GIRIJANANDA CHOWDHURY UNIVERSITY
Hathkhowapara, Azara, Guwahati-781017, Assam
School of Engineering & Technology
Department of Electronics and Communication Engineering

Program: B.Tech in Electronics and Communication Engineering

Total Credits: 160

SEMESTER I (Batch 2024 onwards)

Theory / Practical	Sl.No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	BSC	BCH23111	Chemistry	3	0	2	4
T	2.	BSC	BMA23111	Mathematics - I	3	1	0	4
T/P	3.	ESC	BCS23101	Programming for Problem Solving	2	0	4	4
T/P	4.	HSMC	BEN23102	English for Technical Communication	2	0	2	3
T	5.	MC	UHV23001	Universal Human Values	2	1	0	3
P	6.	ESC	BME23101	Manufacturing Practice Workshop-I	0	0	2	1
P	7.	HSM C	JPN23101	Communicative Japanese	0	0	2	1
				Total	**12**	**3**	**10**	**20**

Semester II (Batch 2024 onwards)

Theory / Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	BSC	BPY23111	Physics	3	1	2	5
T	2.	BSC	BMA23112	Mathematics – II	3	1	0	4
T	3.	BSC	BBI23101	Biology for Engineers	2	0	0	2
T/P	4.	ESC	BEL23101	Basic Electrical Engineering	3	1	2	5
P	5.	ESC	BCE23101	Engineering Graphics and Design	0	0	4	2
P	6.	ESC	BME23102	Programming with C++	0	0	2	1
P	7.	ESC	BME23103	Design Thinking & Idea Lab	0	0	2	1
P	8.	AUC	SYN23001	Sports/Yoga/NSS/NCC/Activities	0	0	2	0
				Total	**12**	**3**	**14**	**20**

***SYN23001 – SPORTS, SYN23002 – YOGA, SYN23003 – NSS, SYN23004 – NCC, SYN23005 – OTHER ACTIVITIES**

SEMESTER III **(Batch 2024 onwards)**

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	PCC	BEC23101	Electronic Devices	2	1	2	4
T/P	2.	PCC	BEC23102	Digital System Design	2	1	2	4
T/P	3.	PCC	BEC23103	Signals and Systems	2	1	2	4
T/P	4.	PCC	BEC23104	Network Theory	2	1	2	4
T	5.	BSC	BMA23212	Mathematics-III	2	1	0	3
T	6.	AU	BCH23112	Environmental Studies	2	0	0	0
Total					**12**	**5**	**8**	**19**

SEMESTER IV **(Batch 2024 onwards)**

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	PCC	BEC23201	Analog Circuits	2	1	2	4
T/P	2.	PCC	BEC23202	Microprocessor	3	0	2	4
T/P	3.	PCC	BEC23203	Analog communication	2	1	2	4
T/P	4.	PCC	BEC23204	Advanced Programming Language	3	0	2	4
T	5.	HSMC	BEC23206	Basics of Indian Knowledge System	2	0	0	2
P	6.	ESC	BEC23207	IoT / Robotics - Micro Project	0	0	2	1
Total					**14**	**3**	**10**	**19**

Semester V (AY 2024-2025)

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	PCC	BEC23301	Digital Signal Processing	2	1	2	4
T/P	2.	PCC	BEC23302	Microcontroller and Embedded Systems	3	0	2	4
T/P	3.	PCC	BEC23303	Digital Communication	2	1	2	4
T	4.	PCC	BEC23304	Electromagnetic Force	2	1	0	3
	5.	PCC	BEC23402	Control System	2	1	2	4
T	6.	HSM-4	BME24111	Entrepreneurship and startup	3	0	0	3
P	7.	PCC	BEC23306	Internship	0	0	0	1
				Total	**15**	**3**	**6**	**23**

Semester VI (AY 2024-2025)

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	PCC	BEC23401	Microwave and Antenna theory	2	1	2	4
T/P	2.	PCC	BEC26401	Linear Integrated Circuit	3	0	2	4
T/P	3.	PCC	BEC26402	Digital Image Processing	3	0	0	3
T	3.	PE-1	BEC2XXXX	PROGRAM ELECTIVE – 1	2	1	0	3
T	4.	OE-1	BEC2XXXX	OPEN ELECTIVE – 1	3	0	0	3
T	5.	HSM-5	BCM25101	Finance & Accounting / Constitution of India	2	0	0	2
P	6.	PCC	BEC23404	Mini Project	0	0	2	1
				Total	**12**	**2**	**6**	**20**

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Program Elective Courses

TRACK I: VLSI
TRACK II: 5G Technology
TRACK III: Embedded and IOT Engineering
TRACK IV: Artificial Intelligence

Program Elective	Track	Course Code	Course Name
1	I	BEC26420	Advanced VLSI
1	I	BEC26421	IC Technology
1	II	BEC23420	Wireless Communication
1	II	BEC26422	Introduction to 5G
1	III	BEC26423	Introduction to Internet of Things
1	III	BEC26424	Real-Time Operating Systems (RTOS)
1	IV	BEC26425	Introduction to AI and ML
1	IV	BEC26426	Computer Vision

MOEC	Track	Course Code	Course Name
1	I	BEC26430	Power Electronics and Devices
1	I	BEC26431	Renewable Energy
1	II	BEC26432	Computer Network
1	II	BEC26433	5G security and Applications
1	III	BEC26434	Sensor and Actuator
1	III	BEC23431	Mechatronics
1	IV	BEC23432	Robotics and control
1	IV	BEC26437	Data structure and algorithm

Semester VII

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
T/P	1.	PCC	BEC23501	Optical Fiber Communication	3	0	2	4
T	2.	PE-2	BEC2XXXX	Program Elective Course -2	3	0	0	3
T	3	PE-3	BEC2XXXX	Program Elective Course -3	3	0	0	3
T	4	PE-4	BEC2XXXX	Program Elective Course -4	3	0	0	3
T	5	OE-2	BEC2XXXX	Multidisciplinary Open Elective Course -2	3	0	0	3
P	6	PCC	BEC23503	Project I	0	0	8	4
P	7	PCC	BEC23503	General Viva	0	0	0	2
	8	PCC	BEC23504	Summer Internship	0	0	0	1
							Total	**23**

Summer Internship should be undergone during the month of July every year (after 6th sem examination & before reopening 7th sem classes).

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Program Elective Courses

TRACK I: VLSI
TRACK II: 5G Technology
TRACK III: Embedded and IOT Engineering
TRACK IV: Artificial Intelligence

Program Elective	VII Semester		
	Track	Course Code	Course Name
2	I	BEC23523	Introduction to MEMS
2	I	BEC26521	FPGA Design
2	II	BEC23421	Information Theory and Coding
2	II	BEC26522	5G Wireless Standard Design
2	III	BEC26523	Industrial IoT
2	III	BEC23521	High Speed Electronics
2	IV	BEC26524	Artificial Neural Networks
2	IV	BEC26525	Generative AI and Large Language model
3	**I**	BEC26526	**Semiconductor device modelling**
3	**I**	BEC26527	**VLSI design, Verification and Testing**
3	**II**	BEC26528	5G network and Architecture
3	**II**	BEC26529	MIMO Wireless Communication
3	**III**	BEC23520	Biomedical Electronics
3	**III**	BEC26580	DSP Processor
3	**IV**	BEC23528	Operating System
3	**IV**	BEC23529	Robotics and Intelligent systems
4	I	BEC265281	Digital IC Design
4	I	BEC265282	Quantum Electronics
4	II	BEC265283	Advanced Digital Signal Processing
4	II	BEC265284	AI for 5G
4	III	BEC265285	Embedded C/ Firmware Programming
4	III	BEC265286	Bio-informatics
4	IV	BEC265287	Natural Language Processing (NLP)
4	IV	BEC265288	Deep Learning

MOEC-2	Track	Course Code	Course Name
	I	BEC23531	Nanoelectronics
	I	BEC26531	CAD for VLSI
	II	BEC26532	Data Science
	II	BEC26533	Wireless Network Security
	III	BEC23532	Cyber Security
	III	BEC26534	Cloud Computing
	IV	BEC26535	Machine Learning
	IV	BEC23533	Computer Architecture

Semester VIII

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit
					L	T	P	C
P	1.	PCC	**BEC23502**	Project-II	0	0	32	16

Program: Certificate course on Semiconductor Technology

Total Credit: 18

Note: It's an additional certificate course(Optional) spread over six semesters and open to all students

Sl. No	Semester	Course code	Lecture	Practical	Credit
1	3rd sem	BEC23162T	Introduction to VLSI Design		3
2	4th sem	BEC23203T	Digital Design with HDL	HDL Coding and Simulation (Verilog/VHDL)	3
3	5th sem	BEC23164T	Analog and Mixed-Signal Design		3
4	6th sem	BEC23205T	EDA Tools for VLSI Design	CMOS Circuit Simulation using EDA Tools	3
5	7th sem	BEC23166T	Elective Modules: Low-Power VLSI Design / Physical Design and Verification / VLSI Testing and Verification.		3
6	8th sem:	BEC23207T	Physical Design Hands-On (Cadence/Synopsys Tools) with project work		3
Total					18