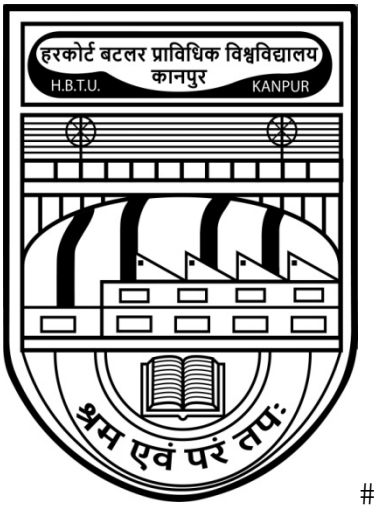
SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

CIVIL ENGINEERING

(Effective from the session 2017-18 for new entrants)



HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

Vision

To position as a global leader in Civil Engineering teaching, research, innovation and extension activities; for sustainable growth of economy with a meaningful and lasting impact on the society.

Mission

- Imparting quality academics in Civil Engineering Education.
- Carrying out high quality applied research and innovation in Civil Engineering with due considerations for sustainability.
- Imparting extension activities in form of consultancy, continuing education thereby leading to capacity building.
- Enhancing linkages with alumni and industry.

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B.TECH. CIVIL ENGINEERING

I SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BPH 101	Physics	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA 101	Maths -I	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EEE 101	Electrical Engg.	4(3-0-2)	15	20	15	50	50	100
4.	ESC	EME 101	Engg. Mechanics	3(3-0-0)	30	20	-	50	50	100
5.	HSMC	HHS 103	Professional Communication	3(2-0-2)	15	20	15	50	50	100
6.	HSMC	HHS 101	English Language & Composition	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

II SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BCY 102	Engg. Chemistry	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA 102	Maths-II	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EET 102	Electronics & Instrumentation Engg.	3(3-0-0)	30	20	-	50	50	100
4.	ESC	ECE 102	Engg. Graphics	3(0-0-6)	30	20	-	50	50	100
5.	ESC	ECS 102	Computer Concept & C Programming	4(3-0-2)	15	20	15	50	50	100
6.	ESC	EWS 102	Workshop Practice	2(0-0-4)	-	20	30	50	50	100
7.	MC (Non-credit)	ECE 104	Environment and Ecology	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

III SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BMA 201	Maths-III	4(3-1-0)	30	20	-	50	50	100
2.	ESC	EME 201	Strength of Material	5(3-1-2)	15	20	15	50	50	100
3.	PCC	ECE 201	Building Material & Construction	4(3-0-2)	15	20	15	50	50	100
4.	PCC	ECE-203	Surveying-I	4(2-1-2)	15	20	15	50	50	100
5	PCC	ECE-205	Engineering Geology	2(2-0-0)	15	20	15	50	50	100
6.	HSMC	HHS 201	Engineering Economics & Management	3(3-0-0)	30	20	-	50	50	100
7.	MC (Non-credit)	HHS 205	Indian Constitution	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

IV SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BMA 206	CONM	4(3-1-0)	30	20	-	50	50	100
2.	ESC	ECE 202	Engineering Fluid Mechanics	5(3-1-2)	15	20	15	50	50	100
3.	PCC	ECE-204	Structural Analysis-I	3(2-1-0)	30	20	-	50	50	100
4.	PCC	ECE-206	Design of Concrete Structure-I	4(2-1-2)	15	20	15	50	50	100
5.	PCC	ECE-208	Surveying-II	3(2-1-0)	30	20	-	50	50	100
6.	HSMC	HHS-204	Organisational Behaviour	3(3-0-0)	30	20	-	50	50	100
7.	MC (Non-credit)	ECS 206	Cyber Security	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

V SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	ECE-301	Hydraulics and Hydraulics Machine	4(2-1-2)	15	20	15	50	50	100
2.	PCC	ECE-303	Geotech Engg.-I	4(2-1-2)	15	20	15	50	50	100
3.	PCC	ECE-305	Structural Analysis-II	5(3-1-2)	15	20	15	50	50	100
4.	PCC	ECE-307	Design of Concrete Structure-II	3(2-1-0)	30	20	-	50	50	100
5.	PCC	ECE-309	Transportation Engg-I	3(2-1-0)	30	20	-	50	50	100
6.	OEC (Maths)	BMA 341	Operation Research	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

VI SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	ECE-302	Design of Steel Structure	4(3-1-0)	30	20	-	50	50	100
2.	PCC	ECE-304	Transportation Engineering -II	3(2-0-2)	15	20	15	50	50	100
3.	PCC	ECE-306	Engineering Hydrology	3(2-1-0)	30	20	-	50	50	100
4.	PCC	ECE-308	Environmental Engineering-I	3(2-1-0)	30	20	-	50	50	100
5.	PCC	ECE-310	Geotech. Engineering-II	3(2-1-0)	30	20	-	50	50	100
6.	PCC	ECE-312	Irrigation & Hydraulic Design	3(3-0-0)	30	20	-	50	50	100
7.	OEC (Humanities)	HHS-342	Entrepreneurship Development	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

VII SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	ECE-401	Estimation Construction & Management	2(2-0-0)	30	20	-	50	50	100
2.	PCC	ECE-403	Environmental Engineering-II	3(2-0-2)	15	20	15	50	50	100
3.	PEC	PEC-I	PEC-I	3(3-0-0)	30	20	-	50	50	100
4.	PEC	PEC-II	PEC-II	3(3-0-0)	30	20	-	50	50	100
5.	OEC	OEC-I	OEC-I	3(3-0-0)	30	20	-	50	50	100
6.	Industrial Training	ECE-461	Industrial Training	2(0-0-4)	-	50	-	50	50	100
7.	Seminar	ECE-471	Seminar	2(0-0-4)	-	50	-	50	50	100
8.	Project	ECE-497	Project	4(0-0-8)	-	50	-	50	50	100
Total Credits				**22**						

VIII SEMESTER

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1.	PEC	PEC-III	PEC-III	4(3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-IV	PEC-IV	4(3-1-0)	30	20	-	50	50	100
3.	OEC	OEC-II	OEC-II	4(3-1-0)	30	20	-	50	50	100
4.	Project	ECE 498	Project	10(0-0-20)	-	50	-	50	50	100
Total Credits				**22**						

Total Programme Credits : 172

ECE 497 Project will have Internal Evaluation while ECE 498 Project will have External Evaluation.

Department of Civil Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	ECE-451	Bridge Engineering	3(3-0-0)
2.	ECE-453	Water Quality Modelling	3(3-0-0)
3.	ECE-455	Transportation System and Planning	3(3-0-0)
4.	ECE-457	Soil Dynamics	3(3-0-0)
5.	ECE-459	Structural Fire Engineering	3(3-0-0)
6.	ECE-463	Advanced Design of Steel Structures	3(3-0-0)

Programme Elective-II

1.	ECE-465	Environmental Management	3(3-0-0)
2.	ECE-467	Water Resources Management	3(3-0-0)
3.	ECE-469	Structural Dynamics	3(3-0-0)
4.	ECE-473	Computer Aided Structural Engineering	3(3-0-0)
5.	ECE-475	Pre-Stressed Concrete Design	3(3-0-0)
6.	ECE-477	Geo- Environmental and Geo- Hazard Engineering	3(3-0-0)

Programme Elective-III

1.	ECE-452	Design of Wastewater Treatment Systems	4(3-1-0)
2.	ECE-454	Environmental Pollution Control	4(3-1-0)
3.	ECE-456	Traffic Engineering	4(3-1-0)
4.	ECE-458	Advanced Foundation Design	4(3-1-0)
5.	ECE-460	Advanced Concrete Technology	4(3-1-0)
6.	ECE-462	RS and GIS Applications in Civil Engineering	4(3-1-0)

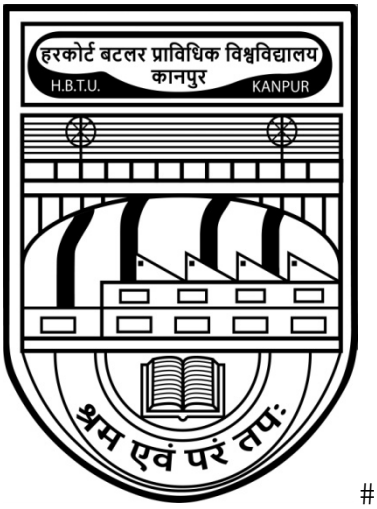
Programme Elective-IV

1.	ECE-476	Open Channel and River Hydraulics	4(3-1-0)
2.	ECE-478	Advanced Hydrology	4(3-1-0)
3.	ECE-480	Planning and Management of Building	4(3-1-0)
4.	ECE-482	Construction and Contract Management	4(3-1-0)
5.	ECE-484	Precast and Modular Construction Practices	4(3-1-0)
6.	ECE-486	Earthquake Resistant Design Systems	4(3-1-0)

SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

COMPUTER SCIENCE AND ENGINEERING

(Effective from the session 2017-18 for new entrants)



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HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

Vision

To excel in Computer Science & Engineering education, research, innovation and global employability.

Mission

- Achieve academic excellence in Computer Science & Engineering through an innovative teaching-learning process.
- Inculcate technical competence and collective discipline in students to excel for global employability, higher education and societal needs.
- Establish focus research groups in leading areas of Computer Science & Engineering.
- Sustain quality in Computer Science & Engineering education & research through continuous & rigorous assessment.

Program Educational Objectives (PEOs)

1. To inculcate professional culture amongst the students to take up technical/professional positions for design, development, and problem solving in software industries and R&D organizations.
2. To prepare students as technical, ethical, responsible solution providers and entrepreneurs in various areas of Computer Science & Engineering.
3. To provide the necessary competence and capability in students to pursue higher studies in Institutions of International/National repute.
4. To provide analytical and technical ability to develop and innovate systems and technologies in the leading areas of Computer Science & Engineering.

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SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B.TECH. COMPUTER SCIENCE & ENGINEERING

SEMESTER I

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	BSC	BPH-101	Physics	4 (3-0-2)	15	20	15	50	50	100
2	BSC	BMA-101	Mathematics-I	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EEE-101	Electrical Engineering	4 (3-0-2)	15	20	15	50	50	100
4	ESC	EME-101	Engineering Mechanics	3 (3-0-0)	30	20	-	50	50	100
5	HSMC	HHS-103	Professional Communication	3 (2-0-2)	15	20	15	50	50	100
6	HSMC	HHS-101	English Language & Composition	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

SEMESTER II

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	BSC	BCY-102	Engineering Chemistry	4 (3-0-2)	15	20	15	50	50	100
2	BSC	BMA-102	Mathematics-II	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EET-102	Electronics & Instrumentation Engineering	3 (3-0-0)	30	20	-	50	50	100
4	ESC	ECE-102	Engineering Graphics	3 (0-0-6)	30	20	-	50	50	100
5	ESC	ECS-102	Computer Concepts & 'C' Programming	4 (3-0-2)	15	20	15	50	50	100
6	ESC	EWS-102	Workshop Practice	2 (0-0-4)	-	20	30	50	50	100
7	MC (Non-credit)	ECE-104	Environment & Ecology	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

SEMESTER III

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-201	Data Structure using C	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-203	Computer Organisation& Architecture	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EET-203	Digital Electronics	5 (3-1-2)	15	20	15	50	50	100
4	BSC	BMA-203	Computer Oriented Numerical & Statistical Techniques	5 (3-1-2)	15	20	15	50	50	100
5	HSMC	HHS-201	Engineering Economics & Management	3 (3-0-0)	30	20	-	50	50	100
6	MC (Non-credit)	HHS-205	Indian Constitution	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER IV

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-202	Software Engineering	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-204	Object Oriented Systems	5 (3-1-2)	15	20	15	50	50	100
3	ESC	EIT-202	Web Technology	5 (3-1-2)	15	20	15	50	50	100
4	BSC	BMA-204	Discrete Mathematical Structures	4 (3-1-0)	30	20	-	50	50	100
5	HSMC	HHS-204	Organisational Behaviour	3 (3-0-0)	30	20	-	50	50	100
6	MC (Non-credit)	ECS-206	Cyber Security	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER V

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-301	Design & Analysis of Algorithms	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-303	Database Management Systems	5 (3-1-2)	15	20	15	50	50	100
3	PCC	ECS-305	Theory of Automata & Formal Languages	4 (3-1-0)	30	20	-	50	50	100
4	PCC	ECS-307	Principles of Programming Languages	5 (3-1-2)	15	20	15	50	50	100
5	OEC (Maths)	BMA-341	Operation Research	3 (3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VI

Sr. No	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-302	Computer Networks	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-304	Operating Systems	5 (3-1-2)	15	20	15	50	50	100
3	PCC	ECS-306	Compiler Design	4 (3-1-0)	30	20	-	50	50	100
4	PCC	ECS-308	Computer Graphics	5 (3-1-2)	15	20	15	50	50	100
5	OEC (HSS)	HHS-342	Entrepreneurship Development	3 (3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VII

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-401	Artificial Intelligence	4 (3-1-0)	30	20	-	50	50	100
2	PEC	PEC-I	PEC-I	4 (3-1-0)	30	20	-	50	50	100
3	PEC	PEC-II	PEC-II	3 (3-0-0)	30	20	-	50	50	100
4	OEC	OEC- I	OEC-I	3 (3-0-0)	30	20	-	50	50	100
5	Seminar	ECS-471	Seminar	2 (0-0-4)	-	50	-	50	50	100
6	Industrial Training	ECS-461	Industrial Training	2 (0-0-4)	-	50	-	50	50	100
7	Project	ECS-497	Project	4 (0-0-8)	-	50	-	50	50	100
Total Credits				**22**						

SEMESTER VIII

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PEC	PEC-III	PEC-III	4 (3-1-0)	30	10	-	50	50	100
2	PEC	PEC-IV	PEC-IV	4 (3-1-0)	30	10	-	50	50	100
3	OEC	OEC- II	OEC-II	4 (3-1-0)	30	10	-	50	50	100
4	Project	ECS-498	Project	10 (0-0-20)	-	50	-	50	50	100
Total Credits				**22**						

Total Programme Credits: 172

ECS 497 Project will have Internal Evaluation while ECS 498 Project will have External Evaluation.

Department of Computer Science & Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1	EIT-411	Mobile Application Development	4 (3-1-0)
2	ECS-411	Data Warehousing & Data Mining	4 (3-1-0)
3	ECS-413	Cloud Computing	4 (3-1-0)
4	ECS-415	Advance Computer Architecture	4 (3-1-0)

Programme Elective-II

1	ECS-431	Network Security	3 (3-0-0)
2	ECS-433	Digital Image Processing	3 (3-0-0)
3	ECS-435	Real Time Systems	3 (3-0-0)
4	ECS-437	Machine Learning	3 (3-0-0)

Programme Elective-III

1.	EIT-412	Mobile Computing	4 (3-1-0)
2.	ECS-412	Embedded Systems	4 (3-1-0)
3.	ECS-414	Big Data Analytics	4 (3-1-0)
4.	ECS-416	Distributed Systems	4 (3-1-0)

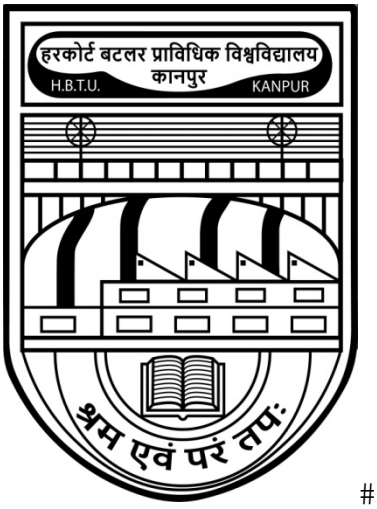
Programme Elective-IV

1.	EIT-432	Internet of Things	4 (3-1-0)
2.	ECS-434	Software Project Management	4 (3-1-0)
3.	ECS-436	Software Quality Engineering	4 (3-1-0)
4.	ECS-438	Soft Computing	4 (3-1-0)

SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

INFORMATION TECHNOLOGY

(Effective from the session 2017-18 for new entrants)



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HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B.TECH. INFORMATION TECHNOLOGY

SEMESTER I

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	BSC	BPH-101	Physics	4 (3-0-2)	15	20	15	50	50	100
2	BSC	BMA-101	Mathematics-I	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EEE-101	Electrical Engineering	4 (3-0-2)	15	20	15	50	50	100
4	ESC	EME-101	Engineering Mechanics	3 (3-0-0)	30	20	-	50	50	100
5	HSMC	HHS-103	Professional Communication	3 (2-0-2)	15	20	15	50	50	100
6	HSMC	HHS-101	English Language & Composition	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

SEMESTER II

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	BSC	BCY-102	Engineering Chemistry	4 (3-0-2)	15	20	15	50	50	100
2	BSC	BMA-102	Mathematics-II	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EET-102	Electronics & Instrumentation Engineering	3 (3-0-0)	30	20	-	50	50	100
4	ESC	ECE-102	Engineering Graphics	3 (0-0-6)	30	20	-	50	50	100
5	ESC	ECS-102	Computer Concepts & Programming	4 (3-0-2)	15	20	15	50	50	100
6	ESC	EWS-102	Workshop Practice	2 (0-0-4)	-	20	30	50	50	100
7	MC (non-credit)	ECE-104	Environment & Ecology	2 (2-0-0)	30	20	-	50	50	50
Total Credits				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

SEMESTER III

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-201	Data Structure using C	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-203	Computer Organisation& Architecture	4 (3-1-0)	30	20	-	50	50	100
3	ESC	EET-203	Digital Electronics	5 (3-1-2)	15	20	15	50	50	100
4	BSC	BMA-203	Computer Oriented Numerical & Statistical Techniques	5 (3-1-2)	15	20	15	50	50	100
5	HSMC	HHS-201	Engineering Economics & Management	3 (3-0-0)	30	20	-	50	50	100
6	MC (Non-credit)	HHS-205	Indian Constitution	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER IV

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-202	Software Engineering	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-204	Object Oriented Systems	5 (3-1-2)	15	20	15	50	50	100
3	ESC	ECS-208	Internet & Web Technology	5 (3-1-2)	15	20	15	50	50	100
4	BSC	BMA-204	Discrete Mathematical Structures	4 (3-1-0)	30	20	-	50	50	100
5	HSMC	HHS-204	Organisational Behaviour	3 (3-0-0)	30	20	-	50	50	100
6	MC (Non-credit)	ECS-206	Cyber Security	2 (2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER V

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-301	Design & Analysis of Algorithms	5 (3-1-2)	15	20	15	50	50	100
2	PCC	ECS-303	Database Management Systems	5 (3-1-2)	15	20	15	50	50	100
3	PCC	ECS-305	Theory of Automata & Formal Languages	4 (3-1-0)	30	20	-	50	50	100
4	PCC	ECS-307	Principles of Programming Languages	5 (3-1-2)	15	20	15	50	50	100
5	OEC (Maths)	BMA-341	Operation Research	3 (3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VI

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	ECS-302	Computer Networks	5 (3-1-2)	15	20	15	50	50	100
2	PCC	EIT-304	Software Project Management	5 (3-1-2)	15	20	15	50	50	100
3	PCC	ECS-306	Compiler Design	4 (3-1-0)	30	20	-	50	50	100
4	PCC	ECS-304	Operating Systems	5 (3-1-2)	15	20	15	50	50	100
5	OEC (HSS)	HHS-342	Entrepreneurship Development	3 (3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VII

Sr. No.	Course Type	Course Code	Course Name	Credits	Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PCC	EIT-401	Cryptography & Network Security	4 (3-1-0)	30	20	-	50	50	100
2	PEC	PEC-I	PEC-I	4 (3-1-0)	30	20	-	50	50	100
3	PEC	PEC-II	PEC-II	3 (3-0-0)	30	20	-	50	50	100
4	OEC	OEC-I	OEC-I	3 (3-0-0)	30	20	-	50	50	100
5	Industrial Training	EIT-461	Industrial Training	2 (0-0-4)	-	50	-	50	50	100
5	Seminar	EIT-471	Seminar	2 (0-0-4)	-	50	-	50	50	100
6	Project	EIT-497	Project	4 (0-0-8)	-	50	-	50	50	100
Total Credits				**22**						

SEMESTER VIII

Sr. No.	Course Type	Course Code	Course Name	Credits	Details of Sessional Marks				ESM	Total Marks
					MSE	TA	Lab	Total		
1	PEC	PEC-III	PEC-III	4 (3-1-0)	30	20	-	50	50	100
2	PEC	PEC-IV	PEC-IV	4 (3-1-0)	30	20	-	50	50	100
3	OEC	OCE-II	OEC-II	4 (3-1-0)	30	20	-	50	50	100
4	Project	EIT-498	Project	10 (0-0-20)	-	50	-	50	50	100
Total Credits				**22**						

Total Programme Credits: 172

EIT 497 Project will have Internal Evaluation while EIT 498 Project will have External Evaluation.

Department of Information Technology
(to be offered in VII & VIII Semester)

Programme Elective-I

S.No.	Course Code	Course Name	Credits
1	EIT-411	Mobile Application Development	4 (3-1-0)
2	EIT-413	Information Storage & Retrieval	4 (3-1-0)
3	ECS-413	Cloud Computing	4 (3-1-0)
4	ECS-411	Data Warehousing & Mining	4 (3-1-0)

Programme Elective-II

1	EIT-431	ERP systems	3 (3-0-0)
2	ECS-433	Digital Image Processing	3 (3-0-0)
3	ECS-435	Real Time Systems	3 (3-0-0)
4	ECS-437	Machine Learning	3 (3-0-0)

Programme Elective-III

1	EIT-412	Mobile Computing	4 (3-1-0)
2	ECS-412	Embedded System	4 (3-1-0)
3	ECS-414	Big Data Analytics	4 (3-1-0)
4	EIT-414	Virtual Reality	4 (3-1-0)

Programme Elective-IV

1	ECS-432	Software Testing	4 (3-1-0)
2	ECS-436	Software Quality Engineering	4 (3-1-0)
3	ECS-438	Soft Computing	4 (3-1-0)
4	EIT-432	Internet of Things	4 (3-1-0)

SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

ELECTRICAL ENGINEERING

(Effective from the session 2017-18 for new entrants)

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HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

Vision

To achieve excellence in Electrical Engineering education, research and innovation.

Mission

- Imparting Knowledge to develop analytical ability in Electrical Engineering to serve the industry and society at large.
- Equip and enable students with conceptual, technical and managerial skills in Electrical Engineering to transform the organization and society.
- Inculcating entrepreneurial philosophy and innovative thinking in Electrical Engineering to promote research, consultancy and institutional social responsibility.
- Serving people, society and nation with utmost professionalism, values and ethics to make sustainable developments in Electrical Engineering to improve the quality of life.

Program Educational Objectives (PEOs)

1. To equip and enable students with conceptual, technical and managerial skills in Electrical Engineering to fulfill the requirements and challenges of higher technical education, industries and society at local, national and international levels.
2. To inculcate entrepreneurial philosophy and innovative thinking in Electrical Engineering to promote research, consultancy and institutional social responsibility in a team-frame.
3. To train the students for serving the people, society and nation with utmost professionalism, values and ethics to make sustainable developments in Electrical Engineering to improve the quality of life.

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B. TECH. ELECTRICAL ENGINEERING

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	BSC	BPH-101	Physics	4 (3-0-2)	15	20	15	50	50	100
2.	BSC	BMA-101	Maths-I	4 (3-1-0)	30	20	-	50	50	100
3.	ESC	EEE- 101	Electrical Engg.	4 (3-0-2)	15	20	15	50	50	100
4.	ESC	EME-101	Engg. Mechanics	3 (3-0-0)	30	20	-	50	50	100
5.	HSMC	HHS-103	Professional Communication	3 (2-0-2)	15	20	15	50	50	100
6.	HSMC	HHS-101	English Language and Composition	2 (2-0-0)	30	20	-	50	50	100
Total Credit				**20**						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	BSC	BCY-102	Engineering Chemistry	4 (3-0-2)	15	20	15	50	50	100
2.	BSC	BMA-102	Maths-II	4 (3-1-0)	30	20	-	50	50	100
3.	ESC	EET-102	Electronics & Instrumentation Engg.	3 (3-0-0)	30	20	-	50	50	100
4.	ESC	ECE-102	Engg. Graphics	3 (0-0-6)	30	20	-	50	50	100
5.	ESC	ECS-102	Computer Concept & C Programming	4 (3-0-2)	15	20	15	50	50	100
6.	ESC	EWS-102	Workshop Practice	2 (0-0-4)	-	20	30	50	50	100
7.	MC (Non-credit)	ECE-104	Environment and Ecology	2 (2-0-0)	30	20	-	50	50	100
Total Credit				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	BSC	BMA-201	Maths-III	4 (3-1-0)	30	20	-	50	50	100
2.	ESC	EET-201	SSDC	5 (3-1-2)	15	20	15	50	50	100
3.	ESC	EET-203	Digital Electronics	5 (3-1-2)	15	20	15	50	50	100
4.	PCC	EEE-201	BSA	5 (3-1-2)	15	20	15	50	50	100
5.	HSMC	HHS-201	Engineering Economics and Management	3 (3-0-0)	30	20	-	50	50	100
6.	MC (Non-credit)	HHS-205	Indian Constitution	2 (2-0-0)	30	20	-	50	50	100
Total Credit				**22**						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	BSC	BMA-206	CONM	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	EEE-206	Electrical Circuit Analysis	5 (3-1-2)	15	20	15	50	50	100
3.	PCC	EEE-202	Electrical Machines-I	5 (3-1-2)	15	20	15	50	50	100
4.	PCC	EEE-204	EMMI	5 (3-1-2)	15	20	15	50	50	100
5.	HSMC	HHS-204	Organizational Behaviour	3 (3-0-0)	30	20	-	50	50	100
6.	MC (Non-credit	ECS-202	Cyber Security	2 (2-0-0)	30	20	-	50	50	100
Total Credit				**22**						

SEMESTER V

Sr. No.	Course Type	Subject Code	Course Title	Credits	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	PCC	EEE-301	Electrical Machines-II	5 (3-1-2)	15	20	15	50	50	100
2.	PCC	EEE-303	Control System	5 (3-1-2)	15	20	15	50	50	100
3.	PCC	EEE-305	Power System-I	4 (3-1-0)	30	20	-	50	50	100
4.	PCC	EEE-307	Microprocessors	5 (3-1-2)	15	20	15	50	50	100
5.	OEC (Maths)	BMA-341	Operation Research	3 (3-0-0)	30	20	-	50	50	100
Total Credit				**22**						

SEMESTER VI

Sr. No.	Course Type	Subject Code	Course Title	Credits	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	PCC	EEE-302	Power System-II	5 (3-1-3)	15	20	15	50	50	100
2.	PCC	EEE-304	Power Electronics	6 (3-2-2)	15	20	15	50	50	100
3.	PCC	EEE-306	Power Station Practice	4 (3-1-0)	30	20	-	50	50	100
4.	PCC	EET-310	Electromagnetic Field Theory	4 (3-1-0)	30	20	-	50	50	100
5.	OEC (Humanities)	HHS-342	Entrepreneurship Development	3 (3-0-0)	30	20	-	50	50	100
Total Credit				**22**						

SEMESTER VII

Sr. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	PCC	EEE-401	Electric Drives	5 (3-1-2)	15	20	15	50	50	100
2.	PEC	PEC-I	PEC-I	3 (3-0-0)	30	20	-	50	50	100
3.	PEC	PEC-II	PEC-II	3 (3-0-0)	30	20	-	50	50	100
4.	OEC	OEC-I	OEC-I	3 (3-0-0)	30	20	-	50	50	100
5.	Industrial Training	EEE-461	Industrial Training	2 (0-0-4)	-	50	-	50	50	100
6.	Seminar	EEE-471	Seminar	2 (0-0-4)	-	50	-	50	50	100
7.	Project	EEE-497	Project	4 (0-0-8)	-	50	-	50	50	100
Total Credit				**22**						

SEMESTER VIII

Sr. No.	Course Type	Subject Code	Course Title	Credits	Sessional Marks				ESE	Total
					MSE	TA	Lab	Total		
1.	PEC	PEC-III	PEC-III	4 (3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-IV	PEC-IV	4 (3-1-0)	30	20	-	50	50	100
3.	OEC	OEC-II	OEC-II	4 (3-1-0)	30	20	-	50	50	100
4.	Project	EEE-498	Project	10 (0-0-20)	-	50	-	50	50	100
Total Credit				**22**						

Total Programme Credits : 172

EEE-497 Project will have Internal Evaluation while EEE-498 Project will have External Evaluation.

Department of Electrical Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	EEE-411	Instrumentation and Process Control	3 (3-0-0)
2.	EEE-413	HVDC Transmission Systems	3 (3-0-0)
3.	EEE-415	Special Topics in Control Systems	3 (3-0-0)
4.	EEE-417	Electrical Energy Conservation and Auditing	3 (3-0-0)
5.	EEE-419	Power System Design	3 (3-0-0)
6.	EEE-421	Advanced Power Electronics	3 (3-0-0)

Programme Elective-II

1.	EEE-423	Advanced control System	3 (3-0-0)
2.	EEE-425	Special Electrical Machines	3 (3-0-0)
3.	EEE-427	Optimal Control System	3 (3-0-0)
4.	EEE-429	Power System Protection	3 (3-0-0)
5.	EEE-431	Electrical Machine Design	3 (3-0-0)
6.	EEE-433	Real Time Simulation Techniques of Power Electronic Converters	3 (3-0-0)

Programme Elective-III

1.	EEE-440	Neural Network and Fuzzy System	4 (3-1-0)
2.	EEE-442	Power System Security and Analysis	4 (3-1-0)
3.	EEE-444	Applied System Theory	4 (3-1-0)
4.	EEE-446	Power Quality and FACTS	4 (3-1-0)
5.	EEE-448	Wind and Solar Energy Systems	4 (3-1-0)
6.	EEE-450	Modeling and Simulation Electrical Machines	4 (3-1-0)

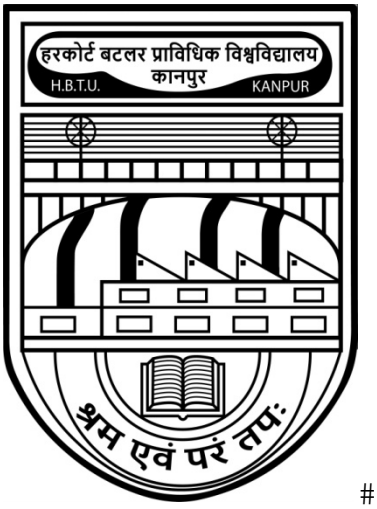
Programme Elective-IV

1.	EEE-452	Robotics and Automation	4 (3-1-0)
2.	EEE-454	Power System Dynamics and Control	4 (3-1-0)
3.	EEE-456	Industrial Instrumentation	4 (3-1-0)
4.	EEE-458	Electrical and Electronics Engineering Materials	4 (3-1-0)
5.	EEE-460	Electrical and Hybrid Vehicles	4 (3-1-0)
6.	EEE-462	Advanced Electric Drives	4 (3-1-0)

SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

ELECTRONICS ENGINEERING

(Effective from the session 2017-18 for new entrants)



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HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

Vision

Department of Electronics Engineering aims to deliver Technical Education in the field of Electronics and Communication Engineering, for producing Engineers and Technologists who are happy, healthy and competent professionals, motivated to serve the society through research & innovation.

Mission

- To educate and train the students with state-of-the-art in Electronics and Communication Engineering.
- To prepare the students who are fit for meeting the requirements and challenges of the Industry right at the time of their graduation by evolving a sustainable Industry-University interaction system for this.
- To upgrade the teaching standards through continued efforts toward improvement of the qualification and expertise of the teachers as well as supporting staff.
- To create awareness amongst the students towards socio-environmental technologies by offering related courses and organizing seminars/workshops on these topics in the university and by encouraging participation in similar activities at other places.
- To expand research and development activities in the frontier areas related to Electronics and Communication.
- To include the aspect of integration of environmental balance and human values in the curriculum.
- To provide academic support to others technical institutions at state & national level through the process of networking.
- To start social service programs like education for masses, particularly using the enhanced means of communication.

Program Educational Objectives (PEOs)

1. Give knowledge of basic and applied sciences, so as to apply the necessary competence for technically sound, economically feasible and socially acceptable solutions of real life complex engineering problems.
2. Fit for meeting the requirements and challenges of industries, research and academic institutions both at the national and International level, by applying expertise gained in area of electronics and communication engineering.
3. Professionally competent with excellent communication and management skills along with being enterprising professionals and responsible citizens capable of delivering their services individually as well as in a collaborative framework.

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B.TECH. ELECTRONICS ENGINEERING

SEMESTER I

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BPH-101	Physics	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA-101	Mathematics-I	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EEE-101	Electrical Engineering	4(3-0-2)	15	20	15	50	50	100
4.	ESC	EME-101	Engineering Mechanics	3(3-0-0)	30	20	-	50	50	100
5.	HSMC	HHS-103	Professional Communication	3(2-0-2)	15	20	15	50	50	100
6.	HSMC	HHS-101	English Language and Composition	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

SEMESTER II

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BCY-102	Engineering Chemistry	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA-102	Mathematics -II	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EET-102	Electronics & Instrumentation Engineering	3(3-0-0)	30	20	-	50	50	100
4.	ESC	ECE-102	Engineering Graphics	3(0-0-6)	30	20	-	50	50	100
5.	ESC	ECS-102	Computer Concept &C Programming	4(3-0-2)	15	20	15	50	50	100
6.	ESC	EWS-102	Workshop Practice	2(0-0-4)	-	20	30	50	50	100
7.	MC (Non-credit)	ECE-104	Environment and Ecology	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

SEMESTER III

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BMA-201	Mathematics -III	4(3-1-0)	30	20	-	50	50	100
2.	ESC	EEE-203	Electrical Circuit Analysis	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EET-201	Solid State Devices and Circuits	5(3-1-2)	15	20	15	50	50	100
4.	PCC	EET-203	Digital Electronics	5(3-1-2)	15	20	15	50	50	100
5.	HSMC	HHS-201	Engineering Economics & Management	3(3-0-0)	30	20	-	50	50	100
6.	MC (Non-credit)	HHS-205	Indian Constitution	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER IV

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	BSC	BMA-206	CONM	4(3-1-0)	30	20	-	50	50	100
2.	ESC	ECS- 201	Data Structures using C	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EET-202	Electromagnetic Field Theory	4(3-1-0)	30	20	-	50	50	100
4.	PCC	EET-204	Signal and Systems	4(3-1-0)	30	20	-	50	50	100
5.	HSMC	HHS-204	Organizational Behavior	3(3-0-0)	30	20	-	50	50	100
6.	PCC	EET-206	EWPCB Lab	2(0-0-4)	-	20	30	50	50	100
7.	MC (Non-credit)	ECS-206	Cyber Security	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER V

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	IEE-503	Control System	5(3-1-2)	15	20	15	50	50	100
2.	PCC	EET-301	Analog Communication	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EET-303	Antenna and Wave Propagation	5(3-1-2)	15	20	15	50	50	100
4.	PCC	EET-305	Microprocessors	4(3-0-2)	15	20	15	50	50	100
5.	OEC	BMA-341	Operation Research	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VI

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	EET-302	Analog Integrated Circuits	5(3-1-2)	15	20	15	50	50	100
2.	PCC	EET-304	Digital Communication	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EET-306	Advanced Instrumentation	4(3-1-0)	15	20	15	50	50	100
4.	PCC	EET-308	VLSI Design	5(3-1-2)	15	20	15	50	50	100
5.	OEC	HHS-342	Entrepreneurship Development	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VII

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	PCC	EET-401	Digital Signal Processing	5(3-1-2)	15	20	15	50	50	100
2.	PEC	PEC-I	PEC-I	3(3-0-0)	30	20	-	50	50	100
3.	PEC	PEC-II	PEC-II	3(3-0-0)	30	20	-	50	50	100
4.	OEC	OEC-I	OEC-I	3(3-0-0)	30	20	-	50	50	100
5.	Industrial Training	EET-461	Industrial Training	2(0-0-4)	-	50	-	50	50	100
6.	Seminar	EET-471	Seminar	2(0-0-4)	-	50	-	50	50	100
7.	Project	EET-497	Project	4(0-0-8)	-	50	-	50	50	100
Total Credits				**22**						

SEMESTER VIII

Sl. No.	Course Type	Subject Code	Course Title	Credits (LTP)	Sessional Marks				ESE	Total Marks
					MSE	TA	Lab	Total		
1.	PEC	PEC-III	PEC-III	4(3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-IV	PEC-IV	4(3-1-0)	30	20	-	50	50	100
3.	OEC	OEC-II	OEC-II	4(3-1-0)	30	20	-	50	50	100
4.	Project	EET-498	Project	10(0-0-20)	-	50	-	50	50	100
Total Credits				**22**						

Total Pragramme Credit: 172

EET 497 Project will have Internal Evaluation while EET 498 Project will have External Evaluation.

Department of Electronics Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1	EET-453	Bio Medical processing	3(3-0-0)
2	EET-455	Satellite Communication	3(3-0-0)
3	EET-457	Digital System Design using VHDL	3(3-0-0)
4	EET-459	Computer Networks	3(3-0-0)

Programme Elective-II

1	EET-475	Opto Electronics	3(3-0-0)
2	EET-477	Wireless Communication	3(3-0-0)
3	EET-479	VLSI Technology	3(3-0-0)
4	EET-481	Radar and Microwave Engineering	3(3-0-0)

Programme Elective-III

1	EET-452	AADSP	4(3-1-0)
2	EET-454	Information theory & coding	4(3-1-0)
3	EET-456	Advanced Semiconductor Devices	4(3-1-0)
4	EET-458	RF Systems	4(3-1-0)

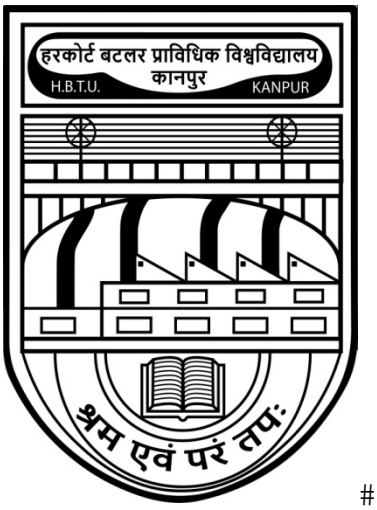
Programme Elective-IV

1	EET-476	Image Processing	4(3-1-0)
2	EET-478	Optical Fiber Communication	4(3-1-0)
3	EET-480	Embedded Systems	4(3-1-0)
4	EET-482	Data Analytics	4(3-1-0)

SEMESTER WISE COURSE STRUCTURE
&
EVALUATION SCHEME

MECHANICAL ENGINEERING

(Effective from the session 2017-18 for new entrants)



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HARCOURT BUTLER TECHNICAL UNIVERSITY

KANPUR-208002 (UP) – INDIA

Vision

To produce quality Mechanical Engineers with knowledge, skill and creativity to cater to the needs of the industry and society.

Mission

- To offer academic programs in tune with the requirements of the industry.
- To undertake research and development activities for solving real life problems.
- To provide conducive environment for promoting creativity and innovation.

Program Educational Objectives (PEOs)

1. To develop understanding of basic Mechanical Engineering concepts.
2. To inculcate analytical capabilities for solving real-life problems.
3. To provide opportunities to work as a team and to develop leadership qualities.
4. To develop entrepreneurial capabilities.
5. To encourage and motivate students for self- learning.

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
B.TECH. MECHANICAL ENGINEERING

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BPH 101	Physics	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA 101	Maths -I	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EEE 101	Electrical Engg.	4(3-0-2)	15	20	15	50	50	100
4.	ESC	EME 101	Engg. Mechanics	3(3-0-0)	30	20	-	50	50	100
5.	HSMC	HHS 103	Professional Communication	3(2-0-2)	15	20	15	50	50	100
6.	HSMC	HHS 101	English Language & Composition	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BCY 102	Engg. Chemistry	4(3-0-2)	15	20	15	50	50	100
2.	BSC	BMA 102	Maths-II	4(3-1-0)	30	20	-	50	50	100
3.	ESC	EET 102	Electronics & Instrumentation Engg.	3(3-0-0)	30	20	-	50	50	100
4.	ESC	ECE 102	Engg. Graphics	3(0-0-6)	30	20	-	50	50	100
5.	ESC	ECS 102	Computer Concept & Programming	4(3-0-2)	15	20	15	50	50	100
6.	ESC	EWS 102	Workshop Practice	2(0-0-4)	-	20	30	50	50	100
7.	MC (Non-credit)	ECE 104	Environment and Ecology	2(2-0-0)	30	20	-	50	50	100
Total Credits				**20**						

BSC- Basic Science Course; ESC-Engineering Science Course; PCC-Programme Core course; PEC-Programme Elective Course; OEC-Open Elective Course; MC-Mandatory Course; HSMC-Humanities, Social Science & Management Course

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BMA 201	Maths-III	4(3-1-0)	30		-	50	50	100
2.	ESC	EME 201	Strength of Material	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EME 203	Material Science	4(3-0-2)	15	20	15	50	50	100
4.	PCC	EME 205	Engineering Thermodynamics	4(3-1-0)	30	20	-	50	50	100
5.	PCC	EME 207	Machine Drawing	2(0-0-4)	-	20	30	50	50	100
6.	HSMC	HHS 201	Engg. Economics & Management	3(3-0-0)	30	20	-	50	50	100
7.	MC (Non-credit)	HHS 205	Indian Constitution	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	BSC	BMA 206	CONM	4(3-1-0)	30	20	-	50	50	100
2.	ESC	ECE 202	Engineering Fluid Mechanics	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EME 202	Manufacturing Science-I	5(3-1-2)	15	20	15	50	50	100
4.	PCC	EME 206	Applied Thermodynamics	4(3-1-0)	30	20	-	50	50	100
5.	PCC	EME 208	Kinematics of Machine	4(3-1-0)	30	20	-	50	50	100
6.	MC (Non-credit)	ECS 202	Cyber Security	2(2-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER V

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME 301	Manufacturing Science-II	5(3-1-2)	15	20	15	50	50	100
2.	PCC	EME 303	Heat & Mass Transfer	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EME 305	Dynamics of Machine	5(3-1-2)	15	20	15	50	50	100
4.	PCC	EME 307	Machine Design-I	4(3-0-2)	15	20	15	50	50	100
5.	OEC (Maths)	BMA 341	Operation Research	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VI

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME 302	Fluid Machinery	5(3-1-2)	15	20	15	50	50	100
2.	PCC	EME 304	Machine Design II	5(3-1-2)	15	20	15	50	50	100
3.	PCC	EME 306	Computer Aided Design	5(3-1-2)	15	20	15	50	50	100
4.	PCC	EME 310	I C Engine & Energy Conversion	4(3-0-2)	15	20	15	50	50	100
5.	OEC (Humanities)	HHS 342	Entrepreneurship Development	3(3-0-0)	30	20	-	50	50	100
Total Credits				**22**						

SEMESTER VII

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME 401	Refrigeration & Air Conditioning	4(3-0-2)	15	20	15	50	50	100
2.	PEC	PEC-I	PEC-I	4(3-1-0)	30	20	-	50	50	100
3.	PEC	PEC-II	PEC-II	3(3-0-0)	30	20	-	50	50	100
4.	OEC	OEC-I	OEC-I	3(3-0-0)	30	20	-	50	50	100
5.	Industrial Training	EME-461	Industrial Training	2(0-0-4)	-	50	-	50	50	100
6.	Seminar	EME-471	Seminar	2(0-0-4)	-	50	-	50	50	100
7.	Project	EME-497	Project	4(0-0-8)	-	50	-	50	50	100
Total Credits				**22**						

SEMESTER VIII

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PEC	PEC-III	PEC-III	4(3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-IV	PEC-IV	4(3-1-0)	30	20	-	50	50	100
3.	OEC	OEC-II	OEC-II	4(3-1-0)	30	20	-	50	50	100
4.	Project	EME-498	Project	10(0-0-20)	-	50	-	50	50	100
Total Credits				**22**						

Total Programme Credits : 172

EME 497 Project will have Internal Evaluation while EME 498 Project will have External Evaluation.

Department of Mechanical Engineering
(to be offered in VII & VIII Semester)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	EME-415	Finite Element Method	4(3-1-0)
2.	EME-417	Automobile Engineering	4(3-1-0)#
3.	EME-419	Measurement & Control	4(3-1-0)#
4.	EME-421	Computer Aided Manufacturing	4(3-1-0)#

Programme Elective-II

1.	EME-425	Advance Materials	3(3-0-0)
2.	EME-427	Mechanical Vibration	3(3-0-0)
3.	EME-429	Power Plant Engineering	3(3-0-0)
4.	EME-431	Production Planning & Control	3(3-0-0)
5.	EME-433	Non-conventional Energy Resources & Utilization	3(3-0-0)

Programme Elective-III

1.	EME-436	Non-Destructive Evaluation	4(3-1-0)
2.	EME-438	Non-conventional Manufacturing	4(3-1-0)
3.	EME-440	Product Design & Development	4(3-1-0)
4.	EME-442	Industrial Engineering	4(3-1-0)
5.	EME-444	Fracture Mechanics	4(3-1-0)

Programme Elective-IV

1.	EME-452	Rapid Prototyping & Rapid Tooling	4(3-1-0)
2.	EME-454	Machine Tool Design	4(3-1-0)
3.	EME-456	Optimization Methods in Engineering	4(3-1-0)
4.	EME-458	Experimental Stress Analysis	4(3-1-0)
5.	EME-460	Thermal Turbo Machines	4(3-1-0)

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List of Open Electives offered by Various Departments in VII & VIII Semester

School of Engineering

Name of Departments	OEC I			OEC II		
Computer Science & Engineering (CS / IT)	OCS 433	Machine Learning	3(3-0-0)#	OIT 444	Human Computer Interaction	4(3-1-0)
Electronics Engineering	OET 433	Mobile Communication	3(3-0-0)#	OET 444	Image Processing	4(3-1-0)#
	OET 435	Biomedical Electronics	3(3-0-0)#	OET 446	Fuzzy logic with Electronics Engineering applications	4(3-1-0)#
Electrical Engineering	OEE 433	Non-Conventional Energy Sources	3(3-0-0)#	OEE 444	Industrial Measurements	4(3-1-0)#
	OEE 435	Power Plant Engineering	3(3-0-0)#	OEE 446	Industrial Control Systems	4(3-1-0)#
Civil Engineering	OCE 433	Environmental Pollution and Management	3(3-0-0)#	OCE 444	Introduction to RS and GIS	4(3-1-0)#
	OCE 435	Disaster Management	3(3-0-0)#	OCE 446	Introduction to Infrastructure Engineering	4(3-1-0)#
Mechanical Engineering	OME 433	Solar Energy	3(3-0-0)#	OME 444	Alternative Energy Resources	4(3-1-0)#
	OME 435	Composite Materials	3(3-0-0)#	OME 446	Industrial Engineering & Automation	4(3-1-0)#

School of Chemical Technology

Name of Departments	OEC I			OEC II		
Chemical Engineering	OCH 433	Energy Resources and Utilization	3(3-0-0)#	OCH 446	Air Pollution Monitoring and Control	4(3-1-0)#
Bio-Chemical Engineering	OBE 433	Principal of Biochemical Engineering	3(3-0-0)	OCH 444	Transport Phenomenon	3(2-1-0)
Oil Technology	OOT 433	Technology of Oil, Oil Seeds & Surfactants	3(3-0-0)#	OCH 444	Transport Phenomenon	3(2-1-0)#
Plastic Technology	OPL 433	Introduction to Polymer Technology	3(3-0-0)#	OCH 444	Transport Phenomenon	3(2-1-0)#
Food Technology	OFT 433	Nutritional aspects of Natural & Processed Foods	3(3-0-0)#	OCH 444	Transport Phenomenon	3(2-1-0)#
Leather Technology	OLT 433	Introduction to Leather Technology	3(3-0-0)#	OCH 444	Transport Phenomenon	3(2-1-0)#
Paint Technology	OPT 433	Basic Paint Technology	3(3-0-0)#	OCH 444	Transport Phenomenon	3(2-1-0)#

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