



**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY**  
WAKNAGHAT, P.O. – WAKNAGHAT,  
TEHSIL – KANDAGHAT, DISTRICT – SOLAN (H.P.)  
PIN – 173234 (INDIA) Phone Number- +91-1792-257999  
(Established by H.P. State Legislature vide Act No. 14 of 2002)



## Department of Electronics and Communication Engineering

### JUIT Wahnaghat

A meeting of Board of Studies of the Department of Electronics and Communication Engineering was held on 14-06-2024 at 11:00 AM in Board Room.

The following members were present

1. Prof. Rajiv Kumar	Chairman
2. Prof. D. Ghosh	External Member
3. Dr. Balwinder Singh	External Member
4. Mr. Sanjay Kumar Singh	External Member
5. Prof. Shruti Jain	Member
6. Prof. Vineet Sharma	Member
7. Prof. R.S. Raja Durai	Member
8. Dr. Harsh Sohal	Member
9. Dr. Emjee Puthooran	Member
10. Dr. Naveen Jaglan	Member
11. Dr. Salman Raju Talluri	Member
12. Dr. Vikas Baghel	Co-opted member
13. Dr. Shweta Pandit	Co-opted member
14. Dr. Alok Kumar	ECE Department
15. Mr. Pardeep Garg	ECE Department
16. Mr. Munish Sood	ECE Department
17. Prof. P.B. Barman	HoD, Physics and Material Science
18. Mr. Kamlesh Shrivastava	Co-opted Member for online issue

The Chairman welcomed all the members who were present for the meeting. With the permission of the Chairman, Prof. D. Ghosh and Mr. Sanjay Kumar Singh have joined online. The meeting was thereafter deliberated by Dr. Shweta Pandit on agenda items as had been approved by the Chairman.

**Item No. 1: To approve the minutes of last meeting of the BoS held on Nov. 18, 2021.**

Dr. Shweta Pandit has presented the last minutes of meeting.



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Approved as presented.

**Item No. 2: To approve the following two new Bachelor Degree Programs in the Department of Electronics and Communication Engineering in its UG Program starting from the academic session 2024-2025**

- 1. Electronics and Computer Science (ECS)**
- 2. Electronics Engineering (VLSI Design and Technology)**

**Chairman Prof. Rajiv Kumar** presented the proposal of introduction of two new undergraduate programs in the department:

1. Electronics and Computer Science (ECS)
2. Electronics Engineering (VLSI Design and Technology)

Dr. Balwinder Singh supported the initiation of a VLSI-related degree program, citing the GoI initiatives and increasing demand for this field in the near future. Dr. Balwinder Singh inquired about the current status of the Electronics and Computer Engineering (ECM) program. Prof. Rajiv Kumar informed the members that the ECM program students have completed their 6th semester and this is the only batch currently enrolled in this degree program. The new ECS and VLSI programs are proposed to commence from the academic session 2024-25. Prof. P.B. Barman asked about the further clarification of this point that whether the proposed ECS course is a renaming of the existing ECM course or a completely new program. Prof. Rajiv Kumar clarified that the ECS program is a completely new degree program. Prof. P.B. Barman and Prof. Vineet Sharma suggested that the discontinuation of the ECM program should be formally proposed as an agenda item, potentially after the graduation of current ECM students.

During the discussion on the second proposed degree program, the question was raised by Prof. Vineet Sharma and Prof. P.B. Barman whether the degree is a specialization degree in ECE? If not so, it may be titled "VLSI Design and Technology" rather than Electronics Engineering (VLSI Design and Technology). In response to this point, the department's Board of Studies members mentioned that the proposed degree program is a full degree program and not specialization. It also aligns with the AICTE model curriculum, which has been reviewed by the department's curriculum committee. The AICTE model curriculum of Electronics Engineering (VLSI Design and Technology) degree program was also shared with the meeting attendees by Mr. Sanjay Kumar Singh.

Prof. Balwinder Singh further added that for some government competitive examinations, candidates must demonstrate the equivalency of their degree with a core branch. Having "Electronics" included in the degree title would prevent potential rejections in such examinations.

After thorough deliberation, the proposed two new undergraduate degree programs were **approved**.



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**Item No. 3: To consider the review, assessment and approval of the modifications carried out in the course curriculum of Electronics and Communication Engineering (ECE) for the batch starting from the session 2024-2025**

Dr. Shweta Pandit informed the members that the department has restructured the ECE curriculum in accordance with new guidelines from higher authorities. Dr. Salman Raju Talluri was invited to present the proposed ECE curriculum. The proposed ECE semester-wise curriculum is attached in *Annexure I*. Dr. Salman Raju Talluri explained that the first two semesters are common for all university students. There was discussion regarding the implementation of project components in each semester. Since the semester-wise project activities yet to be finalized in consultation with other core departments of university, it was decided to work out on it first at the department and seek approval in the next Board of Studies meeting. Prof. Balwinder Singh emphasized that project should be more relevant to the branch. He also expressed concerns about the feasibility of a single department managing projects for all university students in a semester.

After thorough discussion, it was decided to eliminate one credit Verilog HDL Lab from 3<sup>rd</sup> semester of ECE curriculum. Prof. Vineet Sharma supported the addition of a Verilog-related course for CSE students, potentially as an open elective, to provide them with an understanding of VLSI concepts.

It was decided to add tutorial of Electromagnetic Waves along with lecture in the 5<sup>th</sup> semester of ECE curriculum. Prof. Barman highlighted that increasing credits beyond 162 in a degree program could impose an undue burden on students. Additionally, Prof. Barman emphasized the importance of capping the total weekly hours at 30 to ensure a manageable workload for students. The suggestion to incorporate the Material Sciences subject in the curriculum of ECE by Prof. Barman was proposed. After careful consideration and reviewing the credit restrictions for basic sciences courses, the decision was made to include the Probability, Statistics, and Stochastic Processes course in the ECE curriculum under the basic sciences category, as initially planned due to necessity of this course for an ECE engineer. Simultaneously, the Semiconductor Physics course was decided to be incorporated into the Electronics Engineering (VLSI Design and Technology) degree program, replacing the Probability, Statistics, and Stochastic Processes course in the third semester of this proposed second degree program.

Embedded Systems Course and its lab were decided to be replaced with Antenna Theory and Wave Propagation subject and its lab in the 6<sup>th</sup> Semester of the proposed ECE curriculum. This decision was influenced by the inclusion of the Microprocessor and Microcontrollers subject in the 5<sup>th</sup> semester, which is expected to cover the basics of embedded systems. Embedded system subject was suggested to be included in the professional electives, covering advanced topics like ARM processors etc.

After presenting the semester wise course structure by Dr. Salman Raju Talluri, the tentative list of professional electives and open electives were presented. It was intimated that the list is still under preparation and will be put in next BoS. External department members of BoS suggested the inclusion of robotics and drone courses in the open electives.

After thorough discussion, the final semester-wise changes suggested are as follows:  
From Semester-3, Verilog HDL Lab is dropped.

In Semester-5, Electromagnetic Waves subject tutorial is added.



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In Semester-6, Embedded Systems theory course and its Lab is replaced with Antenna Theory and Wave Propagation subject and its Lab.

These changes are **approved** and the updated curriculum with the asked changes is attached as **Annexure II** with highlighted changes.

**Item No. 4: To consider the approval of the new course curriculum scheme of Electronics and Computer Science (ECS) for the batch starting from the session 2024-2025**

Dr. Shweta Pandit presented the next agenda item with the consent of Chairman to approve the new course curriculum scheme of Electronics and Computer Science (ECS) degree starting from the session 2024-2025. Dr. Vikas Baghel was invited to present the proposed ECS curriculum. The proposed ECS semester-wise curriculum is attached in **Annexure III**. It was informed by Dr. Vikas Baghel that he has made the structure with reference to the proposed ECE curriculum in *Item No. 3* and CSE department's recently proposed curriculum. He mentioned inclusion of nearly equal distribution of courses, from ECE and CSE, reflecting the interdisciplinary nature of this branch, which incorporate the portions from both fields. There was discussion on addition of Python subject in the proposed ECS curriculum and was decided to put this course in Profession Electives bucket. The external members have asked for the list of professional and open electives for ECS course. It was intimated to them that the list is still under preparation and will be put in next BoS. It was the suggestion of all the external expert BoS members to put course on cyber security, cloud etc. in electives. It was communicated to the members that once the electives list is finalized by the ECE and CSE branches, the plan is to select a few courses from those lists for the ECS elective offerings. There was no change suggested in the proposed ECS curriculum attached as **Annexure III** and is **approved** in its current form.

**Item No. 5: To consider the approval of the new course curriculum scheme of Electronics Engineering (VLSI Design and Technology) for the batch starting from the session 2024-2025**

Dr. Shweta Pandit presented the next agenda item with the consent of Chairman to approve the new course curriculum scheme of Electronics Engineering (VLSI Design and Technology) degree starting from the session 2024-2025. Dr. Harsh Sohal was invited to present the proposed degree program curriculum. The proposed Electronics Engineering (VLSI Design and Technology) semester-wise curriculum is attached in **Annexure IV**. It was recommended to remove the Verilog HDL lab from the 3rd semester, aligning with suggestions made during the finalization of the ECE curriculum. There is proposal to rename the "FPGA based System Design" course in the 4th semester to "FPGA Design using Verilog" and to schedule its lab with the same name in the 4th semester. All members agreed to this proposal. Semiconductor Physics course was proposed to be incorporated in the third semester by replacing Probability, Statistics and Stochastic Processes course. It was discussed that knowledge of different materials used is design, fabrication, and performance optimization of integrated circuits is required for a VLSI engineer. A list of few electives was suggested by Dr. Balwinder Singh. He suggested to include courses like DSP for VLSI, Sensors and MEMS design, Packaging and Reliability, Hardware security, AI for VLSI circuits, VLSI for biomedical applications, RF circuits in electives.

After thorough discussion, the final semester-wise changes suggested are as follows:  
From Semester-3, Verilog HDL Lab is dropped.



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In Semester-3, Probability, Statistics and Stochastic Processes course is replaced with Semiconductor Physics Course.

In Semester-4, the course name FPGA based System Design is renamed as FPGA Design using Verilog.

In Semester-4, FPGA Design using Verilog Lab is included.

These changes are **approved** and the updated curriculum with the asked changes is attached as *Annexure V* with highlighted changes.

**Item No. 6: Any other with permission of the Chair.**

Prof. Shruti Jain requested suggestions from the external members to improve admissions and placements in the ECE department. In response, Dr. Balwinder Singh emphasized the importance of providing students with more practical exposure to laboratories, software, and industry. He invited the department students for an industrial visit to SCL, Mohali.

Mr. Sanjay Singh, an ECE alumnus of JUIT offered to organize online meetings between students and professionals at TSMC (Taiwan Semiconductor Manufacturing Company).

Both Mr. Sanjay Kumar and Dr. Balwinder Singh suggested inviting guest faculty from the industry to collaborate on courses. They recommended involving industry professionals to teach two to three chapters of selected courses, which would add significant value. Dr. Balwinder proposed to prepare a plan for industry experts to teach some VLSI electives. He also advised to seek consultancy projects from external agencies and suggested to organize workshops on project proposal writing. He informed the faculty about his ongoing projects with different agencies. Furthermore, he recommended reducing the load on research faculty and establishing a Center of Excellence for packaging and testing.

Department faculty thanked external members for their suggestions.

Prof. Rajiv Kumar concluded the meeting at 1:45PM with vote of thanks to all the curriculum committee members Dr. Harsh Sohal, Dr. Emjee Puthooran, Dr. Salman Raju Talluri, Dr. Vikas Baghel, and Dr. Shweta Pandit for finalizing the proposal of different programs and planning of the BoS meeting. He also thanked Dr. Balwinder Singh, Prof. D. Ghosh, and Mr. Sanjay Kumar Singh and all the BoS members for their suggestions.

**Dr. Shweta Pandit**  
(BoS Coordinator)

**Prof. Rajiv Kumar**  
(Chairman, HoD ECE)





Attendance Sheet of BoS held on 14.6.24

(Dr. Balwinder Singh)

(Prof. Debasshish Ghosh)

14/06/2024  
(Mr. Sanjay Kumar Singh)

17/06/2024  
(Prof. Rajiv Kumar)

14/6/24  
(Prof. Shruti Jain)

14/06/2024  
(Prof. Vinod Sharma,  
Prof, Dept. of PMS, IQAC representative)

R.S. Raja  
(14.06.2024)

(Prof. R S Raja Murai,  
Prof., Dept. of Mathematics)

14/06/2024  
(Dr. Harsh Sodhi)

19/6/2024  
(Dr. Emjee Puthooran)

14/6/2024  
(Dr. Naveen Jaglan)

Salman Raju Talluri  
(Dr. Salman Raju Talluri) 14/6/2024


14/6/24  
(Dr. Vikas Baghel)



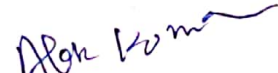
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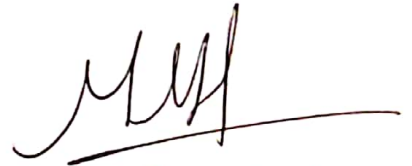
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UNIVERSITY  
IGNITED MINDS  
INSPIRED SOULS

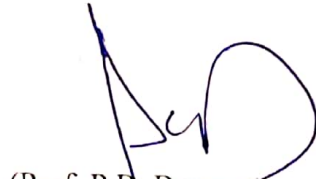
**Attendance Sheet of BoS held on 14.6.24**

  
(Dr. Shweta Pandit)

  
(Dr. Pardeep Garg)

  
(Dr. Alok Kumar)

  
(Mr. Munish Sood)

  
(Prof. P.B. Barman)

## **Annexure I**

**Proposed Electronics and Communication Engineering (ECE)  
Degree Curriculum presented in BoS Meeting held on 14  
June, 2024**



## PROPOSED CATEGORY & SEMESTER WISE CREDIT DISTRIBUTION (FINALIZED) ECED

CATEGORY / SEM	HSS	BASIC SC.	ENGG. SC.	PROF. CORE	PROF. ELECTIVE	OPEN ELECTIVE	PROJECT	TOTAL Credits (Hours)
1 SEM	3	9	5.5				1	18.5(24)
2 SEM	3	8	11.5				1	23.5(31)
3 SEM	3	3	4	11			1	22(27)
4 SEM	3		2	18			1	24(28)
5 SEM	3			13	3		2	21(26)
6 SEM				8	6	6	2	22(27)
7 SEM				3	6	6	4	19(24)
8 SEM					3	6	4	13(17)
<b>Total</b>	<b>15</b>	<b>20</b>	<b>23</b>	<b>53</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>163 (204)</b>

**Basic Sc.** – Mathematics, Physics & Chemistry.

**Engg. Sc.** – Engg. Courses offered by one particular department and mandatory to all students irrespective to department.

**Note:-** Only Credits have been defined under the category / semester. However, No. of Courses in each department should be kept Uniform. If deemed fit, liberty of introduction of Theory Courses / Lab courses within the specified credit limit should be given to the departments.

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN**

**Course Structure of BTech in Electronics and Communications Engineering**

**(TOTAL CREDITS - 163) – APPLICABLE FROM- 2024 ADMISSION BATCH**

**SEMESTER - 1**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			English	2	0	0	2	2
2	HSMC			English Lab	0	0	2	1	2
3	BSC			Engineering Mathematics-I	3	1	0	4	4
4	BSC			Engineering Physics-I	3	1	0	4	4
5	BSC			Engineering Physics Lab-I	0	0	2	1	2
6	ESC			Engineering Graphics/Workshop Practices	0	0	3	1.5	3
7	ESC			Problem Solving and Programming	3	0	0	3	3
8	ESC			Problem Solving and Programming Lab	0	0	2	1	2
9	PR			Project-I BSC	0	0	2	1	2
10	MNC			UHV-I Mandatory Induction Program	2 Weeks			0	
				<b>TOTAL</b>				<b>18.5</b>	<b>24</b>

	Credits	Hours
HSMC	3	4
BSC	9	10
ESC	5.5	8
PCC		
PEC		
OEC		
PR	1	2
<b>Total</b>	<b>18.5</b>	<b>24</b>

SEMESTER - 2									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Universal Human Values- II: Understanding Harmony	2	1	0	3	3
2	BSC			Engineering Mathematics-II	3	1	0	4	4
3	BSC			Engineering Physics-II	3	0	0	3	3
4	BSC			Engineering Physics-II Lab	0	0	2	1	2
5	ESC	N		Electrical Engineering/Basic Electrical Engineering(BT and	3	1	0	4	4
6	ESC	N		Electrical Engineering Lab/Basic Electrical Engineering Lab(BT and BI)	0	0	2	1	2
7	ESC			Workshop Practices/Engineering Graphics	0	0	3	1.5	3
8	ESC			Data Structures and Algorithms	3	0	0	3	3
9	ESC			Data Structures and Algorithms Lab	0	0	4	2	4
10	PR			Project-II BI/BT	0	0	2	1	2
11	HSMC			Professional Communication Practice (AUDIT)	0	1	0	0	1
				<b>TOTAL</b>				<b>23.5</b>	<b>31</b>

	Credits	Hours
HSMC	3	4
BSC	8	9
ESC	11.5	16
PCC		
PEC		
OEC		
PR	1	2

Total 23.5 31

### Summer Term

Exit option with UG certificate of Level 5 on successful completion of 40 credits from 2 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

**SEMESTER - 3**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Life Skills and Interpersonal Dynamics	2	1	0	3	3
2	BSC			Probability, Statistics and Stochastic Processes	3	0	0	3	3
3	ESC	N		Digital System Design	3	0	0	3	3
4	ESC	N		Digital System Design Lab	0	0	2	1	2
5	PCC	N		Electronic Devices	3	1	0	4	4
6	PCC	N		Electronic Devices Lab	0	0	2	1	2
7	PCC	N		Signals and Systems	3	1	0	4	4
8	PCC	N		Signals and Systems Lab	0	0	2	1	2
9	PCC	N		Verilog HDL Lab	0	0	2	1	2
10	PR			Project-III ESC	0	0	2	1	2
				<b>TOTAL</b>				<b>22</b>	<b>27</b>

	Credits	Hours
HSMC	3	3
BSC	3	3
ESC	4	5
PCC	11	14
PEC		
OEC		
PR	1	2

Total                      22                      27

**SEMESTER - 4**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Finance and Accounts	3	0	0	3	3
2	ESC			Environmental Studies	2	0	0	2	2
3	PCC	N		Analog Circuits	3	1	0	4	4
4	PCC	N		Analog Circuits Lab	0	0	2	1	2
5	PCC	N		Control Systems	3	1	0	4	4
6	PCC	R		Analog and Digital Communication	3	1	0	4	4
7	PCC	R		Analog and Digital Communication Lab	0	0	2	1	2
8	PCC	R		Microprocessors and Microcontrollers	3	0	0	3	3
9	PCC	R		Microprocessors and Microcontrollers Lab	0	0	2	1	2
10	PR			Project-IV	0	0	2	1	2
				<b>TOTAL</b>				<b>24</b>	<b>28</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC	2	2
PCC	18	21
PEC		
OEC		
PR	1	2

Total                      24                      28

**Summer Term**

Exit option with UG Diploma of Level 6 on successful completion of 80 credits from 4 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

**SEMESTER - 5**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			PR Management and Entrepreneurship	3	0	0	3	3
2	PCC	R		Electromagnetic Waves	3	0	0	3	3
3	PCC	N		Electromagnetic Waves Lab	0	0	2	1	2
4	PCC	R		Digital Signal Processing	3	0	0	3	3
5	PCC	R		Digital Signal Processing Lab	0	0	2	1	2
6	PCC	R		VLSI Design	3	1	0	4	4
7	PCC	N		VLSI Design Lab	0	0	2	1	2
8	PEC			PE-I	3	0	0	3	3
9	PR			Project-V	0	0	4	2	4
				<b>TOTAL</b>				<b>21</b>	<b>26</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC		
PCC	13	16
PEC	3	3
OEC		
PR	2	4
Total	21	26



**SEMESTER - 6**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Embedded Systems	3	0	0	3	3
2	PCC	N		Embedded Systems Lab	0	0	2	1	2
3	PCC	R		Wireless and Data Communication	3	0	0	3	3
4	PCC	N		Wireless and Data Communication Lab	0	0	2	1	2
5	PEC			PE-II	3	0	0	3	3
6	PEC			PE-III	3	0	0	3	3
7	OEC			OE-I - SE	3	0	0	3	3
8	OEC			OE-II - HSS	3	0	0	3	3
9	PR			Project-VI	0	0	4	2	4
10	MNC			Soft Skills for Professionals	0	1	0	0	1
				<b>TOTAL</b>				<b>22</b>	<b>27</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	8	10
PEC	6	6
OEC	6	6
PR	2	4

Total            22            27

**Summer Term**

**Exit option with B.Sc. of Level 7 on successful completion of 120 credits from 6 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.**

**SEMESTER - 7**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Computer Architecture	3	0	0	3	3
2	PEC			PE-IV	3	0	0	3	3
3	PEC			PE-V	3	0	0	3	3
4	OEC			OE-III	3	0	0	3	3
5	OEC			OE-IV	3	0	0	3	3
6	PR			Project-VII	0	0	8	4	8
7	HSMC			Indian Constitution	1	0	0	Audit	1
				<b>TOTAL</b>				<b>19</b>	<b>24</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	3	3
PEC	6	6
OEC	6	6
PR	4	8

Total                      19                      24

SEMESTER - 8									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
Option-1				L	T	P			
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	PR			Project-VIII	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

OR

Option-2				L	T	P			
1	PR			Industrial Internship				11	
				<b>TOTAL</b>				<b>11</b>	

OR

Option-3				L	T	P			
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	INT			Industrial	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

	Credits	Hours
HSMC		
BSC		
ESC		
PCC		
PEC	3	3
OEC	6	6
PR	4	8

Total 13 17

<b>COURSE CATEGORY-WISE CREDIT BREAKUP</b>			
		<b>Total Credits</b>	<b>Total Hours</b>
Humanities & Social Sciences	HSMC	15	19
Basic Science	BSC	20	22
Engineering Science	ESC	23	31
Professional Core	PCC	53	64
Professional Elective	PEC	18	18
Open Elective	OEC	18	18
Project	PR	16	32
<b>TOTAL</b>		<b>163</b>	<b>204</b>

## **Annexure II**

**Modified Electronics and Communication Engineering (ECE)  
Degree Curriculum as per suggestions during BoS Meeting**

## PROPOSED CATEGORY & SEMESTER WISE CREDIT DISTRIBUTION (FINALIZED) ECED

CATEGORY / SEM	HSS	BASIC SC.	ENGG. SC.	PROF. CORE	PROF. ELECTIVE	OPEN ELECTIVE	PROJECT	TOTAL Credits (Hours)
1 SEM	3	9	5.5				1	18.5(24)
2 SEM	3	8	11.5				1	23.5(31)
3 SEM	3	3	4	10			1	21(25)
4 SEM	3		2	18			1	24(28)
5 SEM	3			13	3		2	22(27)
6 SEM				8	6	6	2	22(27)
7 SEM				3	6	6	4	19(24)
8 SEM					3	6	4	13(17)
<b>Total</b>	<b>15</b>	<b>20</b>	<b>23</b>	<b>53</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>163 (203)</b>

**Basic Sc.** – Mathematics, Physics & Chemistry.

**Engg. Sc.** – Engg. Courses offered by one particular department and mandatory to all students irrespective to department.

**Note:-** Only Credits have been defined under the category / semester. However, No. of Courses in each department should be kept Uniform. If deemed fit, liberty of introduction of Theory Courses / Lab courses within the specified credit limit should be given to the departments.



**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN**

**Course Structure of BTech in Electronics and Communications Engineering**

**(TOTAL CREDITS - 168) – APPLICABLE FROM- 2024 ADMISSION BATCH**

**SEMESTER - 1**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			English	2	0	0	2	2
2	HSMC			English Lab	0	0	2	1	2
3	BSC			Engineering Mathematics-I	3	1	0	4	4
4	BSC			Engineering Physics-I	3	1	0	4	4
5	BSC			Engineering Physics Lab-I	0	0	2	1	2
6	ESC			Engineering Graphics/Workshop Practices	0	0	3	1.5	3
7	ESC			Problem Solving and Programming	3	0	0	3	3
8	ESC			Problem Solving and Programming Lab	0	0	2	1	2
9	PR			Project-I BSC	0	0	2	1	2
10	MNC			UHV-I Mandatory Induction Program	2 Weeks			0	
				<b>TOTAL</b>				<b>18.5</b>	<b>24</b>

	Credits	Hours
HSMC	3	4
BSC	9	10
ESC	5.5	8
PCC		
PEC		
OEC		
PR	1	2
<b>Total</b>	<b>18.5</b>	<b>24</b>

SEMESTER - 2									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Universal Human Values- II: Understanding Harmony	2	1	0	3	3
2	BSC			Engineering Mathematics-II	3	1	0	4	4
3	BSC			Engineering Physics-II	3	0	0	3	3
4	BSC			Engineering Physics-II Lab	0	0	2	1	2
5	ESC	N		Electrical Engineering/Basic Electrical Engineering(BT and	3	1	0	4	4
6	ESC	N		Electrical Engineering Lab/Basic Electrical Engineering Lab(BT and BI)	0	0	2	1	2
7	ESC			Workshop Practices/Engineering Graphics	0	0	3	1.5	3
8	ESC			Data Structures and Algorithms	3	0	0	3	3
9	ESC			Data Structures and Algorithms Lab	0	0	4	2	4
10	PR			Project-II BI/BT	0	0	2	1	2
11	HSMC			Professional Communication Practice (AUDIT)	0	1	0	0	1
				<b>TOTAL</b>				<b>23.5</b>	<b>31</b>

	Credits	Hours
HSMC	3	4
BSC	8	9
ESC	11.5	16
PCC		
PEC		
OEC		
PR	1	2

Total 23.5 31

### Summer Term

Exit option with UG certificate of Level 5 on successful completion of 40 credits from 2 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

**SEMESTER - 3**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Life Skills and Interpersonal Dynamics	2	1	0	3	3
2	BSC			Probability, Statistics and Stochastic Processes	3	0	0	3	3
3	ESC	N		Digital System Design	3	0	0	3	3
4	ESC	N		Digital System Design Lab	0	0	2	1	2
5	PCC	N		Electronic Devices	3	1	0	4	4
6	PCC	N		Electronic Devices Lab	0	0	2	1	2
7	PCC	N		Signals and Systems	3	1	0	4	4
8	PCC	N		Signals and Systems Lab	0	0	2	1	2
9	PR			Project-III ESC	0	0	2	1	2
				<b>TOTAL</b>				<b>21</b>	<b>25</b>

	Credits	Hours
HSMC	3	3
BSC	3	3
ESC	4	5
PCC	10	12
PEC		
OEC		
PR	1	2

Total                      21                      25

**SEMESTER - 4**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Finance and Accounts	3	0	0	3	3
2	ESC			Environmental Studies	2	0	0	2	2
3	PCC	N		Analog Circuits	3	1	0	4	4
4	PCC	N		Analog Circuits Lab	0	0	2	1	2
5	PCC	N		Control Systems	3	1	0	4	4
6	PCC	R		Analog and Digital Communication	3	1	0	4	4
7	PCC	R		Analog and Digital Communication Lab	0	0	2	1	2
8	PCC	R		Microprocessors and Microcontrollers	3	0	0	3	3
9	PCC	R		Microprocessors and Microcontrollers Lab	0	0	2	1	2
10	PR			Project-IV	0	0	2	1	2
				<b>TOTAL</b>				<b>24</b>	<b>28</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC	2	2
PCC	18	21
PEC		
OEC		
PR	1	2

Total                      24                      28

**Summer Term**

Exit option with UG Diploma of Level 6 on successful completion of 80 credits from 4 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

**SEMESTER - 5**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			PR Management and Entrepreneurship	3	0	0	3	3
2	PCC	R		Electromagnetic Waves	3	1	0	4	4
3	PCC	N		Electromagnetic Waves Lab	0	0	2	1	2
4	PCC	R		Digital Signal Processing	3	0	0	3	3
5	PCC	R		Digital Signal Processing Lab	0	0	2	1	2
6	PCC	R		VLSI Design	3	1	0	4	4
7	PCC	N		VLSI Design Lab	0	0	2	1	2
8	PEC			PE-I	3	0	0	3	3
9	PR			Project-V	0	0	4	2	4
				<b>TOTAL</b>				<b>22</b>	<b>27</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC		
PCC	14	17
PEC	3	3
OEC		
PR	2	4
Total	22	27

**SEMESTER - 6**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Antenna theory and Wave Propagation	3	0	0	3	3
2	PCC	N		Antenna theory and Wave Propagation Lab	0	0	2	1	2
3	PCC	R		Wireless and Data Communication	3	0	0	3	3
4	PCC	N		Wireless and Data Communication Lab	0	0	2	1	2
5	PEC			PE-II	3	0	0	3	3
6	PEC			PE-III	3	0	0	3	3
7	OEC			OE-I - SE	3	0	0	3	3
8	OEC			OE-II - HSS	3	0	0	3	3
9	PR			Project-VI	0	0	4	2	4
10	MNC			Soft Skills for Professionals	0	1	0	0	1
				<b>TOTAL</b>				<b>22</b>	<b>27</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	8	10
PEC	6	6
OEC	6	6
PR	2	4

Total                      22                      27

**Summer Term**

**Exit option with B.Sc. of Level 7 on successful completion of 120 credits from 6 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.**



**SEMESTER - 7**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Computer Architecture	3	0	0	3	3
2	PEC			PE-IV	3	0	0	3	3
3	PEC			PE-V	3	0	0	3	3
4	OEC			OE-III	3	0	0	3	3
5	OEC			OE-IV	3	0	0	3	3
6	PR			Project-VII	0	0	8	4	8
7	HSMC			Indian Constitution	1	0	0	Audit	1
				<b>TOTAL</b>				<b>19</b>	<b>24</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	3	3
PEC	6	6
OEC	6	6
PR	4	8

Total                      19                      24

SEMESTER - 8									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
Option-1					L	T	P		
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	PR			Project-VIII	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

OR

Option-2					L	T	P		
1	PR			Industrial Internship				11	
				<b>TOTAL</b>				<b>11</b>	

OR

Option-3					L	T	P		
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	INT			Industrial	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

	Credits	Hours
HSMC		
BSC		
ESC		
PCC		
PEC	3	3
OEC	6	6
PR	4	8

Total 13 17

<b>COURSE CATEGORY-WISE CREDIT BREAKUP</b>			
		<b>Total Credits</b>	<b>Total Hours</b>
Humanities & Social Sciences	HSMC	15	19
Basic Science	BSC	20	22
Engineering Science	ESC	23	31
Professional Core	PCC	53	63
Professional Elective	PEC	18	18
Open Elective	OEC	18	18
Project	PR	16	32
<b>TOTAL</b>		<b>163</b>	<b>203</b>

## **Annexure III**

### **Proposed and Approved Electronics and Computer Science (ECS) Curriculum during BoS Meeting**

## PROPOSED CATEGORY & SEMESTER WISE CREDIT DISTRIBUTION (FINALIZED) ECS

CATEGORY / SEM	HSS	BASIC SC.	ENGG. SC.	PROF. CORE	PROF. ELECTIVE	OPEN ELECTIVE	PROJECT	TOTAL Credits (Hours)
1 SEM	3	9	5.5				1	18.5 (24)
2 SEM	3	8	11.5				1	23.5 (31)
3 SEM	3	3	9	10			1	26 (32)
4 SEM	3		2	18			1	24 (30)
5 SEM	3			12	3		2	20 (24)
6 SEM				4	6	6	2	18 (22)
7 SEM				3	6	6	4	19 (24)
8 SEM					3	6	4	13 (17)
<b>Total</b>	<b>15</b>	<b>20</b>	<b>28</b>	<b>47</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>162 (204)</b>

**Basic Sc.** – Mathematics, Physics & Chemistry.

**Engg. Sc.** – Engg. Courses offered by one particular department and mandatory to all students irrespective to department.

**Note:-** Only Credits have been defined under the category / semester. However, No. of Courses in each department should be kept Uniform. If deemed fit, liberty of introduction of Theory Courses / Lab courses within the specified credit limit should be given to the departments.

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN**

**Course Structure of BTech in Electronics & Computer Science**

**(TOTAL CREDITS – 162) – APPLICABLE FROM 2024 ADMISSION BATCH**

**SEMESTER - 1**

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			English	2	0	0	2	2
2	HSMC			English Lab	0	0	2	1	2
3	BSC			Engineering Mathematics-I	3	1	0	4	4
4	BSC			Engineering Physics-I	3	1	0	4	4
5	BSC			Engineering Physics Lab-I	0	0	2	1	2
6	ESC	N		Problem Solving and Programming	3	0	0	3	3
7	ESC	N		Problem Solving and Programming Lab	0	0	2	1	2
8	ESC			Workshop Practices <b>OR</b>	0	0	3	1.5	3
				Engineering Graphics	0	0	3		
9	PR			Project-I C	0	0	2	1	2
10	MNC			UHV-I Mandatory Induction	2 weeks			0	
				<b>TOTAL</b>				<b>18.5</b>	<b>24</b>

	Credits	Hours
HSMC	3	4
BSC	9	10
ESC	5.5	8
PCC	0	0
PEC	0	0
OEC	0	0
PR	1	2
<b>Total</b>	<b>18.5</b>	<b>24</b>

<b>SEMESTER - 2</b>									
S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Universal Human Values- II:	2	1	0	3	3
2	BSC			Engineering Mathematics-II	3	1	0	4	4
3	BSC			Engineering Physics-II	3	0	0	3	3
4	BSC			Engineering Physics-II Lab	0	0	2	1	2
5	ESC	N		Electrical Engineering	3	1	0	4	4
6	ESC	N		Electrical Engineering Lab	0	0	2	1	2
7	ESC			Data Structures and Algorithms	3	0	0	3	3
8	ESC			Data Structures and Algorithms Lab	0	0	4	2	4
9	ESC			Workshop Practices <b>OR</b>	0	0	3	1.5	3
				Engineering Graphics	0	0	3		
10	PR			Project-II BI/BT	0	0	2	1	2
11	HSMC			Professional Communication Practice (AUDIT)	0	1	0	0	1
				<b>TOTAL</b>				<b>23.5</b>	<b>31</b>

	Credits	Hours
HSMC	3	4
BSC	8	9
ESC	11.5	16
PCC	0	0
PEC	0	0
OEC	0	0
PR	1	2

**Total            23.5            31**

### Summer Term

Exit option with UG certificate of Level 5 on successful completion of 40 credits from 2 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

### SEMESTER - 3

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Life Skills and Interpersonal	2	1	0	3	3
2	BSC			Probability, Statistics and Stochastic Processes	3	0	0	3	3
3	ESC			Object Oriented Systems and Programming	3	0	0	3	3
4	ESC			Object Oriented Systems and Programming Lab	0	0	4	2	4
5	ESC	N		Digital System Design	3	0	0	3	3
6	ESC	N		Digital System Design Lab	0	0	2	1	2
7	PCC	N		Electronic Devices	3	1	0	4	4
8	PCC	N		Electronic Devices Lab	0	0	2	1	2
9	PCC	N		Signals and Systems	3	1	0	4	4
10	PCC	N		Signals and Systems Lab	0	0	2	1	2
11	PR			Project III ESC	0	0	2	1	2
				<b>TOTAL</b>				<b>26</b>	<b>32</b>

	Credits	Hours
HSMC	3	3
BSC	3	3
ESC	9	12
PCC	10	12
PEC	0	0
OEC	0	0
PR	1	2

**Total            26            32**



SEMESTER - 4									
S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Finance and Accounts	3	0	0	3	3
2	ESC			Environmental Studies	2	0	0	2	2
3	PCC	R		Analog and Digital Communication	3	1	0	4	4
4	PCC	R		Analog and Digital Communication Lab	0	0	2	1	2
5	PCC	R		Microprocessors and Microcontrollers	3	0	0	3	3
6	PCC	R		Microprocessors and Microcontrollers Lab	0	0	2	1	2
7	PCC			Operating Systems	3	0	0	3	3
8	PCC			Operating System Lab	0	0	2	1	2
9	PCC			Design & Analysis of Algorithms	3	0	0	3	3
10	PCC			Design and Analysis of Algorithms Lab	0	0	4	2	4
11	PR			Project-IV	0	0	2	1	2
				<b>TOTAL</b>				<b>24</b>	<b>30</b>
<b>Summer Term</b>									
Exit option with UG Diploma of Level 6 on successful completion of 80 credits from 4 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.									

	Credits	Hours
HSMC	3	3
BSC	0	0
ESC	2	2
PCC	18	23
PEC	0	0
OEC	0	0
PR	1	2
<b>Total</b>	<b>24</b>	<b>30</b>

### SEMESTER - 5

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Project Management and Entrepreneurship	3	0	0	3	3
2	PCC	R		VLSI Design	3	1	0	4	4
3	PCC	N		VLSI Design Lab	0	0	2	1	2
4	PCC			Theory of Computaion	3	0	0	3	3
5	PCC			Database Management systems	3	0	0	3	3
6	PCC			Database Management systems Lab	0	0	2	1	2
7	PEC			PE-I	3	0	0	3	3
8	PR			Project-V	0	0	4	2	4
				<b>TOTAL</b>				<b>20</b>	<b>24</b>

	Credits	Hours
HSMC	3	3
BSC	0	0
ESC	0	0
PCC	12	14
PEC	3	3
OEC	0	0
PR	2	4
<b>Total</b>	<b>20</b>	<b>24</b>

## SEMESTER - 6

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC			Computer Networks	3	0	0	3	3
2	PCC			Computer Networks lab	0	0	2	1	2
3	PEC			PE-II	3	0	0	3	3
4	PEC			PE-III	3	0	0	3	3
5	OEC			OE-I (SE)	3	0	0	3	3
6	OEC			OE-II (HSS)	3	0	0	3	3
7	PR			Project-VI	0	0	4	2	4
8	HSMC			Soft Skills for Professionals (AUDIT)	0	1	0	0	1
<b>TOTAL</b>								<b>18</b>	<b>22</b>

	Credits	Hours
HSMC	0	1
BSC	0	0
ESC	0	0
PCC	4	5
PEC	6	6
OEC	6	6
PR	2	4

**Total            18            22**

### Summer Term

Exit option with B.Sc. of Level 7 on successful completion of 120 credits from 6 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

### SEMESTER - 7

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Computer Architecture	3	0	0	3	3
2	PEC			PE-IV	3	0	0	3	3
3	PEC			PE-V	3	0	0	3	3
4	OEC			OE-III	3	0	0	3	3
5	OEC			OE-IV	3	0	0	3	3
6	PR			Project-VII	0	0	8	4	8
7	HSMC			Indian Constitution (AUDIT)	1	0	0	0	1
				<b>TOTAL</b>				<b>19</b>	<b>24</b>

	Credits	Hours
HSMC	0	1
BSC	0	0
ESC	0	0
PCC	3	3
PEC	6	6
OEC	6	6
PR	4	8

**Total            19            24**

### SEMESTER - 8

S. No.	Course Category	New / Revised	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
<b>Option 1</b>									
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	PR			Project-VIII	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

**OR**

<b>Option 2</b>									
1	PEC			PE-VI	3	0	0	3	3
2	OEC			OE-V	3	0	0	3	3
3	OEC			OE-VI	3	0	0	3	3
4	INT			Industrial	0	0	8	4	8
				<b>TOTAL</b>				<b>13</b>	<b>17</b>

**OR**

<b>Option 3</b>									
1	PR			Industrial Internship				13	
				<b>TOTAL</b>				<b>13</b>	

	Credits	Hours
HSMC	0	0
BSC	0	0
ESC	0	0
PCC	0	0
PEC	3	3
OEC	6	6
PR	4	8

**Total            13            17**

**COURSE CATEGORY-WISE CREDIT BREAKUP**

Humanities & Social Sciences	HSMC	15
Basic Science	BSC	20
Engineering Science	ESC	28
Professional Core	PCC	47
Professional Elective	PEC	18
Open Elective	OEC	18
Project	PR	16
<b>TOTAL CREDITS</b>		<b>162</b>
<b>TOTAL HOURS</b>		<b>204</b>

## **Annexure IV**

**Proposed Electronics Engineering (VLSI Design and  
Technology) Degree Curriculum presented in BoS Meeting  
held on 14 June, 2024**

## PROPOSED CATEGORY & SEMESTER WISE CREDIT DISTRIBUTION (FINALIZED) ECED (VLSI)

CATEGORY / SEM	HSS	BASIC SC.	ENGG. SC.	PROF. CORE	PROF. ELECTIVE	OPEN ELECTIVE	PROJECT	TOTAL Credits (Hours)
1 SEM	3	9	5.5				1	18.5(24)
2 SEM	3	8	11.5				1	23.5(31)
3 SEM	3	3	4	11			1	22(27)
4 SEM	3		2	17			1	23(27)
5 SEM	3			13	3		2	21(26)
6 SEM				9	6	6	2	23(28)
7 SEM				3	6	6	4	19(24)
8 SEM					3	6	4	13(17)
<b>Total</b>	<b>15</b>	<b>20</b>	<b>23</b>	<b>53</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>163 (204)</b>

**Basic Sc.** – Mathematics, Physics & Chemistry.

**Engg. Sc.** – Engg. Courses offered by one particular department and mandatory to all students irrespective to department.

**Note:-** Only Credits have been defined under the category / semester. However, No. of Courses in each department should be kept Uniform. If deemed fit, liberty of introduction of Theory Courses / Lab courses within the specified credit limit should be given to the departments.



**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN**

**Course Structure of B.Tech. in Electronics Engineering (VLSI Design & Technology)**

**(TOTAL CREDITS - 163) – APPLICABLE FROM- 2024 ADMISSION BATCH**

**SEMESTER - 1**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			English	2	0	0	2	2
2	HSMC			English Lab	0	0	2	1	2
3	BSC			Engineering Mathematics-I	3	1	0	4	4
4	BSC			Engineering Physics-I	3	1	0	4	4
5	BSC			Engineering Physics Lab-I	0	0	2	1	2
6	ESC			Engineering Graphics/Workshop Practices	0	0	3	1.5	3
7	ESC			Problem Solving and Programming	3	0	0	3	3
8	ESC			Problem Solving and Programming Lab	0	0	2	1	2
9	PR			Project-I	1	0	2	1	2
10	MNC			UHV-I Mandatory Induction Program	2 Weeks			0	
				<b>TOTAL</b>				<b>18.5</b>	<b>24</b>

	Credits	Hours
HSMC	3	4
BSC	9	10
ESC	5.5	8
PCC		
PEC		
OEC		
PR	1	2

Total            18.5            24

SEMESTER - 2									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Universal Human Values- II: Understanding Harmony	2	1	0	3	3
2	BSC			Engineering Mathematics-II	3	1	0	4	4
3	BSC			Engineering Physics-II	3	0	0	3	3
4	BSC			Engineering Physics-II Lab	0	0	2	1	2
5	ESC	N		Electrical Engineering	3	1	0	4	4
6	ESC	N		Electrical Engineering Lab	0	0	2	1	2
7	ESC			Workshop Practices/Engineering Graphics	0	0	3	1.5	3
8	ESC			Data Structures and Algorithms	3	0	0	3	3
9	ESC			Data Structures and Algorithms Lab	0	0	4	2	4
10	PR			Project-II	0	0	2	1	2
11	HSMC			Professional Communication Practice (AUDIT)	0	1	0	0	1
				<b>TOTAL</b>				<b>23.5</b>	<b>31</b>
Summer Term									
Exit option with UG certificate of Level 5 on successful completion of 40 credits from 2 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.									

	Credits	Hours
HSMC	3	4
BSC	8	9
ESC	11.5	16
PCC		
PEC		
OEC		
PR	1	2

Total            23.5            31

**SEMESTER - 3**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Life Skills and Interpersonal Dynamics	2	1	0	3	3
2	BSC			Probability, Statistics and Stochastic Processes	3	0	0	3	3
3	ESC	N		Digital System Design	3	0	0	3	3
4	ESC	N		Digital System Design Lab	0	0	2	1	2
5	PCC	N		Electronic Devices	3	1	0	4	4
6	PCC	N		Electronic Devices Lab	0	0	2	1	2
7	PCC	N		Signals and Systems	3	1	0	4	4
8	PCC	N		Signals and Systems Lab	0	0	2	1	2
9	PCC	N		Verilog HDL Lab	0	0	2	1	2
10	PR			Project-III	0	0	2	1	2
				<b>TOTAL</b>				<b>22</b>	<b>27</b>

	Credits	Hours
HSMC	3	3
BSC	3	3
ESC	4	5
PCC	11	14
PEC		
OEC		
PR	1	2

Total            22            27

**SEMESTER - 4**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Finance and Accounts	3	0	0	3	3
2	ESC			Environmental Studies	2	0	0	2	2
3	PCC	N		Analog Circuits	3	1	0	4	4
4	PCC	N		Analog Circuits Lab	0	0	2	1	2
5	PCC	N		FPGA based System Design	3	0	0	3	3
7	PCC	R		Analog and Digital Communication	3	1	0	4	4
8	PCC	R		Analog and Digital Communication Lab	0	0	2	1	2
9	PCC	R		Microprocessors and Microcontrollers	3	0	0	3	3
10	PCC	R		Microprocessors and Microcontrollers Lab	0	0	2	1	2
11	PR			Project-IV	0	0	2	1	2
				<b>TOTAL</b>				<b>23</b>	<b>27</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC	2	2
PCC	17	20
PEC		
OEC		
PR	1	2

Total            23            27

**Summer Term**

Exit option with UG Diploma of Level 6 on successful completion of 80 credits from 4 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

**SEMESTER - 5**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			PR Management and Entrepreneurship	3	0	0	3	3
2	PCC	N		Linux Lab	0	0	2	1	2
3	PCC	N		Introduction to Microfabrication Technology	3	0	0	3	3
4	PCC	R		Digital Signal Processing	3	0	0	3	3
5	PCC	R		Digital Signal Processing Lab	0	0	2	1	2
6	PCC	R		VLSI Design	3	1	0	4	4
7	PCC	N		VLSI Design Lab	0	0	2	1	2
8	PEC			PE-1	3	0	0	3	3
9	PR			Project-V	0	0	4	2	4
				<b>TOTAL</b>					

	Credits	Hours
HSMC	3	3
BSC		
ESC		
PCC	13	16
PEC	3	3
OEC		
PR	2	4

Total                      21                      26

SEMESTER - 6									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Analog IC Design	3	1	0	4	4
2	PCC	N		Analog IC Design Lab	0	0	2	1	2
3	PCC	N		VLSI Verification &Testing	3	0	0	3	3
4	PCC	N		VLSI Verification &Testing Lab	0	0	2	1	2
5	PEC			PE-2	3	0	0	3	3
6	PEC			PE-3	3	0	0	3	3
7	OEC			OE-1	3	0	0	3	3
8	OEC			OE-2	3	0	0	3	3
9	PR			Project-VI	0	0	4	2	4
10	HSMC			Soft Skills for Professionals (Audit)	0	1	0	Audit	1
				<b>TOTAL</b>				<b>23</b>	<b>28</b>
<b>Summer Term</b>									

Exit option with B.Sc. of Level 7 on successful completion of 120 credits from 6 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

	Credits	Hours
HSMC		
BSC		
ESC		
PCC	9	11
PEC	6	6
OEC	6	6
PR	2	4
MNC	0	1

Total                      23                      28

**SEMESTER - 7**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Computer Architecture	3	0	0	3	3
2	PEC			PE-4	3	0	0	3	3
3	PEC			PE-5	3	0	0	3	3
4	OEC			OE-3	3	0	0	3	3
5	OEC			OE-4	3	0	0	3	3
6	PR			Project-VII	0	0	8	4	8
7	HSMC			Indian Constitution	1	0	0	Audit	1
				<b>TOTAL</b>				<b>19</b>	<b>24</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	3	3
PEC	6	6
OEC	6	6
PR	4	8

Total            19            24

**SEMESTER - 8**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-1				L	T	P		
	PEC			PE-6	3	0	0	3	3
1	OEC			OE-5	3	0	0	3	3
2	OEC			OE-6	3	0	0	3	3
3	PR			Project-VIII	0	0	8	4	8
4				<b>TOTAL</b>				<b>13</b>	<b>17</b>

**OR**

S.No	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-2				L	T	P		
	PR			Industrial Internship				13	
1				<b>TOTAL</b>				<b>13</b>	

**OR**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-3				L	T	P		
	PEC			PE-6	3	0	0	3	3
1	OEC			OE-5	3	0	0	3	3
2	OEC			OE-6	3	0	0	3	3
3	INT			Industrial	0	0	8	4	8
4				<b>TOTAL</b>				<b>13</b>	<b>17</b>

	Credits	Hours
HSMC		
BSC		
ESC		
PCC		
PEC	3	3
OEC	6	6
PR	4	8

Total                      13                      17



<b>COURSE CATEGORY-WISE CREDIT BREAKUP</b>		
		<b>Total Credits</b>
Humanities & Social Sciences	HSMC	15
Basic Science	BSC	20
Engineering Science	ESC	23
Professional Core	PCC	53
Professional Elective	PEC	18
Open Elective	OEC	18
Project	PR	16
<b>TOTAL</b>		<b>163</b>
Total Hours		204

## **Annexure V**

### **Modified Electronics Engineering (VLSI Design and Technology) Degree Curriculum as per suggestions during BoS Meeting**

## PROPOSED CATEGORY & SEMESTER WISE CREDIT DISTRIBUTION (FINALIZED) ECED (VLSI)

CATEGORY / SEM	HSS	BASIC SC.	ENGG. SC.	PROF. CORE	PROF. ELECTIVE	OPEN ELECTIVE	PROJECT	TOTAL Credits (Hours)
1 SEM	3	9	5.5				1	18.5(24)
2 SEM	3	8	11.5				1	23.5(31)
3 SEM	3	3	4	11			1	21(25)
4 SEM	3		2	17			1	24(29)
5 SEM	3			13	3		2	21(26)
6 SEM				9	6	6	2	23(28)
7 SEM				3	6	6	4	19(24)
8 SEM					3	6	4	13(17)
<b>Total</b>	<b>15</b>	<b>20</b>	<b>23</b>	<b>53</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>163 (204)</b>

**Basic Sc.** – Mathematics, Physics & Chemistry.

**Engg. Sc.** – Engg. Courses offered by one particular department and mandatory to all students irrespective to department.

**Note:-** Only Credits have been defined under the category / semester. However, No. of Courses in each department should be kept Uniform. If deemed fit, liberty of introduction of Theory Courses / Lab courses within the specified credit limit should be given to the departments.

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, SOLAN**

**Course Structure of B.Tech. in Electronics Engineering (VLSI Design & Technology)**

**(TOTAL CREDITS - 163) – APPLICABLE FROM- 2024 ADMISSION BATCH**

**SEMESTER - 1**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			English	2	0	0	2	2
2	HSMC			English Lab	0	0	2	1	2
3	BSC			Engineering Mathematics-I	3	1	0	4	4
4	BSC			Engineering Physics-I	3	1	0	4	4
5	BSC			Engineering Physics Lab-I	0	0	2	1	2
6	ESC			Engineering Graphics/Workshop Practices	0	0	3	1.5	3
7	ESC			Problem Solving and Programming	3	0	0	3	3
8	ESC			Problem Solving and Programming Lab	0	0	2	1	2
9	PR			Project-I	1	0	2	1	2
10	MNC			UHV-I Mandatory Induction Program	2 Weeks			0	
				<b>TOTAL</b>				<b>18.5</b>	<b>24</b>

	Credits	Hours
HSMC	3	4
BSC	9	10
ESC	5.5	8
PCC		
PEC		
OEC		
PR	1	2

Total            18.5            24

SEMESTER - 2									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Universal Human Values- II: Understanding Harmony	2	1	0	3	3
2	BSC			Engineering Mathematics-II	3	1	0	4	4
3	BSC			Engineering Physics-II	3	0	0	3	3
4	BSC			Engineering Physics-II Lab	0	0	2	1	2
5	ESC	N		Electrical Engineering	3	1	0	4	4
6	ESC	N		Electrical Engineering Lab	0	0	2	1	2
7	ESC			Workshop Practices/Engineering Graphics	0	0	3	1.5	3
8	ESC			Data Structures and Algorithms	3	0	0	3	3
9	ESC			Data Structures and Algorithms Lab	0	0	4	2	4
10	PR			Project-II	0	0	2	1	2
11	HSMC			Professional Communication Practice (AUDIT)	0	1	0	0	1
				<b>TOTAL</b>				<b>23.5</b>	<b>31</b>
Summer Term									
Exit option with UG certificate of Level 5 on successful completion of 40 credits from 2 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.									

	Credits	Hours
HSMC	3	4
BSC	8	9
ESC	11.5	16
PCC		
PEC		
OEC		
PR	1	2

Total                      23.5                      31

SEMESTER - 3									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Life Skills and Interpersonal Dynamics	2	1	0	3	3
2	BSC			Semiconductor Physics	3	0	0	3	3
3	ESC	N		Digital System Design	3	0	0	3	3
4	ESC	N		Digital System Design Lab	0	0	2	1	2
5	PCC	N		Electronic Devices	3	1	0	4	4
6	PCC	N		Electronic Devices Lab	0	0	2	1	2
7	PCC	N		Signals and Systems	3	1	0	4	4
8	PCC	N		Signals and Systems Lab	0	0	2	1	2
9	PR			Project-III	0	0	2	1	2
				<b>TOTAL</b>				<b>21</b>	<b>25</b>

	Credits	Hours
HSMC	3	3
BSC	3	3
ESC	4	5
PCC	10	12
PEC		
OEC		
PR	1	2

Total            **21**            **25**

SEMESTER - 4									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			Finance and Accounts	3	0	0	3	3
2	ESC			Environmental Studies	2	0	0	2	2
3	PCC	N		Analog Circuits	3	1	0	4	4
4	PCC	N		Analog Circuits Lab	0	0	2	1	2
5	PCC	N		FPGA Design using Verilog	3	0	0	3	3
6	PCC	N		FPGA Design using Verilog Lab	0	0	2	1	2
7	PCC	R		Analog and Digital Communication	3	1	0	4	4
8	PCC	R		Analog and Digital Communication Lab	0	0	2	1	2
9	PCC	R		Microprocessors and Microcontrollers	3	0	0	3	3
10	PCC	R		Microprocessors and Microcontrollers Lab	0	0	2	1	2
11	PR			Project-IV	0	0	2	1	2
				<b>TOTAL</b>				<b>24</b>	<b>29</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC	2	2
PCC	18	22
PEC		
OEC		
PR	1	2

Total            24            29

Summer Term
Exit option with UG Diploma of Level 6 on successful completion of 80 credits from 4 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

SEMESTER - 5									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	HSMC			PR Management and Entrepreneurship	3	0	0	3	3
2	PCC	N		Linux Lab	0	0	2	1	2
3	PCC	N		Introduction to Microfabrication Technology	3	0	0	3	3
4	PCC	R		Digital Signal Processing	3	0	0	3	3
5	PCC	R		Digital Signal Processing Lab	0	0	2	1	2
6	PCC	R		VLSI Design	3	1	0	4	4
7	PCC	N		VLSI Design Lab	0	0	2	1	2
8	PEC			PE-1	3	0	0	3	3
9	PR			Project-V	0	0	4	2	4
				<b>TOTAL</b>				<b>21</b>	<b>26</b>

	Credits	Hours
HSMC	3	3
BSC		
ESC		
PCC	13	16
PEC	3	3
OEC		
PR	2	4

Total                      21                      26



SEMESTER - 6									
S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Analog IC Design	3	1	0	4	4
2	PCC	N		Analog IC Design Lab	0	0	2	1	2
3	PCC	N		VLSI Verification & Testing	3	0	0	3	3
4	PCC	N		VLSI Verification & Testing Lab	0	0	2	1	2
5	PEC			PE-2	3	0	0	3	3
6	PEC			PE-3	3	0	0	3	3
7	OEC			OE-1	3	0	0	3	3
8	OEC			OE-2	3	0	0	3	3
9	PR			Project-VI	0	0	4	2	4
10	HSMC			Soft Skills for Professionals (Audit)	0	1	0	Audit	1
				<b>TOTAL</b>				<b>23</b>	<b>28</b>
<b>Summer Term</b>									

Exit option with B.Sc. of Level 7 on successful completion of 120 credits from 6 semesters and additional 6 credits from an Internship or Skill-based courses in the summer term.

	Credits	Hours
HSMC		
BSC		
ESC		
PCC	9	11
PEC	6	6
OEC	6	6
PR	2	4
MNC	0	1

Total            23            28

**SEMESTER - 7**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
					L	T	P		
1	PCC	N		Computer Architecture	3	0	0	3	3
2	PEC			PE-4	3	0	0	3	3
3	PEC			PE-5	3	0	0	3	3
4	OEC			OE-3	3	0	0	3	3
5	OEC			OE-4	3	0	0	3	3
6	PR			Project-VII	0	0	8	4	8
7	HSMC			Indian Constitution	1	0	0	Audit	1
				<b>TOTAL</b>				<b>19</b>	<b>24</b>

	Credits	Hours
HSMC	0	1
BSC		
ESC		
PCC	3	3
PEC	6	6
OEC	6	6
PR	4	8

Total            19            24

**SEMESTER - 8**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-1				L	T	P		
	PEC			PE-6	3	0	0	3	3
1	OEC			OE-5	3	0	0	3	3
2	OEC			OE-6	3	0	0	3	3
3	PR			Project-VIII	0	0	8	4	8
4				<b>TOTAL</b>				<b>13</b>	<b>17</b>

**OR**

S.No	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-2				L	T	P		
	PR			Industrial Internship				13	
1				<b>TOTAL</b>				<b>13</b>	

**OR**

S. No.	Course Category	R/N	Subject Code	Name of the Subjects	Course Hours			Credits	Total Hours
	Option-3				L	T	P		
	PEC			PE-6	3	0	0	3	3
1	OEC			OE-5	3	0	0	3	3
2	OEC			OE-6	3	0	0	3	3
3	INT			Industrial	0	0	8	4	8
4				<b>TOTAL</b>				<b>13</b>	<b>17</b>

	Credits	Hours
HSMC		
BSC		
ESC		
PCC		
PEC	3	3
OEC	6	6
PR	4	8

Total            13            17

<b>COURSE CATEGORY-WISE CREDIT BREAKUP</b>		
		<b>Total Credits</b>
Humanities & Social Sciences	HSMC	15
Basic Science	BSC	20
Engineering Science	ESC	23
Professional Core	PCC	53
Professional Elective	PEC	18
Open Elective	OEC	18
Project	PR	16
<b>TOTAL</b>		<b>163</b>
Total Hours		204