

Appendix - D - 2 - 3
B. Tech Programme
in SUIIT

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21/4/22

**Agenda items for the next meeting of Academic Council of Sambalpur University to be held on
dt.27.05.2022.**

Item-1

Consider to approve to offer the following B. Tech programs in SUIIT from the academic year 2022-23.

- a) B. Tech CSE with specialization on AI&ML for intake of 30 students.
- b) B. Tech CSE with specialization on Cyber Security for intake of 30 students.
- c) B. Tech CSE with specialization on Data Science for intake of 30 students.
- d) B. Tech ECE with specialization on Internet-of-Things for intake of 30 students.

Note:-

In this context, it is stated that the Governing Body of SUIIT in its meeting held on dt.23.02.2022 vide Resolution No. 9 has decided to offer the above B. Tech programs in SUIIT from the academic year 2022-23. (Copy of the proceedings of the meeting of the Governing Body dt.23.02.2022 and the approved teaching schemes of the above B. Tech programs are enclosed herewith)

Item-2

Consider to approve for reduction of intake capacity of the existing B. Tech ECE & B. Tech EEE in SUIIT from 60 to 30 seats from the academic year 2022-23.

Further, consider to close the M. Tech in Embedded Systems and M. Tech in Communication Systems in SUIIT from the academic year 2022-23.

Note:-

In this context, it is stated that keeping the view the poor enrollment of students, the Governing Body of SUIIT in its meeting held on dt.23.02.2022 vide Resolution No. 9 has decided for reduction of intake capacity of B. Tech ECE & B. Tech EEE from 60 to 30 seats and closer of the M. Tech in Embedded Systems and M. Tech in Communication Systems in SUIIT respectively from the academic year 2022-23. (Copy of the proceedings of the meeting of the Governing Body dt.23.02.2022 is enclosed herewith)

Approved

M. Deh
27/04/22
Vice-Chancellor

25.04.22
Director, SUIIT
DIRECTOR
Sambalpur University Institute
of Information Technology
Jyoti Vihar, Burla

PROCEEDINGS OF THE MEETING OF THE GOVERNING BODY (GB), SUIIT

HELD ON 23.02.2022

Members Present

[1] Prof. Sanjiv Mittal, Vice-Chancellor, Sambalpur University	- Chairman
[2] Prof. Banshidhar Majhi, Vice-Chancellor, VSSUT, Burla	- Member
[3] Prof. Sanjat Kumar Sahu, Chairman, PG Council, Sambalpur University	- Member
[4] Dr. Nruparaj Sahu, Registrar, Sambalpur University	- Member
[5] Dr. Hemant Kumar Rath, TCS Research and Innovation, BBSR	- Member (Online)
[6] Shri Tapan Kumar Satapathy, Additional Secretary, Skill Development & Technical Education, Govt. of Odisha	- Member (Online)
[7] Shri. Ashok Kumar Behera, Comptroller of Finance, Sambalpur University	- Guest Member
[8] Prof. Prashant Ray, Dean P&C, SUIIT	- Guest Member
[9] Dr. Nalini Kanta Barpanda, Dean A/A, SUIIT	- Guest Member
[10] Dr. Rasmikanta Pati, Dean S/W, SUIIT	- Member
[11] Ms. Rashmirekha Patra, Asst. Professor, SUIIT	- Member
[12] Prof. B.K. Mohanty, Director, SUIIT	- Member Secretary

Business Transacted:

1. At the outset Prof. Sanjiv Mittal, Vice- Chancellor of Sambalpur University as well as the Chairman of the Governing Body, SUIIT welcome all the members to the Governing Body of SUIIT.
2. The Chairman of the GB, SUIIT apprised to the members of the GB, SUIIT about the appointment of Prof. B.K. Mohanty as the full-time Director, SUIIT and asked the director to proceed with the next agenda items.
3. The status report of the Institute was presented by the Director, SUIIT.
Arising out of discussion on the status report, it is resolved that industry interaction to be increased to improve the campus placement. Industry professional from nearby industry to be invited as guest faculty wherever possible. Interaction sessions with industry experts to be conducted more frequently. Faculty will guide the final year students through small groups for pre-placement preparation.

Teaching learning process to be aligned appropriately to improve student pass percentage in all streams.

4. The minutes of the GB meeting held on 23.10.2019 was read and confirmed.
The action taken reports presented by the Director was noted and approved.
Arising out of discussion on the action taken reports in order to obtain the approval of the Sambalpur Development Authority (SDA) in connection with the buildings constructed in SUIIT campus. It is resolved that, Director, SUIIT to pursue the matter through the Registrar, Sambalpur University to get the SDA approval of buildings which is required to obtain the Fire Safety Certificate for the AICTE approval process.
5. Ratification of the decision taken by Academic Committee
The decisions taken by the Academic Committee, SUIIT in its meeting held on 25.11.2021 is ratified.
6. To discuss and considered on the revised budget 2021-22 and budget estimate of 2022-23 to place before the finance committee of Sambalpur University.
RESOLVED that this is approved.
7. To ratify appointment of 16 number of contractual faculty of SUIIT by the Director.
RESOLVED that this is ratified.
8. To consider appointment of vacant full-time faculty of SUIIT.

Note:-

Four full-time faculty members (CSE-3, BS&H-1) left the SUIIT during academic years 2020-21 and 2021-22. According to the last GB meeting resolution, one Professor of CSE department to be appointed at the earliest possible. However, the appointment process was not initiated due to Covid-19 pandemic. As CSE department going to offer B. Tech CSE programs with minor specialization on AI&ML and Cyber Security, the following post may be considered to fill up for the department of Computer Science and Engineering in SUIIT.

- i. Associate Professor – 01 post against the vacant post of Professor
- ii. Assistant Professor – 02

Or

Assistant Professor – 03 (against the above posts)

RESOLVED that three Assistant Professor be appointed in Computer Science Engineering as per the department requirement. These newly recruited faculty members be given additional responsibility of system manager of computers in addition to their normal academic work. A technical assistant will assist the faculty.

9. To consider and recommend the new programs effective from academic session 22-23.

Note:-

In this context the Proceeding of the meeting of the Board of Studies of Computer Science (CSE) and Engineering held on 13.02.2022 and Proceeding of the meeting of the Board of Studies of Basic Science & Humanities (B&H) held on have suggested to launch the following B. Tech Programme in the coming Academic Year 2022-23.

B. Tech CSE with minor specialization on AI&ML (30)

B. Tech CSE with minor specialization on Cyber Security (30)

B. Tech on Mathematics Computation (30)

M. Sc. Physics with specialization on Photonics (15)

RESOLVED that the following B. Tech programs to be offered from academic year 2022-23.

- B. Tech CSE with specialization on AI&ML for intake of 30 students.
- B. Tech CSE with specialization on Cyber Security for intake of 30 students.
- B. Tech CSE with specialization on Data Science for intake of 30 students.
- B. Tech ECE with specialization on Internet-of-Things for intake of 30 students.

Further, it is resolved that the intake of existing B. Tech ECE and B. Tech EEE to be reduced to 30 from 60 due to poor admission in successive years.

M. Tech in Embedded Systems and M. Tech in Communication Systems to be closed for the time being. These programs to be offered in future when the demand arises.

10. To discuss the revision of DA of SUIIT full-time faculty from the existing 12% which was revised on October 2019.

RESOLVED that the Dearness Allowance payable to full-time faculty members of SUIIT will be enhanced from the existing rate of 12% to 17% on their basic pay w.e.f. the month of March, 2022.

11. To consider the remuneration of Group-C/Group-D employees of SUIIT who are on receipt of (Pay+ Grade Pay) as monthly remuneration into a fixed remuneration similar to other staff of SUIIT.

RESOLVED that, the matter is deferred for the time being.

12. To consider and recommend for amendment to the following provisions in "**Autonomy Regulations & Guidelines of SUIIT-2016**"

- a. Provision under Rule- 4(a) clause (iii) with respect to inclusion of two Professors from reputed Govt. institution as external members to the department BOS.

Note:-

According to 4(a)(iii) of regulation, two experts outside SUIIT to be nominated by SUIIT Academic Committee not below the rank of Professor preferably from Government institution of higher repute. Finding two Professors from nearby Government institutions is too difficult as there are few or no Professors available in many nearby institutions. Professors from far places reluctant to travel to this place by train. Keeping in view of the above, it is suggested to replace the existing provision with the new provision as given below:

RESOLVED and recommended that two experts outside SUIIT to be nominated by SUIIT Academic Committee not below the rank of Professor/**Associate Professor (having at least six years of experience)** preferably from Government institutions of higher repute.

- b. Provision under Rule- 9(a) with respect to appointment of Dean (S/W)

Note:-

Under this provision Dean S/W of SUIIT will be appointed among the professor of Science and Engineering of SUIIT/Sambalpur University, "In case of non-availability of suitable Professors, a Reader/Associate Professor may be appointed as of Dean (S/W)"

A major responsibility of Dean (S/W) is for supervision, management and control of all hostels. Also, the Dean (S/W) oversee all the outside class room student activities. Therefore, the Dean (S/W) must be a member of full-time faculty of SUIIT who can able to spend more time with the students. For this, the following amendment is proposed:

In view of the above, it is proposed that the exiting provision of the above regulation may be amended and "In case of non-availability of suitable Professors, a Reader/Associate

Professor/**senior most full-time faculty member among Asst. Professors** may be appointed as of Dean (S/W)”

RESOLVED and recommended that Dean S/W of SUIIT will be appointed among the professor of Science and Engineering of SUIIT/Sambalpur University. In case of non-availability of suitable Professors, a Reader/ Associate Professor/ **senior most full-time faculty member among Asst. Professors** may be appointed as of Dean (S/W)

13. Consider the request to Sambalpur University to initiate work for infrastructure development of SUIIT.

RESOLVED that this is approved the Chairman GB accepted the request and informed the house that Sambalpur University has initiated steps to arrange funds for infrastructure development of SUIIT. Already a proposal forwarded to the MCL for construction of a 300 bedded hostel for SUIIT and to setup a 40 seated computer laboratory for Computer Science Engineering department.

14. Ratification of examination rules approved by academic committee.

Note:-

Item Number 9, 10, 11 and 13 of the Annexure-2 cited above be ratified.

RESOLVED that the modification of examination rules approved by the Academic Committee SUIIT held on 25.11.2021. However, the examination rules should be similar to that of VSSUT, Burla.

15. Ratification of Hostel rules passed by academic committee.

Note:-

The students' rules for hall of residence of SUIIT prescribed by the Academic Committee of the SUIIT in its meeting held on 25.11.2021.

RESOLVED that this is approved. However it must be passed by student representative of hostels.

16. To authorize the Director to sign MoU with academic institution/Corporate sector on behalf of SUIIT.

RESOLVED that this is approved. However the proposal must be vetted by the authorized representative of MoU Committee of Sambalpur University.

17. To consider year mark STQ-1 quarter as Director SUIIT residence and necessary maintenance work to be made by SUIIT.

RESOLVED that this is approved.

18. To consider to engage a hardware engineer for maintenance of IT resources of SUIIT.

RESOLVED that, engagement of a hardware engineer is not required. The required hardware maintenance work of the computers to be done through AMC. The management of computers to be done by existing technical staffs of Computer Labs. Management of Servers will be done by a faculty in-charge having the knowledge of Computer Networks. Sixty number of computers each will be given to 3 Technical Assistants already there.

19. Consider to enhance the hostel fee of the boarders towards the energy charges from existing Rs. 4000/- to Rs. 6000/-

Note:-

In this context it is stated that energy fees from the boarders has not increase since 2016. But in the meantime TPWODL (WESCO Utility) has increased the energy charges number of times.

RESOLVED that, the hostel fee of the boarders towards the energy charges to be revised from existing Rs. 4000/- to Rs. 5000/ from the Academic Year 2022-23 and further 10% hike will be in subsequent years depending upon further revision of energy charges by TPWODL.

20. Any other matters with the permission of the Chairman

- To consider and recommend to introduce a group medical insurance to all SUIIT staff and faculty and their families for 2 Lakhs medical coverage.

RESOLVED that staffs and faculty members of SUIIT can have the group medical insurance if the expanses towards the premium charges is born by individual member. Alternately, free health insurance schemes of state government may be explored for this purpose. Apart from that SUIIT should have a suitable insurance scheme for the students.

- Resource requirement for all the programs offered by the SUIIT must be audited properly as per the latest AICTE guideline as it is mandatory for every technical institution.

RESOLVED that immediate steps be taken by the Director to verify the resource and infrastructure requirement as per the latest AICTE guideline for the programs offered by SUIIT and expedite the process for AICTE approval and affiliation.

At the end the Vice-Chancellor, Chairman GB, SUIIT thanked all the members for their participation in the discussion.

Sd/-

Prof. Banshidhar Majhi,
Vice-Chancellor, VSSUT, Burla

Sd/-

Prof. Sanjat Kumar Sahu,
Chairman, PG Council, SU

Sd/-

Dr. Nrupraj Sahu,
Registrar, SU

Sd/-

Dr. Hemant Kumar Rath, TCS
Research and Innovation, BBSR

Sd/-

Shri Tapan Kumar Satapathy,
Additional Secretary

Sd/-

Shri. Ashok Kumar Behera,
Comptroller of Finance, SU

Sd/-

Prof. Prashant Ray,
Dean P&C, SUIIT

Sd/-

Dr. Nalini Kanta Barpanda,
Dean A/A, SUIIT

Sd/-

Dr. Rasmikanta Pati,
Dean S/W, SUIIT

Sd/-

Ms. Rashmirekha Patra,
Asst. Professor, SUIIT

Sd/-

Prof. B.K. Mohanty,
Director, SUIIT

Approved

Sd/-

Vice-Chancellor (Chairman, GB, SUIIT)

Sambalpur University

Proposed Course Structure
Department
Computer Science and Engineering &
Application (CSE&A), SUIIT



(Effective from Academic Session : -----)

Date of Draft prepared by Teacher Council :
Revised and Approved By BoS :
Date of Approval by Academic Committee :

Programmes:

B.Tech in Computer Science and Engineering with Data Science (B.Tech CSE with DS)

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

	Semester – II							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 121	Mathematics-II	FC(BS)	4	0	0	4	
2	PHC 122	Physics-II	FC(BS)	3	0	0	4	
3	ECC 123	Basic Electronics	FC(BE)	3	0	1	3	
4	CSC 124	Data Structures using C	FC(CS)	3	0	1	3	
5	HSC125	Environmental Studies	FC(HS)	3	0	0	0	
6	ECL 126	Basic Electronics Lab.	FC(BE)	0	3	0	2	
7	PHL 117	Physics Lab.	FC(BE)	0	3	0	2	
8	CSL 128	Data Structure using C Lab.	FC(CS)	0	3	0	2	
	Total Credit for all:						20	

	Semester – III							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 231	Mathematics-III	FC(BS)	4	0	0	4	
2	ECC 232	Data Communication	PC(CE)	4	0	0	3	
3	CSC 233	Object Oriented Programming	FC(CS)	4	0	0	3	
4	ECC 234	Digital Circuits and Systems	FC(BE)	4	0	0	3	
5	CSC 235	Computer Organization and Architecture	PC(CE)	4	0	0	4	
6	CSL 236	Object Oriented Programming Lab.	FC(CS)	0	3	0	2	
7	ECL 237	Digital Circuits Lab.	FC(BE)	0	3	0	2	
	Total Credit for all:						21	

Semester – IV								
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 241	Mathematics-IV	FC(BS)	4	0	0	4	
2	ECC 242	Microprocessors & Microcontrollers	FC(BE)	3	0	0	3	
3	HSC 243	Organizational Behavior	OE(OE)	3	0	1	3	
4	CSC 244	Analysis and Design of Algorithms	PC(CE)	3	0	0	3	
5	CSC 245	Operating Systems	PC(CE)	3	0	0	3	
6	ECL 246	Analysis and Design of Algorithms Lab.	FC(BE)	0	3	0	2	
7	CSL 247	Microprocessors&Microcontrollers Lab.	PC(BE)	0	3	0	2	
8	CSL 248	Programming with Python Lab.	PC(CE)	0	3	0	2	
9	CSS 249	Mathematical foundation for Data Science	PC(DS)	3	0	0	3	
Total Credit for B.Tech CSE with DS:							25	

	Semester – V							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 351	Discrete Mathematics	FC (BS)	3	0	1	3	
2	CSC 352	Theory of Computation	PC(CE)	3	0	0	3	
3	CSC 353	Database Management Systems	PC(CE)	3	0	1	3	
4	HSC 354	Engineering Economics	OE (OE)	3	0	1	3	
5	CSL 355	Database Management System Lab.	PC(CE)	0	3	0	2	
6	CSL 356	Web Technology Lab	PC(CE)	0	3	0	2	
7	CSD 358	Statistics and Exploratory Data Aanalysis	PC(DS)	3	0	0	3	
8	CDL 359	Data Science Lab -I	PC(DS)	0	3	0	2	
MOOC Electives								
9	XXX XX	MOOCs-I (Elective)	MOOC	-	-	-	3	--
	Total Credit for B.Tech CSE with DS:						24	

	Semester – VI							
S.No.	Corse Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 361	Computer Networks	PC(CE)	4	0	0	3	
2	CSC 362	Software Engineering	PC(CE)	3	0	1	3	
3	CSC 363	Artificial Intelligence	PE (CE)	3	0	0	3	
4	CSL 364	Software Engineering Lab.	PC(CE)	0	3	0	2	
5	CSD 366	Machine learning for Data Science	PC(DS)	4	0	0	3	
6	CSD 367	Big Data Analytics	PC(DS)	3	0	0	3	
7	CDL 368	Data Science Lab -II	PC(DS)	0	3	0	2	
MOOC Electives								
8	XXX XX	MOOC-II (Elective)	MOOC	-	-	-	3	---
	* Total Credit CSE with DS:						22	

	Semester – VII
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CREDIT STRUCTURE

SEMESTER WISE CREDIT DISTRIBUTION (CSE with DS)									
Year	Credit (42)		Credit (46)		Credit (46)		Credit (40)		
Semester	I	II	III	IV	V	VI	VII	VIII	TOTAL
Total Credit	22	20	21	25	24	22	21	19	174

CATEGORY-WISE CREDIT DISTRIBUTION

Category	With Data Science	
Foundation Core	34	Theory: 32
		Lab: 02
Interdisciplinary Core	31	Theory: 21 Lab: 10
Interdisciplinary Elective	6	Theory: 9
		Lab: 0
Departmental Core	66	Theory: 40
		Lab: 10
		Proj/Sem: 16
Specialization	22	Theory: 18
		Lab: 04
Professional Elective	9	Theory: 09
		Lab: 00
MOOC Elective (Professional Elective)	6	Theory: 06
		Lab: 00
Total Credit:	174	

MASSIVE OPEN ONLINE COURSES (MOOCs)

- A student has to complete the MOOCs courses/elective papers as recommended by the department.
- As the elective papers are of three (03) credits, therefore the MOOCs courses will also have the same three credits.
- Thus, two MOOCs courses/elective papers each of three (03) credits will be included in the fifth and sixth semester of B-Tech program as per the resolution of academic council held on 25-11-2021.
- Existing evaluation and grading scheme of SUIIT will be applicable for the MOOCs courses/elective papers.
- There will be two options. (i) The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offered in Odd/Even Semesters by SWAYAM. (ii) Being an elective paper, the concerned department can also offer the MOOCs course as a subject in the respective semester.
- For students enrolled in SWAYAM, it usually charges minimal fee per course and awards a certificate of completion. Students need to register for the course on payment of their own and submit the certificate to the institute.
- For registration to MOOCs, the students shall abide by the norms and policies proposed by SWAYAM.
- For technical seminar, students shall choose a topic from the latest technological developments / research in Electrical and Electronics Engineering or in allied fields in consultation with the faculty. They shall submit synopsis for the presentation in an approved format on the day of presentation.
- Project work and Comprehensive Viva-Voce shall be as per Academic & Examination Guidelines of SUIIT.

MOOCs-I Electives (Credit : 3)		
Code	Course Title	Remark
MOE 351	Cloud Computing	
MOE 352	Cloud Computing and Distributed System	
MOE 353	Android Mobile Applications Development	
MOE 354	Data Analytics with Python	
MOE 355	Blockchain and Its Applications	
MOE 356	Data Analytics with R	
MOE 357	*MOOC Elective given by the Department Teacher Council	
(Alternative to MOOC-I : To be offered as elective by the department)		
MOA 358	Computer Graphics (LTPC : 3-0-0-3)	

MOOCs-II Electives (Credit : 3)		
Code	Course Title	Remark
MOE 361	Data Science for Engineers	
MOE 362	Problem solving aspects and Python programming	
MOE 363	IoT / Introduction to 4.0 and Industrial IOT	
MOE 364	Ethical Hacking	
MOE 365	Deep Learning	
MOE 366	Computer Vision and Image Processing	
MOE 367	Hardware Security	
MOE 368	*MOOC Elective given by the Department Teacher Council	
(Alternative to MOOC-II : To be offered as elective by the department)		
MOA 359	Advanced Computer Architecture (LTPC : 3-0-0-3)	

*In case mentioned courses are not available in the portal and for any other issues, the teacher council CSE&A, SUIIT may propose one equivalent credit MOOC course that is available in the portal.

<p>Electives from Industry (Credit : 3, Contact Hour : 40 Class Hours)</p> <p>Course Name: To be decided jointly by the expert and the teacher council (Code: INE E01)</p> <p>Procedure to Initiate: The head of the department will contact an expert from allied Industry by the recommendation of Teacher Council, CSE&A, SUIIT with the approval of Director, SUIIT. The lecture plans will be given by the expert. One teacher from the department (preferably B.Tech Programme Coordinator) will be in touch with the expert, to assist him in various works like evaluation, compilation, providing logistics ...etc.</p> <p>Evaluation Plan: The Evaluation plan may slightly change, but overall evaluation plan will carry 100 marks (Internal : 40 and Final : 60). Types of evaluations:</p> <ul style="list-style-type: none"> • Internal • Laboratory Work • Assignments • End term (compulsory carry 60 marks) <p>Mode of Lecture Session: Off line or Online</p> <p>Types of Lectures Sessions Theory Session/ Hands on sessions / Laboratory Sessions etc (As per lecture Plan)</p>

INTERDISCIPLINARY ELECTIVES

Interdisciplinary Elective-I

Code	Course Title	L	P	T	Credits	Remark
OPE E01	Soft Computing	3	0	0	3	
OPE E02	Computer Oriented Numerical Methods	3	0	0	3	
OPE E03	Digital Signal Processing	3	0	0	3	
OPE E04	Middleware Technologies	3	0	0	3	
OPE E05	Mobile Computing	3	0	0	3	
OPE E06	Embedded Systems	3	0	0	3	

Interdisciplinary Elective-II

Code	Course Title	L	P	T	Credits	Remark
OPE E08	Entrepreneurship Management	3	0	0	3	
OPE E09	Personal Development	3	0	0	3	
OPE E10	Pattern Recognition	3	0	0	3	
OPE E11	Digital Image Processing	3	0	0	3	
OPE E12	Simulation and Modeling	3	0	0	3	
OPE E13	Management Information Systems	3	0	0	3	
OPE E14	Introduction to Bioinformatics	3	0	0	3	

*Interdisciplinary Elective-III

Code	Course Title	L	P	T	Credits	Remark
OPE E15	Software Project Management	3	0	0	3	
OPE E16	Internet of Things	3	0	0	3	
OPE E17	Pattern Recognition	3	0	0	3	
OPE E18	E-Commerce	3	0	0	3	
OPE E19	Remote Sensing and Geographic Information Systems	3	0	0	3	
OPE E20	Ethical Hacking	3	0	0	3	

*Only for B.Tech CSE (with no specialization) and will be offered against Electives from Industry.

PROFESSIONAL ELECTIVES

PROFESSIONAL ELECTIVE-I

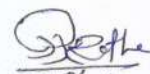
Code	Course Title	L	P	T	Credits	Remark
CSE E01	Data Warehousing and Data Mining	3	0	0	3	
CSE E02	Advanced Operating Systems	3	0	0	3	
CSE E03	Advanced Data Structures	3	0	0	3	
CSE E04	Human Computer Interaction	3	0	0	3	
CSE E05	Parallel Computing	3	0	0	3	
CSE E06	Wireless Communications	3	0	0	3	
CSE E07	Information Theory and Coding	3	0	0	3	
CSE E08	Web Technology	3	0	0	3	

PROFESSIONAL ELECTIVE-II

Code	Course Title	L	P	T	Credits	Remark
CSE E09	Cloud Computing	3	0	0	3	
CSE E10	Cryptography and Network Security	3	0	0	3	
CSE E11	Distributed Systems	3	0	0	3	
CSE E12	Software Design and Validations	3	0	0	3	
CSE E13	High Performance Computing	3	0	0	3	
CSE E14	Grid Computing	3	0	0	3	
CSE E15	Semantic Web	3	0	0	3	
CSE E16	Advanced Software Engineering	3	0	0	3	
CSE E17	Storage Area Networks	3	0	0	3	

PROFESSIONAL ELECTIVE-III

Code	Course Title	L	P	T	Credits	Remark
CSE E18	Wireless Sensor Networks	3	0	0	3	
CSE E19	Ethical Hacking	3	0	0	3	
CSE E20	Distributed Database Systems	3	0	0	3	
CSE E21	Game Programming	3	0	0	3	
CSE E22	Big Data Analytics	3	0	0	3	
CSE E23	Object Oriented Analysis and Design	3	0	0	3	
CSE E24	Advanced Database Systems	3	0	0	3	
CSE E25	Real Time Systems	3	0	0	3	
CSE E26	Natural Language Processing	3	0	0	3	


 28/4/22

BoS Approved Course Structure
Department
Computer Science and Engineering &
Application (CSE&A), SUIIT



(Effective from Academic Session 2022-23)

Date of Draft prepared by Teacher Council : 04/02/2022

Revised and Approved By BoS, SUIIT : 13/02/2022

Date of Approval by Academic Committee : ----

Programmes:

B.Tech. in Computer Science and Engineering with Artificial
Intelligence & Machine Learning (B.Tech CSE with AI&ML)

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

1

Semester – I								
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 111	Mathematics-I	FC(BS)	4	0	0	4	
2	PHC 112	Physics-I	FC(BS)	3	0	0	3	
3	CSC 113	Programming in C	FC(CS)	3	0	1	3	
4	EEC 114	Basic Electrical Engineering	FC(BE)	3	0	1	3	
5	HSC 115	Communicative English	FC(HS)	3	0	0	3	
6	EEL 116	Basic Electrical Lab.	FC(BE)	0	3	0	2	
7	CSL 117	Programming in C Lab.	FC(CS)	0	3	0	2	
8	PCL 118	Professional Communication Lab	FC(BS)	0	3	0	2	
Total Credit for all:							22	

	Semester – II							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 121	Mathematics-II	FC(BS)	4	0	0	4	
2	PHC 122	Physics-II	FC(BS)	3	0	0	4	
3	ECC 123	Basic Electronics	FC(BE)	3	0	1	3	
4	CSC 124	Data Structures using C	FC(CS)	3	0	1	3	
5	HSC125	Environmental Studies	FC(HS)	3	0	0	0	
6	ECL 126	Basic Electronics Lab.	FC(BE)	0	3	0	2	
7	PHL 117	Physics Lab.	FC(BE)	0	3	0	2	
8	CSL 128	Data Structure using C Lab.	FC(CS)	0	3	0	2	
	Total Credit for all:						20	

* Environmental Studies : Core non-credit course

Semester – III								
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 231	Mathematics-III	FC(BS)	4	0	0	4	
2	ECC 232	Data Communication	PC(CE)	4	0	0	3	
3	CSC 233	Object Oriented Programming	FC(CS)	4	0	0	3	
4	ECC 234	Digital Circuits and Systems	FC(BE)	4	0	0	3	
5	CSC 235	Computer Organization and Architecture	PC(CE)	4	0	0	4	
6	CSL 236	Object Oriented Programming Lab.	FC(CS)	0	3	0	2	
7	ECL 237	Digital Circuits Lab.	FC(BE)	0	3	0	2	
*	Total Credit for all:						21	

Semester – IV								
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 241	Mathematics-IV	FC(BS)	4	0	0	4	
2	ECC 242	Microprocessors & Microcontrollers	FC(BE)	3	0	0	3	
3	HSC 243	Organizational Behavior	OE(OE)	3	0	1	3	
4	CSC 244	Analysis and Design of Algorithms	PC(CE)	3	0	0	3	
5	CSC 245	Operating Systems	PC(CE)	3	0	0	3	
6	ECL 246	Analysis and Design of Algorithms Lab.	FC(BE)	0	3	0	2	
7	CSL 247	Microprocessors&Microcontrollers Lab.	PC(BE)	0	3	0	2	
8	CSL 248	Programming with Python Lab.	PC(CE)	0	3	0	2	
9	CSA 249	Mathematical foundation for AI & ML	PC(AI)	3	0	0	3	
	Total Credit:						25	

Semester – V								
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 351	Discrete Mathematics	FC (BS)	3	0	1	3	
2	CSC 352	Theory of Computation	PC(CE)	3	0	0	3	
3	CSC 353	Database Management Systems	PC(CE)	3	0	1	3	
4	HSC 354	Engineering Economics	OE (OE)	3	0	1	3	
5	CSL 355	Database Management System Lab.	PC(CE)	0	3	0	2	
6	CSL 356	Web Technology Lab	PC(CE)	0	3	0	2	
7	CSA 358	Introduction to Machine Learning	PC(AI)	3	0	0	3	
8	CAL 359	Artificial Intelligence & Machine Learning Lab - I	PC(AI)	0	3	0	2	
MOOC Electives								
7	XXX XX	MOOCs-I (Elective)	MOOC	-	-	-	3	--
	Total Credit CSE with AI&ML:						24	

Semester – VI								
S.No.	Corse Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 361	Computer Networks	PC(CE)	4	0	0	3	
2	CSC 362	Software Engineering	PC(CE)	3	0	1	3	
3	CSC 363	Artificial Intelligence	PE (CE)	3	0	0	3	
4	CSL 364	Software Engineering Lab.	PC(CE)	0	3	0	2	
5	CSA 366	Advanced Machine Learning	PC(AI)	3	0	0	3	
6	CSA 367	Natural Language Processing	PC(AI)	3	0	0	3	
7	CAL 368	Artificial Intelligence & Machine Learning Lab - II	PC(AI)	0	3	0	2	
MOOC Electives								
8	XXX XX	MOOC-II (Elective)	MOOC	-	-	-	3	
	Total Credit CSE with AI&ML:						22	

	Semester – VII
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