTRUCTURES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE043	Intelligent Transport Systems	DEC	3	0	0	3	3
2	23CE044	Urban Planning and Development	DEC	3	0	0	3	3
3	23CE045	Transportation Planning Process	DEC	3	0	0	3	3
4	23CE046	Smart Cities	DEC	3	0	0	3	3
5	23CE047	Pavement Engineering	DEC	3	0	0	3	3
6	23CE048	Traffic Engineering and Management	DEC	3	0	0	3	3

VERTICAL 4: WATER RESOURCES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE049	Water Quality and Management	DEC	3	0	0	3	3
2	23CE050	Ground Water Engineering	DEC	3	0	0	3	3
3	23CE051	Watershed Conservation and Management	DEC	3	0	0	3	3
4	23CE052	Integrated Water Resources Management	DEC	3	0	0	3	3
5	23CE053	Hydrology and Irrigation Engineering	DEC	3	0	0	3	3
6	23CE054	Water Resources system Engineering	DEC	3	0	0	3	3

VERTICAL 5: GEO INFORMATICS

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE055	Airborne and Terrestrial Laser Mapping	DEC	3	0	0	3	3
2	23CE056	Remote Sensing Concepts	DEC	3	0	0	3	3
3	23CE057	Satellite Image Processing	DEC	3	0	0	3	3
4	23CE058	Cartography and GIS	DEC	3	0	0	3	3
5	23CE059	Photogrammetry	DEC	3	0	0	3	3
6	23CE060	Hydrographic Surveying	DEC	3	0	0	3	3

VERTICAL 6: CONSTRUCTION TECHNIQUES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE061	Formwork Engineering	DEC	3	0	0	3	3
2	23CE062	Sustainable Construction and Lean Construction	DEC	3	0	0	3	3
3	23CE063	Construction Planning and Scheduling	DEC	3	0	0	3	3
4	23CE064	Construction Techniques Equipment & Practices	DEC	3	0	0	3	3
5	23CE065	Energy Efficient Buildings	DEC	3	0	0	3	3
6	23CE066	Rainwater Harvesting	DEC	3	0	0	3	3

VERTICAL 7: ENVIRONMENT

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE067	Climate Change Adaptation and Mitigation	DEC	3	0	0	3	3
2	23CE068	Air and Noise Pollution Control Engineering	DEC	3	0	0	3	3
3	23CE069	Environmental Impact Assessment	DEC	3	0	0	3	3
4	23CE070	Solid and Hazardous Waste Management	DEC	3	0	0	3	3
5	23CE071	Environmental Health and Safety	DEC	3	0	0	3	3
6	23CE072	Environmental Quality Monitoring	DEC	3	0	0	3	3

VERTICAL 8: OCEAN ENGINEERING

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23CE073	Ocean Wave Dynamics	DEC	3	0	0	3	3
2	23CE074	Marine Geotechnical Engineering	DEC	3	0	0	3	3
3	23CE075	Coastal Engineering	DEC	3	0	0	3	3
4	23CE076	Port and Harbour Engineering	DEC	3	0	0	3	3
5	23CE077	Coastal Hazards and Mitigation	DEC	3	0	0	3	3
6	23CE078	Offshore Structures	DEC	3	0	0	3	3

NON - DEPARTMENT ELECTIVE – EMERGING TECHNOLOGY

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23NE971	Quantum Technology	NEC	3	0	0	3	3
2	23NE972	Block Chain Technology	NEC	3	0	0	3	3
3	23NE973	Big Data Analytics	NEC	3	0	0	3	3
4	23NE974	Augmented Reality and Virtual Reality	NEC	3	0	0	3	3
5	23NE975	Artificial Intelligence and Machine Learning Fundamentals	NEC	3	0	0	3	3
6	23NE976	IoT concepts and applications	NEC	3	0	0	3	3
7	23NE977	Data Science and Fundamentals	NEC	3	0	0	3	3
8	23NE978	Remote Sensing Concepts	NEC	3	0	0	3	3
9	23NE979	Urban Agriculture	NEC	3	0	0	3	3
10	23NE980	Electric Vehicle Technology	NEC	3	0	0	3	3
11	23NE981	Nanotechnology	NEC	3	0	0	3	3
12	23NE982	Functional Materials	NEC	3	0	0	3	3
13	23NE983	Renewable Energy Systems	NEC	3	0	0	3	3
14	23NE984	Integrated Energy Planning for Sustainable Development	NEC	3	0	0	3	3

NON - DEPARTMENT ELECTIVE – MANAGEMENT COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23HS971	Total Quality Management	NEC	3	0	0	3	3
2	23HS972	Engineering Economics and Financial Accounting	NEC	3	0	0	3	3
3	23HS973	Engineering Management and Law	NEC	3	0	0	3	3
4	23HS974	Knowledge Management	NEC	3	0	0	3	3
5	23HS975	Industrial Management	NEC	3	0	0	3	3
6	23HS976	Entrepreneurship and Business Opportunities	NEC	3	0	0	3	3

| 7 | 23HS977 | Modern Business Administration and Financing | NEC | 3 | 0 | 0 | 3 | 3 |
| 8 | 23HS978 | Essentials of Management | NEC | 3 | 0 | 0 | 3 | 3 |

NON - DEPARTMENT ELECTIVE – SAFETY COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23HS979	Disaster Management	NEC	3	0	0	3	3
2	23HS980	Industrial Safety	NEC	3	0	0	3	3
3	23HS981	Automotive Safety	NEC	3	0	0	3	3

SEMESTER-WISE CREDIT DISTRIBUTION

SEMESTER	HSMC	BSC	ESC	PCC	DEC	NEC	EEC	Total
Semester I	5	11	5					21
Semester II	4	7	9	5				25
Semester III	3	4		17				24
Semester IV		4		16	3		1	24
Semester V			2	13	3	3	2	23
Semester VI			5	6	6	3	3	23
Semester VII			2	4	6	3	5	20
Semester VIII							10	10
KCG - Civil	12	26	23	61	18	9	21	170