



श्री माता वैष्णो देवी विश्वविद्यालय  
Shri Mata Vaishno Devi University  
Kakryal (Katra) - 182 320  
(Faculty of Engineering)

SMVDU/FoE/24/31

Date:- 13/03/24

**MINUTES OF THE MEETING**

A meeting of the following members was held to review the Board of Studies minutes of meeting of various schools, in the office of Dean Faculty of Engineering, School of Philosophy and Culture at 11:10 am on 12.03.2024.

1. Prof. (Dr.) Kumud Ranjan Jha, Dean FoE
2. Prof. (Dr.) M. Eswaramoorthy, Head SoME
3. Dr. V.K. Dogra, Head SoCE
4. Dr. Baijnath Kaushik, Head, SoCSE
5. Dr. Anil Bhardwaj, Head SoECE
6. Dr.V.V.Tyagi, Head SoEM

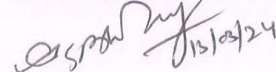
The following Heads could not attend the meeting:-

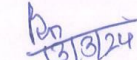
1. Ar. Aditya Kumar Singh, Head SoALD
2. Dr. Vipin Kakkar, Head SoEE

The course structures proposed by BoS (Board of Studies) of the schools under faculty of engineering have been review and they have been found in order by all the members.

It is further recommended to forward these documents to Dean Academic Affair for further proceedings.

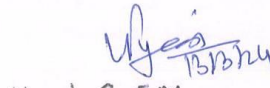
The Meeting ended with a vote of thanks to the Chair.

  
Head SoECE

  
Head, SoCSE

  
Head SoCE

  
Head SoME

  
Head, SoEM

  
Dean Faculty of Engineering

**Copy to:**

1. PS to VC for information of HVC and ratification
2. Dean FoE file
3. All Head of Engineering Schools

Encl. Bos (Some, SoEE, SoCSE, SoCE, SoEM, SoECE)



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

## Shri Mata Vaishno Devi University

School of Computer Science and Engineering  
Faculty of Engineering, SMVDU  
Kakryal, Katra 182320

Reference No: SMVDU/SOCSE/24/387

Date: 11.3.2024

### BoS Cum Curriculum Development Workshop

#### Minutes of Meetings

The BoS members discussed the below mentioned agenda items in the BoS cum Curriculum Development Workshop held on 1st March 2024.

**Agenda item No. 1:** To consider the revision in the course structure for the students of B.Tech (CSE) program from entry batch 2023 onwards as per the BoS cum Curriculum Development Workshop held on 1st March 2024

The detail of the workshop held is attached at Annexure 'A'.

**Agenda item No. 2:** To consider & approve the revised course structure for the students of B.Tech (CSE) program from entry batch 2023 onwards as per the Basic Structure Template (attached as Annexure 'B'), received from academic affairs section.

To re-align the course structure of BTech (Computer Science & Engineering) Programme as per the Basic Structure Template received via email dated 16<sup>th</sup> February 2024 from academic affairs section, the following changes have been proposed in the course structure of B.Tech programme from Entry batch 2023 onwards.

**Agenda item No. 2(a):** To consider and approve removal of various core courses of B.Tech programmes.

S No	Details of Course	Removed Semester	from	LTP	Credits
1	ECL 1010, Basic Electronics	1 <sup>st</sup>		3-0-0	3
2	ECP 1010, Basic Electronics Lab	1 <sup>st</sup>		0-0-2	1
3	LNL 1411, Professional Communication	1 <sup>st</sup>		3-0-0	3
4	LNP 1411, Professional Communication Lab	1 <sup>st</sup>		0-0-2	1
5	PCN 1010, NSS	1 <sup>st</sup>		-	NC
6	MEP 1114, Workshop	2 <sup>nd</sup>		0-0-2	1
7	LNP 1142, Language Lab	2 <sup>nd</sup>		0-0-2	1
8	PCN 3079, Constitution of India	5 <sup>th</sup>		1-0-0	NC
9	CSE 4102, Neural Networks & Fuzzy Set	School Elective - I/ DEC-I		4-0-0	4

Handwritten signatures and dates at the bottom of the page, including "11.3.24" and "11.05.2024".





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## Shri Mata Vaishno Devi University

School of Computer Science and Engineering  
Faculty of Engineering, SMVDU  
Kakryal, Katra 182320

**Agenda item No. 2(b):** To consider and approve the introduction of some new courses for B.Tech (CSE) Students.

Sr. No.	Course Code	Course Name	L-T-P	Credits	Introduced Semester/Elective Group in
1	CSL SE101	Introduction to Computer Application	2-0-0	2	1 <sup>st</sup> (For Non Engineering)
2	CSL AE101	Introduction to Computer Application	2-0-0	2	1 <sup>st</sup> (For Engineering)
3	CSL AE102	Introduction to Cyber Security	2-0-0	2	2 <sup>nd</sup>
4	CSL VA102	Introduction to Artificial Intelligence	2-0-0	2	2 <sup>nd</sup>
5	CSL DE305	Computer Vision	4-0-0	4	DEC - I
6	CSL DE312	Probability & Stochastic Processes	4-0-0	4	DEC - II
7	CSL DE322	Mobile & App Development	4-0-0	4	DEC - III

The details of the course with updated syllabus for serial number 1,2,3,4,5,6 & 7 are attached as **Annexure 'C', 'C', 'D', 'E', 'F', 'G' & 'H'** respectively.

**Agenda item No. 2(c):** To consider and approve shifting of various courses of B.Tech programme.

S No	Details of Course	Shifted from Semester	Shifted to Semester
1	Digital Electronics	2nd	1st
2	Digital Electronics Lab	2nd	1st
3	Discrete Structures	2nd	3rd
4	Computer Organization & Architecture	3rd	4th
5	Microprocessors & Interfacing	4th	3rd
6	Microprocessors & Interfacing Lab	4th	3rd
7	Compiler Design	6th	4th



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

## Shri Mata Vaishno Devi University

School of Computer Science and Engineering  
Faculty of Engineering, SMVDU  
Kakryal, Katra 182320

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**Agenda item No. 2(d): To consider & approve the following core courses of B.Tech(CSE) to be offered as an elective courses.**

Sr. No.	Course Name	L-T-P	Credits	Removed from Semester	Shifted To
1.	Computer Network Security	3-0-0	3	6 <sup>th</sup>	DEC - II
2	Nature Inspired Algorithm	3-0-0	3	7 <sup>th</sup>	DEC - III
3	High Performance Computing	3-0-0	3	7 <sup>th</sup>	DEC - IV

**Agenda item No. 2(e): To consider and approve a modification in the title of the course 'Artificial Intelligence'**

Existing Details	Proposed Changes
Artificial Intelligence	Artificial Intelligence: Constraint Satisfaction Problem

The Board discussed the agenda items mentioned above at point numbers 2 and from sub-point numbers 2(a) to 2(e) respectively and approved the revised course structure proposed for B.Tech CSE programme applicable from entry batch 2023 onwards. The modified course structure is attached as Annexure 'I'.

**Agenda item No. 3: To consider & approve inclusion of at least one NPTEL course in each semester against its equivalent core/elective course.**

To facilitate students to carry on with the remote field projects/internships or even to provide students enough choices to pursue studies in online mode for some courses, the board proposes to include NPTEL courses against its equivalent core/elective courses in each semester.

The list of NPTEL courses offered is attached as Annexure 'J'.

**Agenda Item No 4: To modify the course structure of M.Tech CSE from Entry Batch 2024.**

As discussed in the BoS cum Curriculum Development Workshop, the courses structure of MTech CSE programme is updated for 3<sup>rd</sup> semester to include only Internship of 20 credits.

The revised course structure is mentioned at Annexure 'K'.





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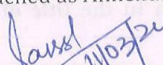
## Shri Mata Vaishno Devi University


School of Computer Science and Engineering  
Faculty of Engineering, SMVDU  
Kakryal, Katra 182320

### Agenda item No. 5: To consider & approve the courses offered by school of Computer Science & Engineering for B.Tech in Mathematics & Computing.

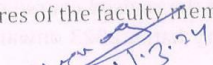
The board proposed the courses to be offered by school of Computer Science & Engineering for B.Tech in Mathematics & Computing programme for the academic session 2024-25 after thorough deliberations with the head and the faculty members of the school of Mathematics for finalization of its course structure.

The final course structure of B.Tech in Mathematics and Computing programme is attached as Annexure 'L'.

  
Dr. Sakshi Arora  
Member Secretary, BoS

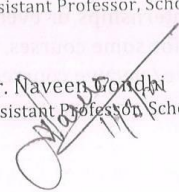
  
Dr. Baijnath Kaushik  
Chairman BoS  
Associate Professor & Head, SoCSE

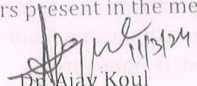
Signatures of the faculty members present in the meeting:

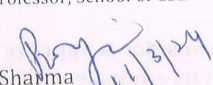
  
Dr. Manoj Kumar Gupta  
Associate Professor, School of CSE

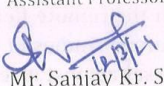
on leave


Dr. Sonika Gupta  
Assistant Professor, School of CSE

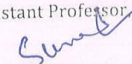
  
Dr. Naveen Goudhi  
Assistant Professor, School of CSE

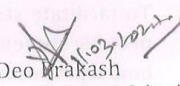
  
Dr. Ajay Koul  
Associate Professor, School of CSE

  
Dr. Pooja Sharma  
Assistant Professor, School of CSE

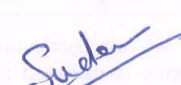
  
Mr. Sanjay Kr. Sharma  
Assistant Professor, School of CSE

  
Mr. Manoj Verma  
Assistant Professor, School of CSE

  
Dr. Sunanda  
Assistant Professor, School of CSE

  
Mr. Deo Krakash  
Assistant Professor, School of CSE

  
Mr. Anuj Mahajan  
(Assistant Professor, SoCSE)

  
Mr. Sudesh Kumar  
(Assistant Professor, SoCSE)



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

## Shri Mata Vaishno Devi University

School of Computer Science and Engineering

Faculty of Engineering, SMVDU

Kakryal, Katra 182320

### External BoS members

*Akshay Bhargava*

Prof Manoj Mishra  
Computer Science & Engg Dept,  
IIT Roorkee

Mr. Akshay Bhargava  
Head, PMO Govt Industry Solutions,  
Tata Consultancy Service

### Special invitees for the Curriculum Development Workshop held on 1st March 2024.

Prof Phalguni Gupta  
Vice-Chancellor and Professor  
Department of Computer Engineering  
& Applications, GLA University

*Manju Khari*  
Prof Manju Khari  
Professor, School of Computer  
Science,  
JNU, New Delhi

*Puneet Goyal*  
Dr Puneet Goyal  
Associate professor, Department of  
Computer Science & Engineering,  
IIT Ropar





### Annexure 'A'



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

**Shri Mata Vaishno Devi University**

School of Computer Science and Engineering

Faculty of Engineering, SMVDU

Kakryal, Katra 182320

Ref No: *SMVDU/SOCSE/24/386*

Date: *11.3.2024*

#### Note

As per the directions received from the competent authority regarding BoS cum Curriculum Development Workshop for revision in the NEP course structure of School of Computer Science & Engineering, the school had organized a 'BoS cum Curriculum Development Workshop' on 1<sup>st</sup> March 2024 for the course structure applicable from batch 2023 onwards.

The programme is attended by the all faculty members of School of Computer Science & Engineering.

The three invited guests also attended the meeting namely:-

- a) Prof Phalguni Gupta, Vice-Chancellor and Professor, Department of Computer Engineering & Applications, GLA University
- a) Prof Manju Khari, Professor, School of Computer Science, JNU, New Delhi
- b) Dr Puneet Goyal, Associate professor, Department of Computer Science & Engineering, IIT Ropar

*Bn*  
*11/03/24*

Head,  
School of Computer Science & Engineering







**ACADEMIC AFFAIRS SECTION**  
**SHRI MATA VAISHNO DEVI UNIVERSITY**

**3<sup>rd</sup> Semester**

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	BSC-5		Basic Science Course-5	x	x	x	3
2.	ESC-3		Engineering Science course-3	x	x	x	4
3.	DCC-3		Departmental Core course-3	x	x	x	4
4.	DCC-4		Departmental Core course-4	x	x	x	4
5.	DCC-5		Departmental Core course-5	x	x	x	4
6.	SEC-3		Skill enhancement course-3	x	x	x	2
7.	VAC-3		Ability Enhancement Course/ Value Added Course	x	x	x	2
8.	PR	BTI PR201	Summer internship-I	0	0	2	1
			<b>Total Credits</b>				<b>24</b>

**4<sup>th</sup> Semester**

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	DCC-6		Departmental Core course-6	X	X	X	4
2.	DCC-7		Departmental Core course-7	X	X	X	4
3.	DCC-8		Departmental Core course-8	X	X	X	4
4.	DCC-9		Departmental Core course-9	X	X	X	4
5.	DCC-10		Departmental Core course-10	X	X	X	4
6.	VAC-4		Value Added Course-4	X	X	X	2
7.	MAC-2		Environmental Science & Education	2	0	0	NC
			<b>Total Credits</b>				<b>22</b>

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**ACADEMIC AFFAIRS SECTION  
SHRI MATA VAISHNO DEVI UNIVERSITY**

**5<sup>th</sup> Semester**

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	DCC-11		Departmental Core course-11	X	X	X	4
2.	DCC-12		Departmental Core course-12	X	X	X	4
3.	DCC-13		Departmental Core course-13 (AI and ML for that Stream or may be offered in sixth semester as	X	X	X	4
4.	DEC-1		School Elective – I	X	X	X	4
4.	DEC-/GEC-1		School Elective – II/Generic elective -I	X	X	X	4
5.	PR		Summer Internship-II	X	X	X	1
6.	DCC		Project Work-I	0	0	4	2
Total Credits							23

AI and ML for Branch as core course for all B. Tech streams may be offered in fifth or sixth semester

**6<sup>th</sup> Semester**

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	DCC-14		Departmental Core course-14	x	x	x	4
2.	DCC-15		Departmental Core course-15	x	x	x	4
3.	DEC-3		School Elective - III	x	x	x	4
4.	DEC-4/GEC-2		School Elective – IV/Generic elective -II	x	x	x	4
5.	AEC (comp)		Management Course/ Entrepreneurship/Economy	x	x	x	3
6.	PR		Project Work - II	0	0	4	2
7.	MAC-3		Indian Knowledge System	2	0	0	NC
Total Credits							21

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**ACADEMIC AFFAIRS SECTION  
SHRI MATA VAISHNO DEVI UNIVERSITY**

7<sup>th</sup> Semester

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	DCC-16		Departmental Core course-16	x	x	x	4
2	DEC-5		School Elective – V	x	x	x	4
3	DEC-6-/GEC-3		School Elective – VI/ Generic Elective – III	x	x	x	4
4	DCC		Project Work –III	0	0	8	4
5	PR		Summer Internship – III	0	0	4	2
			<b>Total Credits</b>				<b>18</b>

8<sup>th</sup> Semester

S. No.	Category	Course Code	Course Title	L	T	S/P	C
1.	PR		Major Project / Internship (Industrial or In-house Project)	0	0	14	7
2.	GEC-4		Generic Elective-IV/NPTEL	3	0	0	3
			Total Credits				10
			<b>Total Credits (B. Tech)</b>				<b>160</b>

Note: One Discipline specific core course in AI and ML relevant to the particular stream  
(e.g.

AI and ML for Mechanical engineering) may be offered in the fifth or sixth semester.

Award of Degree:

**B. Tech. (Honor's) Program:** The four-year B. Tech. (Honor's) degree in the Major discipline will be awarded to those who have completed the credit requirement of a four-year B.Tech. degree program and earned 12 Additional Credits through DEC's provided a minimum of seven DEC's earned are from the basket of a particular specialization/domain.

These elective courses can be registered during V to VIII semester subject to a maximum limit of course registration up to 32 credits, including core and other courses.

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## ACADEMIC AFFAIRS SECTION SHRI MATA VAISHNO DEVI UNIVERSITY

Department Elective Course – 7	4	DEC
Department Elective Course – 8	4	DEC
Department Elective Course – 9	4	DEC

These elective courses can be registered during V to VIII semester subject to a maximum limit of course registration up to 32 credits, including core and other courses. On exit, student shall be awarded B.Tech.(Honor's) in Major discipline with specialization in the specific domain.

### 2. B. Tech. Program with Minor/Interdisciplinary Area Specialization:

The four-year B. Tech. degree in the Major discipline with Minor in a specific domain will be awarded to those who have completed the credit requirement of four-year B. Tech degree program and earned 12 Additional Credits through GECs provided all credits earned through GECs are from the basket of a particular Minor.

Generic Elective Course – 5	4	GEC
Generic Elective Course – 6	4	GEC
Generic Elective Course – 7	4	GEC

The set of courses required to be taken, by students of other School, to obtain Minor/Interdisciplinary Area Specialization will be clearly defined by each School for the benefit of the students. The four-year B. Tech. degree with Minor in a specific domain will be awarded to those who complete a four-year degree program with 172 credits and have satisfied the credit requirement. A student, who wishes to pursue B. Tech. with Minor, shall earn 12 additional credits from General Elective course provided all 7 GECs (GEC1 to GEC7) are earned from the basket of courses prescribed for that particular Minor.

#### Note:

Each school should clearly mention the set of prerequisites if any for choosing a minor specialization so that the student can obtain the minor specialization of his/her own choice.

Each school should prepare a comprehensive list of Discipline specific electives and Generic electives according to the area of specialization.

Certain core courses of introductory level may be offered as generic elective by the school if required.

Specializations may be offered by the school in emerging areas of importance.

#### Credit Break Up Revised

S. No.	Category	Credit Break up (AICTE/ECE)	Credit break Up SMVDU
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ACADEMIC AFFAIRS SECTION  
SHRI MATA VAISHNO DEVI UNIVERSITY

1	Humanities and Social Sciences, Management Courses (AEC/VAC)	15	13
2	Basic Science Courses	23	19
3	Engineering Science Courses	17	12
	Skill Enhancement Courses	06	06
4	Departmental Core Courses	61	64
5	Departmental Elective Courses/Generic elective courses	12	27
7	Project Work, Seminar/Internship	20	19
	Mandatory Course	UHV-II, IKS, Env	NC
	Total Credits	160	160

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11/3



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

## Shri Mata Vaishno Devi University

School of Computer Science and Engineering

Faculty of Engineering, SMVDU

Kakryal, Katra 182320

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### Annexure 'I'

#### Proposed Course Structure for B. Tech(Computer Science & Engineering) Programme [Entry Batch 2023 onwards]

##### Semester 1

Course Code	Course Title	L	T	P	C	Category
MTL BS101	Engineering Mathematics-I	3	1	0	4	BSC 1
ECL ES103	Digital Electronics	3	0	0	3	ESC 1
ECP ES103	Digital Electronics Lab	0	0	2	1	ESC 1
PHL BS101	Engineering Physics	3	0	0	3	BSC 2
PHP BS101	Engineering Physics Lab	0	0	2	1	BSC 2
CSL ES101	Introduction to 'C' Programming	3	0	0	3	ESC 2
CSP ES101	'C' Programming Lab	0	0	2	1	ESC 2
MEM SE103	Engineering Graphics with CAD	1	0	2	2	SEC 1
	AEC 1/VAC 1	2	0	0	2	AEC 1/VAC 1
	<b>Total Credits</b>	15	1	8	20	

##### Semester 2

Course Code	Course Title	L	T	P	C	Category
MTL BS102	Engineering Mathematics-II	3	1	0	4	BSC 3
BTL BS102	Biology for Engineers	3	1	0	4	BSC 4
CSL DC102	Programming using Python	3	0	0	3	DCC 1
CSP DC102	Python Programming Lab	0	0	2	1	DCC 1
CSL DC104	Data structure	3	0	0	3	DCC 2
CSP DC104	Data Structure Lab	0	0	2	1	DCC 2
MEM SE101	Engineering Workshop	1	0	2	2	SEC 2
	AEC 2	2	0	0	2	AEC 2
	VAC 2	2	0	0	2	VAC 2
PCLMA102	Universal Human Values - II	2	0	0	NC	MAC 1
	<b>Total Credits</b>	17	2	6	22	





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## Shri Mata Vaishno Devi University

School of Computer Science and Engineering

Faculty of Engineering, SMVDU

Kakryal, Katra 182320

### Semester 3

Course Code	Course Title	L	T	P	C	Category
	Introduction to Logic	2	0	0	2	VAC 3
CSL DC201	Theory of Computation	3	1	0	4	DCC 3
CSL SE201	Artificial Intelligence: Constraint Satisfaction Problems	2	0	0	2	SEC 3
	Discrete Structures	3	0	0	3	BSC 5
CSL DC203	Operating Systems	3	0	0	3	DCC 4
CSP DC203	Operating Systems Lab	0	0	2	1	DCC 4
	Microprocessors & Interfacing	3	0	0	3	ESC 3
	Microprocessors & Interfacing Lab	0	0	2	1	ESC 3
CSI PR201	Summer Internship-I	0	0	2	1	PR
CSL DC205	Data Science & Analytics	3	0	0	3	DCC 5
CSP DC205	Data Science & Analytics Lab	0	0	2	1	DCC 5
	<b>Total Credits</b>	19	1	8	24	

### Semester 4

Course Code	Course Title	L	T	P	C	Category
	Value Added Course-4	2	0	0	2	VAC 4
	Environmental Science & Education	2	0	0	NC	MAC 2
CSL DC202	Soft Computing	3	0	0	3	DCC 6
CSP DC202	Soft Computing Lab	0	0	2	1	DCC 6
CSL DC204	Design & Algorithm Analysis	3	0	0	3	DCC 7
CSP DC204	Design & Algorithm Analysis Lab	0	0	2	1	DCC 7
CSL DC206	Database Management Systems	3	0	0	3	DCC 8
CSP DC206	Database Management Systems Lab	0	0	2	1	DCC 8
CSL DC208	Computer Organization & Architecture	3	1	0	4	DCC 9
CSL DC210	Compiler Design	3	1	0	4	DCC 10
	<b>Total Credits</b>				22	



(Approved Under Section 2(f) and 12(B) of UGC act of 1956)

## Shri Mata Vaishno Devi University

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### Semester 5

Course Code	Course Title	L	T	P	C	Category
CSL DE3XX	School Elective - I	4	0	0	4	DEC- 1
	School Elective - II/Generic Elective -I	4	0	0	4	DEC-2 /GEC-1
CSL DC301	Computer Networks & Communication	3	0	0	3	DCC 11
CSP DC301	Computer Networks & Communication Lab	0	0	2	1	DCC 11
CSL DC303	Object Oriented Programming using JAVA	3	0	0	3	DCC 12
CSP DC303	Object Oriented Programming Lab using JAVA	0	0	2	1	DCC 12
CSL DC305	Machine Learning	3	0	0	3	DCC 13
CSP DC305	Machine Learning Lab	0	0	2	1	DCC 13
CSI PR301	Summer Internship-II	0	0	2	1	PR
CSD PR301	Project Work - I	0	0	4	2	DCC
	Total Credits				23	

### Semester 6

Course Code	Course Title	L	T	P	C	Category
CSL DE3XX	School Elective - III	4	0	0	4	DEC-3
CSL DE3XX	School Elective - IV/Generic Elective -II	4	0	0	4	DEC-4 /GEC-2
	Management Course/ Entrepreneurship/Economy	3	0	0	3	AEC (compulsory)
CSL DC302	Deep Learning	3	0	0	3	DCC 14
CSP DC302	Deep Learning Lab	0	0	2	1	DCC 14
CSL DC304	Software Engineering	3	0	0	3	DCC 15
CSP DC304	Software Engineering Lab	0	0	2	1	DCC 15
CSD PR302	Project Work - II	0	0	4	2	DCC
	Indian Knowledge System	2	0	0	NC	MAC 3
CSS PR302	Comprehensive Exam	0	0	0	NC	
	Total Credits				21	

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### LIST OF DEPARTMENT ELECTIVE COURSES

\*As per AICTE guidelines, the following three subjects have been included in list of DEC's.

1. Advanced Mobile Communication using 5G,
2. Internet of Things,
3. Cyber Security

LIST OF PROGRAM ELECTIVES (Theory Based)						
S. No.	Course Code	Course Title	L	T	P	C
<b>DEC – I</b>						
1	CSL DE301	Software Defined Networking	3	0	2	4
2	CSL DE303	Storage Networks	4	0	0	4
3	CSL DE305	Computer Vision	4	0	0	4
4	CSE DE307	Web Programming using JavaScript	3	0	2	4
5	CSL DE309	Data mining & warehousing	3	0	2	4
6	CSL DE311	Block Chain Technology	4	0	0	4
<b>DEC – II</b>						
1	CSL DE302	Cloud Computing	4	0	0	4
2	CSL DE304	Parallel & Distributed Computing	4	0	0	4
3	CSL DE306	Advanced Mobile Communication using 5G	4	0	0	4
4	CSL DE308	Advanced Computer Architecture	4	0	0	4
5	CSL DE310	Computer Network Security	4	0	0	4
6	CSL DE312	Probability & Stochastic Processes	4	0	0	4
<b>DEC – III</b>						
1	CSL DE314	Internet of Things	4	0	0	4
2	CSL DE316	Human Computer Interaction	4	0	0	4
3	CSL DE318	Quantum Computing	3	0	2	4
4	CSL DE320	Nature Inspired Algorithms	4	0	0	4
5	CSL DE322	Mobile & App Development	4	0	0	4
<b>DEC – IV</b>						
1	CSL DE401	Wireless Networks	4	0	0	4
2	CSL DE403	Information Coding Practices	4	0	0	4
3	CSL DE405	Computer Embedded Systems	4	0	0	4
4	CSL DE407	Multimedia and Virtual Reality	4	0	0	4
5	CSL DE409	High Performance Computing	4	0	0	4
<b>DEC – V</b>						
1	CSL DE411	Metaheuristic Design Framework	4	0	0	4
2	CSL DE413	Cyber Security	4	0	0	4
3	CSL DE415	E-Commerce & Cyber Laws	4	0	0	4
4	CSL DE417	Digital Forensic	4	0	0	4
5	CSL DE419	Robotics & Vision Control	4	0	0	4





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### B. Tech. (Honours) Computer Science & Engineering

#### Proposed Course Structure as per AICTE (NEP) Guidelines

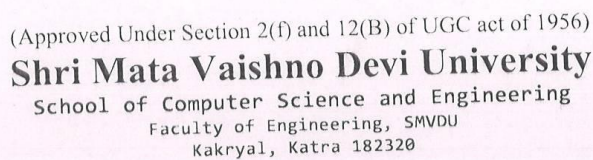
**Additional requirements for B. Tech. (Honours)** The four-year B. Tech. (Honours) degree in the Major discipline will be awarded to those who completed the credit requirement of a four-year B.Tech. degree programme and earned 12 Additional Credits through DEC's.

The four-year B. Tech. degree in the Major discipline will be awarded to those who completed a four-year degree programme with 172 credits and have satisfied the credit requirement.

A student, who wishes to pursue B. Tech. (Honours), shall earn 12 additional credits from following Departmental Elective course

LIST OF PROGRAM ELECTIVES (Theory Based)						
S. No.	Course Code	Course Title	L	T	P	C
<b>DEC – I</b>						
1	CSL DE301	Software Defined Networking	3	0	2	4
2	CSL DE303	Storage Networks	4	0	0	4
3	CSL DE305	Computer Vision	4	0	0	4
4	CSE DE307	Web Programming using JavaScript	3	0	2	4
5	CSL DE309	Data mining & warehousing	3	0	2	4
6	CSL DE311	Block Chain Technology	4	0	0	4
<b>DEC – II</b>						
1	CSL DE302	Cloud Computing	4	0	0	4
2	CSL DE304	Parallel & Distributed Computing	4	0	0	4
3	CSL DE306	Advanced Mobile Communication using 5G	4	0	0	4
4	CSL DE308	Advanced Computer Architecture	4	0	0	4
5	CSL DE310	Computer Network Security	4	0	0	4
6	CSL DE312	Probability & Stochastic Processes	4	0	0	4
<b>DEC – III</b>						
1	CSL DE314	Internet of Things	4	0	0	4
2	CSL DE316	Human Computer Interaction	4	0	0	4
3	CSL DE318	Quantum Computing	3	0	2	4
4	CSL DE320	Nature Inspired Algorithms	4	0	0	4
5	CSL DE322	Mobile & App Development	4	0	0	4
<b>DEC – IV</b>						
1	CSL DE401	Wireless Networks	4	0	0	4
2	CSL DE403	Information Coding Practices	4	0	0	4
3	CSL DE405	Computer Embedded Systems	4	0	0	4
4	CSL DE407	Multimedia and Virtual Reality	4	0	0	4
5	CSL DE409	High Performance Computing	4	0	0	4
<b>DEC – V</b>						
1	CSL DE411	Metaheuristic Design Framework	4	0	0	4
2	CSL DE413	Cyber Security	4	0	0	4
3	CSL DE415	E-Commerce & Cyber Laws	4	0	0	4
4	CSL DE417	Digital Forensic	4	0	0	4
5	CSL DE419	Robotics & Vision Control	4	0	0	4

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The list of Generic Elective Courses with two minor specializations namely-

1. B. Tech. (Computer Science & Engineering), **Minor-I, Specialization in Artificial Intelligence**
2. B. Tech. (Computer Science & Engineering), **Minor-II, Specialization in Information Security**

List of Generic Elective Courses (Theory Based)									
S. No.	Course Code	Course Title	Pre Requisites	L	T	P	C	Semester	Minor Basket
<b>GEC – I</b>									
1	CSL GE301	Introduction to Artificial Intelligence	Nil	4	0	0	4	5 <sup>th</sup>	AI(1)
2	CSL GE303	Computer Network & Communication	Nil	4	0	0	4	5 <sup>th</sup>	ISS(1)
3	CSL GE305	Probability & Statistics	Nil	4	0	0	4	5 <sup>th</sup>	AI(2)
4	CSL GE307	Information & Coding Practices	Nil	4	0	0	4	5 <sup>th</sup>	ISS(2)
<b>GEC – II</b>									
5	CSL GE302	Introduction to Machine Learning	Introduction to Artificial Intelligence	4	0	0	4	6 <sup>th</sup>	AI(3)
6	CSL GE304	Wireless Networks	Computer Network & Communication	4	0	0	4	6 <sup>th</sup>	ISS(3)
7	CSL GE306	Data Analytics	Probability & Statistics	4	0	0	4	6 <sup>th</sup>	AI(4)
8	CSL GE308	Internet of Things	Nil	4	0	0	4	6 <sup>th</sup>	ISS(4)
<b>GEC – III</b>									
9	CSL GE401	Soft Computing	Introduction to Machine Learning	4	0	0	4	7 <sup>th</sup>	AI(5)
10	CSL GE403	Introduction to Cyber Security	Nil	4	0	0	4	7 <sup>th</sup>	ISS(5)
11	CSL GE405	Natural Language Processing	Introduction to Machine Learning	4	0	0	4	7 <sup>th</sup>	AI(6)
12	CSL GE407	Block Chain Technology	Computer Network & Communication	4	0	0	4	7 <sup>th</sup>	ISS(6)
<b>GEC – IV</b>									
13	CSL GE402	Artificial Intelligence for Engineering Applications	Introduction to Artificial Intelligence	4	0	0	4	8 <sup>th</sup>	AI(7)
14	CSL GE404	Privacy & Security in Online Social Media	Introduction to Cyber Security	4	0	0	4	8 <sup>th</sup>	ISS(7)
15	CSL GE406	Prompt Engineering	Introduction to Artificial Intelligence	4	0	0	4	8 <sup>th</sup>	AI(8)
16	CSL GE408	Information Response & Management	Introduction to Cyber Security	4	0	0	4	8 <sup>th</sup>	ISS(8)
17	CSL GE410	Vision Transformers	Introduction to Artificial Intelligence	4	0	0	4	8 <sup>th</sup>	AI(9)

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\*AI stands for Artificial Intelligence. Students aspiring for minor specialization in AI shall have to earn 12 additional credits from the course AI(1) to AI(9).

\*IS stands for Information Security. Students aspiring for minor specialization in Information System Security shall have to earn 12 additional credits from the course ISS(1) to ISS(8).

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**Annexure 'J'**

**List of NPTEL Courses Offered for B.Tech Programme  
[Entry batch 2023]**

**\*Courses offered through Swayam and NPTEL (Semester II)**

Name of the School	Name of the course (Core/ Open Elective/ School Elective/AEC/SEC/VAC)	Name of course at SWAYAM/ NPTEL Platform
SoCSE	Introduction to Cyber Security (CSL AE102)	Privacy and Security in Online Social Media (noc24-cs04) <a href="https://onlinecourses.nptel.ac.in/noc24_cs04/preview">https://onlinecourses.nptel.ac.in/noc24_cs04/preview</a>
SoCSE	Introduction to Artificial Intelligence (CSL VA102)	An Introduction to Artificial Intelligence (noc24-cs08) <a href="https://onlinecourses.nptel.ac.in/noc24_cs08/preview">https://onlinecourses.nptel.ac.in/noc24_cs08/preview</a>

**\*Courses offered through Swayam and NPTEL (Semester IV)**

Name of the School	Name of the course (Core/ Open Elective/ School Elective/AEC/SEC/VAC)	Name of course at SWAYAM/ NPTEL Platform
SoCSE	Microprocessor & Interfacing (ECL 2060)	Microprocessors and Interfacing (noc24-ee40) <a href="https://onlinecourses.nptel.ac.in/noc24_ee40/preview">https://onlinecourses.nptel.ac.in/noc24_ee40/preview</a>

Name of the School	Name of the course (Core/ Open Elective/ School Elective/AEC/SEC/VAC)	Name of course at SWAYAM/ NPTEL Platform
<b>Open Elective - I</b>		
SoCSE	-	Education for sustainable Development (noc24-hs04) <a href="https://onlinecourses.nptel.ac.in/noc24_hs04/preview">https://onlinecourses.nptel.ac.in/noc24_hs04/preview</a>





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### \*Courses offered through Swayam and NPTEL (Semester VI)

Name of the School	Name of the course (Core/ Open Elective/ School Elective/AEC/SEC/VAC)	Name of course at SWAYAM/ NPTEL Platform
School Elective - II		
SoCSE	Cloud Computing (CSE 4152)	Cloud Computing (noc24-cs17) <a href="https://onlinecourses.nptel.ac.in/noc24_cs17/preview">https://onlinecourses.nptel.ac.in/noc24_cs17/preview</a>
SoCSE	Parallel & Distributed Computing (CSE 4151)	Parallel Computer Architecture (noc24-cs63) <a href="https://onlinecourses.nptel.ac.in/noc24_cs63/preview">https://onlinecourses.nptel.ac.in/noc24_cs63/preview</a>
SoCSE	Deep Learning (CSE 6036)	Deep Learning (noc24-cs59) <a href="https://onlinecourses.nptel.ac.in/noc24_cs59/preview">https://onlinecourses.nptel.ac.in/noc24_cs59/preview</a>
SoCSE	Advanced Computer Architecture (CSE 4062)	Advanced Computer Architecture (noc24-cs06) <a href="https://onlinecourses.nptel.ac.in/noc24_cs06/preview">https://onlinecourses.nptel.ac.in/noc24_cs06/preview</a>

### \*Courses offered through Swayam and NPTEL (Semester VIII)

Name of the School	Name of the course (Core/ Open Elective/ School Elective/AEC/SEC/VAC)	Name of course at SWAYAM/ NPTEL Platform
Open Elective - III		
SoCSE	-	Enhancing Soft Skills and Personality (noc24-hs26) <a href="https://onlinecourses.nptel.ac.in/noc23_hs30/preview">https://onlinecourses.nptel.ac.in/noc23_hs30/preview</a>

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**Annexure 'K'**

**Course Structure of M. Tech (Computer Science & Engineering) programme  
[Entry Batch 2024]**

**Semester I**

**First Year**

S.No	Course Code	CourseTitle	L	T	S/P	Credit
1	CSL 6025	Advanced Programming	3	0	0	3
2	CSP 6025	Advanced Programming Lab	0	0	2	1
3	CSL 6103	Artificial Intelligence & fuzzy Logic	3	1	0	4
4	CSL 7133	Research Methodology	4	0	0	4
5	CSL 6113	Digital Image Processing	3	0	0	3
6	CSP 6113	Digital Image Processing Lab	0	0	2	1
7	CSL 6106	Advance Computer Networks	3	0	0	3
8	CSP 6106	Advance Computer Networks Lab	0	0	2	1
		<b>TotalCredits</b>	16	1	6	20

**Semester II**

**First Year**

S. No	Course Code	Course Title	L	T	S/P	Credit
1	CSL 6088	Data Mining and Web Algorithms	3	0	0	3
2	CSL 6034	Soft Computing	3	0	0	3
3	CSP 6034	Soft Computing Lab	0	0	2	1
4	CSL 6109	Internet of Things	3	0	0	3
5	CSP 6109	Internet of Things Lab	0	0	2	1
6	CSL 6152	Cloud Computing	3	0	0	3
7	CSP 6152	Cloud Computing Lab	0	0	2	1
8		Elective-I	3	0	0	3
9	CSC 6171	Colloquium	0	0	2	1
10		Open Elective-I	3	0	0	3
		<b>TotalCredits</b>	18	0	8	22





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### Semester III

### Second Year

S. No	Course Code	Course Title	L	T	S/P	Credit
1	CSD 7006	Project/Internship with Thesis	0	0	40	20
TotalCredits			0	0	40	20

### Semester IV

### Second Year

S. No	Course Code	Course Title	L	T	S/P	Credit
1	CSD 7007	Dissertation/Internship with Thesis	0	0	40	20
TotalCredits			0	0	40	20

Total credits in M.Tech (CSE) =82

Minimum Total Credits to be earned in order to become eligible for award of M.Tech. (Two Year Full Time)  
Degree: 80

### List of Electives

Course Code	Course Title	L-T-P	Credit
Elective – I			
CSE6125	Cyber Security	3-0-0	3
CSE6102	Advance Algorithms	3-0-0	3
CSL6110	Big Data Science & Analytics	3-0-0	3
CSE6016	E-Commerce & Cyber Law	3-0-0	3
CSE6017	Block Chain Coding	3-0-0	3

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**Proposed Engineering Structure for 'B-Tech in Mathematics & Computing' under NEP 2020**

## First Year

1 <sup>st</sup> Semester							
S. No	Course Code	Course Title	L	T	P	Credit	Category
1	MTL BS101	Engineering Mathematics-I	3	1	0	4	BSC
2	PHL BS101	Engineering Physics- I	3	0	0	3	BSC
3	PHP BS101	Engineering Physics -I Lab	0	0	2	1	BSC
4	BTL BS101	Applied Chemistry	3	0	0	3	BSC
5	BTP BS101	Applied Chemistry Lab	0	0	2	1	BSC
6	CSL DC 101	Introduction to 'C' Programming	3	0	0	3	ESC
7	CSP DC101	'C' Programming Lab	0	0	2	1	ESC
8	MEP SExxx	Engineering Workshop	1	0	2	2	SEC
9	LNL 1241	Professional Communication	2	1	0	3	
10		AEC 1/ VAC 1				2	
		<b>Total Credits</b>				<b>23</b>	

2 <sup>nd</sup> Semester							
S. No	Course Code	Course Title	L	T	P	Credit	Category
1	MTL BS102	Engineering Mathematics-II	3	1	0	4	BSC
2	PHL BS102	Engineering Physics- II	3	0	0	3	BSC
3	PHP BS102	Engineering Physics -II Lab	0	0	2	1	BSC
4	EEL 1006	Fundamental of Electrical Engineering	3	0	0	3	ESC
5	EEP 1006	Fundamental of Electrical Engineering Lab	0	0	2	1	ESC
6	CSL DC102	Introduction to 'Python' Programming	3	0	0	3	ESC
7	CSP DC102	Introduction to 'Python' Programming Lab	0	0	2	1	ESC
8	MEP SE102	Engineering Graphics with CAD	1	0	3	2.5	SEC
9	----	Introduction to Environmental Science	3	0	0	3	AEC
		<b>Total Credits</b>				<b>21.5</b>	

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		Science							11.03
		Total Credits					21.5		

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Second Year						
3 <sup>rd</sup> Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 201	Data Structure	3	0	0	3
2	CSP DC 201	Data Structure Lab	0	0	2	1
3	MTL DC 201	Discrete Mathematics	3	1	0	4
4	MTL DC 203	Integral Transforms and Complex Analysis	3	1	0	4
5	MTL DC 205	Probability & Statistics	3	1	0	4
6	MTL DC 207	Algebra	3	1	0	4
7		Fundamentals of Managements	3	0	0	3
		<b>Total Credits</b>				<b>23</b>
4 <sup>th</sup> Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 202	Algorithm Design & Analysis	3	1	0	4
2	MTL DC 202	Real Analysis	3	1	0	4
3	CSL DC 204	Theory of Computation	3	1	0	4
4	CSL DC 206	Computer Organization & Architecture	3	1	0	4
5	MTL DC 204	Linear Algebra and Applications	3	1	0	4
6		Engineering Economics	3	0	0	3
		<b>Total Credits</b>				<b>23</b>

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Third Year						
5 <sup>th</sup> Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 301	Operating System	3	0	0	3
2	CSP DC 301	Operating System Lab	0	0	2	1
3	MTL DC 301	Number Theory	3	1	0	4
4		Departmental Elective Course - 1	3	0/1	2/0	4
5	MTL DC303	Stochastic Processes	3	1	0	4
6		Open Elective Course	3	0	0	3
7		Technical Communication	2	0	0	2
		Total Credits				21
6 <sup>th</sup> Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 302	Data Base Management System	3	0	0	3
2	CSP DC 302	Data Base Management System Lab	0	0	2	1
3	MTL DC 302	Scientific Computing	3	0	0	3
4	MTP DC 302	Scientific Computing Lab	0	0	2	1
5	CSL DC 304	Machine Learning	3	0	0	3
	CSP DC 304	Machine Learning Lab	0	0	2	1
6		Departmental Elective Course -2	3	0/1	2/0	4
7		Departmental Elective Course -3	3	0/1	2/0	4
8		Course from Humanities	2	0	0	2
		Total Credits				22

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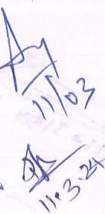





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