Compiled AGENDA FOR THE MEETING OF THE ACADEMIC COUNCIL DATED 24.04.2018

Date: 24.04.2018

Time: 09.00 AM

Venue: Seminar Hall, P.G. Department of Physics, Sambalpur University

(A) Ratification of the action of the Vice Chancellor taken in exercise of his powers under Sub- Section 15 of Section 6 of the Act.

1. **Prof. B. Satapathy** (Chairman, PG Council) to move on behalf of the Vice Chancellor:

That the Academic Council do consider and ratify the action taken by the Vice Chancellor in exercise of his powers vested under sub section (15) of section 6 of the Odisha Universities Act-,1989 in approving the amendment of the regulations for BHMS course to be effective from 2015-2016 from the date of which the regulation was implemented.

(Communicated to all concerned vide letter No.4626/Acd-I Dated 30.06.20170)

2. .**Prof. A.K.Das** (H.O.D., P.G. Dept. of Odia) to move on behalf of the Vice Chancellor:

That the Academic Council do consider and ratify the action taken by the Vice Chancellor in exercise of his powers vested under sub section (15) of section 6 of the Odisha Universities Act, 1989 in approving the regulation for Post Doctoral Degree in Humanities, Management and Social Science (D.Litt), Science and Engineering (D.Sc.) and Law (LLD), on the recommendation of the Regulation Amendment Committee held on 06.11.2017 to be effective from 06.11.2017.

(Communicated to all concerned vide Notification No.8448/Acd-I Dated 10.11.A2017)

3. **Prof. P.K.Behera,** (H.O.D., P.G. Dept. of Chemistry) to move on behalf of the Vice Chancellor:

That the Academic Council do consider and ratify the action taken by the Vice Chancellor in exercise of his powers vested under sub section (15) of section 6 of the Odisha Universities Act, 1989 in approving the amendment of Provision 1:

4 regarding Generic Elective Course of the Regulation for the Bachelor of Arts, Science and Commerce examinations (3 year degree course) under Choice

evaluated by the internal examiners. "in Clause – 9 para 5 of PG. in Ayurveda Regulations both effective from 2016 – 17 and 2017-18.

c. Recommended format for Ph. D. in Ayurveda Certificate. Recommended format is in **Appendix- E-1**

2. *Anthropology :-*

a. Recommended Revised Syllabus for M.A./ M.Sc. in Anthropology as suggested by B.O.S./R.A.C.

(**Appendix-Ei)**

3. *Botany :-*

a. BOS Recommended continuance of UG & P.G Syllabus(BOS has recommended some modifications in Both UG & PG syllabus and has recommended for convening another meeting for finalization of changed. C.O.E. has ordered to wait till A.C. meeting is over)

4. *Business Administration :-*

a. Change in Syllabus for Executive MBA course. Recommended changes as in **Appendix.E-4- E-ii (A)** -

b. Recommended revised Regulation and Syllabus for B.B.A. Course under CBCS . (**Appendix:-E-4- E-ii (B)-1 & 2**

***5. Computer Science*: -**

BOS Recommended continuance of all relevant syllabus

6. *Chemistry :-*

Recommended revised syllabus for UG course. (**Appendix:-Eiii)** Not received

7. *English :-*

Recommended detailed syllabus for two papers in Alternative English to be offered to the Arts Pass students in place of DSC –TH1 and DSC –TH2 .

(**Appendix:-*Eiv)*** Not received

8. *Education :-*

BOS Recommended continuance of all relevant syllabuses

9. *Environmental Science: -*

Recommended revised syllabus for AECC – Environmental Science for UG students. Recommended revised Syllabus in (**Appendix-E-9- Ev)**

COURSES OF STUDIES

M.A./M.SC. IN ANTHROPOLOGY

2018-2020

(UNDER COURSE CREDIT SEMESTER SYSTEM)

P.G. DEPARTMENT OF ANTHROPOLOGY

SAMBALPUR UNIVERSITY

Courses of Studies for the M. A. /M. Sc. Anthropology
For the Academic Session 2018-2020

Course Scheme

The Post-Graduate course of Anthropology is based on the semester system and will have four semesters spread over two years. The course will consist of 20 papers with a total of 80 Credit Hours (hereafter CH). Each semester, consisting of five to six papers shall have a maximum 20 CH. The total teaching hours in a semester shall be 35 hours per week. The credit component includes 28 teaching hours (Theory-16 and Practical-12) and the noncredit component includes 11 hours (Tutorial- 4, Proctorial-4 and Seminar-3) per week.

Specialization Offered:

The course offers two specializations during the third and fourth semesters.

1. AN-BA-Physical/Biological Anthropology
2. AN-SA-Social Anthropology

The student will opt for either of these specializations with three compulsory papers and two elective/special papers in each 3rd and 4th semester.

Evaluation:

- 50 per cent of theory papers shall be evaluated by external examiners.
- All practicals will be evaluated by an external examiner.
- Fieldwork/ Dissertation shall be evaluated internally by the concerned supervising teacher along with other teachers of the Department during the 3rd semester while in 4th Semester it will be evaluated by the external examiner.

The distribution of the total 80 CH over four semesters has been presented below.

FIRST SEMESTER (20 CH)

AN.C. 411 (4 CH) Social/Cultural Anthropology
AN.C. 412 (4 CH) Physical/Biological Anthropology
AN.C. 413 (4 CH) Prehistoric Archeology
AN.C. 414 (4 CH) Research Methodology
AN.C. 415 (2 CH) Practical: Physical Anthropology
AN.C. 416 (2 CH) Practical: Prehistoric Archeology

SECOND SEMESTER (20 CH)

AN.C. 421 (4 CH) Understanding Society and Culture
AN.C. 422 (4 CH) Social Exclusion and Inclusive Policy
AN.C. 423 (4 CH) Tribal Anthropology
AN.C. 424 (4 CH) Visual Anthropology
AN.C. 425 (4 CH) Fundamentals of Human Genetics

THIRD SEMESTER (20 CH)

Specialization Course: A. Social Anthropology (AN-SA)

Compulsory Courses

AN-SA.C. 511 (4 CH) Tribal Studies
AN-SA.C. 512 (4 CH) Theory and Method in Social-Cultural Anthropology
AN-SA.C. 513 (4 CH) Fieldwork

Elective Courses

AN-SA.E. 514 (4 CH) Anthropology of Children and Childhood-I
AN-SA.E. 515 (4 CH) Displacement and Rehabilitation

Specialization Course: B. Physical/Biological Anthropology (AN-BA)
Compulsory Courses
AN-BA.C. 511 (4 CH) Human Genetics
AN-BA.C. 512 (4 CH) Human Biology
AN-BA.C. 513 (4 CH) Fieldwork

Elective Courses
AN-BA.E. 514 (4 CH) Child Development
AN-BA.E. 515 (4 CH) Applied Biological Anthropology- I

FOURTH SEMESTER (20 CH)

Specialization Course: A. Social Anthropology (AN-SA)
Compulsory Courses
AN-SA.C. 521 (4 CH) Anthropological Thought
AN-SA.C. 522 (4 CH) Indian Anthropology
AN-SA.C. 523 (4 CH) Dissertation and Viva Voce

Elective Courses
AN-SA.E. 524 (4 CH) Anthropology of Children and Childhood-II
AN-SA.E. 525 (4 CH) Development Anthropology

Specialization Course: B. Physical/Biological Anthropology (AN-BA)

Compulsory Courses
AN-BA.C. 521 (4 CH) Human Population Genetics
AN-BA.C. 522 (4 CH) Laboratory Based Practical
AN-BA.C. 523 (4 CH) Dissertation and Viva Voce

Elective Courses
AN-BA.E. 524 (4 CH) Growth and Nutrition
AN-BA.E. 525 (4 CH) Applied Biological Anthropology-II

A student opting for Social Anthropology specialization has to select any two of the following elective (E) courses for course number AN-SA.E.514 and AN-SA.E.515 during the third semester and similarly two more elective courses for course number AN-SA.E.524 and AN-SA.E.525 during the fourth semester.

E1. Anthropology of Children and Childhood-I
E2. Anthropology of Children and Childhood-II
E3. Displacement and Rehabilitation
E4. Development Anthropology

A student opting for Biological Anthropology specialization has to select any two of the following elective (E) courses for course number AN-BA.E.514 and AN-BA.E.515 during the

third semester and similarly two more elective courses for course number AN-BA.E.524 and AN-BA.E.525 during the fourth semester.

E1. Child Development
E2. Growth and Nutrition
E3. Applied Biological Anthropology-I
E4. Applied Biological Anthropology-II

URGENT AGENDA FOR THE MEETING OF THE ACADEMIC COUNCIL TO BE HELD ON 03.05.2019

(A) - Ratification of action of the Vice-Chancellor taken in exercise of his power under sub section 15 of Section 6 of the Act.

A-12- **The H.O.D., P.G. Deptt. of Library & Information Science, SU** to move on behalf of Vice Chancellor.

That, the Academic Council do consider and ratify the action taken by the Vice-Chancellor in exercise of his power vested under sub-section (15) of the Section 6 of the Odisha Universities Act- 1989 in approving Library Committee with effect from 11.04.2019. Details of the Library Committee report placed as **Appendix-A-12**

(C)- Business brought forward by the Vice-Chancellor as also business remitted by the Syndicate.

C-10 – The H.O.D. , P.G. Deptt. of Political Science, S.U. to move on behalf of the Vice-Chancellor :

That the Academic Council do consider and approve syllabus for 3rd & 4th Semester P.G. in Psychology Course to be effective from 2018-19 academic session. The detail syllabus as in **Appendix -C-10.** 1

C-11- **The H.O.D. , P.G. Deptt. of English, S.U**. to move on behalf of the Vice-Chancellor: -

That the Academic Council do consider and approve the proceedings of the Regulation Amending Committee held on 16.4.2019. Details of the proceedings and its annexure are placed as **Appendix -C-11**.

C-12- **The H.O.D., P.G. Deptt. of History, SU** to move on behalf of Vice Chancellor: -

That, the Academic Council do consider and to take a decision on Letter No.81/PGH dated 27.4.2019 from The H.O. D. , P.G. Department of History on problems related to Ph. D . guide. The said letter has been placed as **Appendix-C-12**

(E) Business Brought forward by the Boards of Studies.

(1) **The Chairman, P.G. Council, S.U**. to move on behalf of the Board of Studies.

That, the Academic Council do consider and approve the recommendations of various Boards of Studies for academic session 2018-19 in approving changes/revision of syllabi, etc. as stated below:

I- Anthropology : Recommended revised syllabus for M.Phil. in Anthropology to be effective from 2019-20 academic session. Detail syllabus as in **Appendix- E-1-I (M.Phil. Ant.)**

II- Ayurveda: Recommended continuance of the syllabus forwarded by the Principal, G.A.C. Bolangir for M.D. (Ayurveda) Course in the subject "Ayurved Samhita & Siddhanta" Detail syllabus as in **Appendix-E-1-II- (P.G. Ay- SS).**

III- Business Administration:

(a) Recommended change in Paper No. ABM-304 – Food processing and Form Machinery Management of M.B.A. (Agri- Business) Course. The change will be effective from 2018-19 academic session. Detail of revised syllabus for the paper as in Appendix – E-1-III-a-(MBA-Agri.)

(b) Recommended inclusion of the book "Entrepreneurship Development : Business policies and practice by K.K. Patra, Published by Heritage publishing House" as Text Book for Paper No.104 GE-Entrepreneurship Development of B.B.A. Course under C.B.C.S.

(c) Recommended inclusion of the book "An Introduction to E-Commerce by Prof. Satpathy, published by Yugbodh Prakashan , Raipur" for Paper No.305 and 405 for the Paper named (E-Commerce) of M.B.A. Course.

(d) Recommended inclusion of the Book "International Accounting by Prof.A.K.Das Mahapatra, published by Prentice Hall of India Learning Ltd., New Delhi" for Paper No.503 and the Book" "Management Accounting by Prof. A.K.Das Mohapatra and Biswa Mohan Jena, published by Himalayan Publications for Paper No.303 and the book "International Finance by V.A. Avadhani published by Himalaya Publication" for Paper No.503 of M.B.A. Course. The said books recommend as text book.

IV- Commerce : Recommended minor modification in UG-Commerce Pass & Hons. Syllabus effective from 2017-18 academic session. The details of the changes as in **Appendix-E-1-IV (B.Com.)**

V- Computer Science : Recommended syllabus for DSE-4-Big Data Analysis for UG courses in Computer Science Course giving it effect from 2016-17. The detail syllabus as in **Appendix-E-1-V- (Computer Science).**

VI- Economics :

(a) Recommended " Indian Economy-I" as GE-I, Money & Banking as GE-II for B.A. Pass students giving effect from 2016-17 academic session. The detail syllabus will be same as Hons. Course as in letter No. 4374/Acd.I, dated. 21.07.2018.

(b) Recommended DSE Papers for Hons. Students during 5th Semester will be DSE-1 " Economics of Health and Education or Money E-Fin. Market, DSE-2 during 5th Semester will be " Pol.Eco-I" or "Pub.Eco." During 6th Semester DSE-I Paper will be 'Pol.Eco.-II' or 'Env.Eco.' , DSE-II-Fin.Eco'. or 'International Economics'. This is for academic session 2016-17.

During 2018-19 session 5th Semester DSE-I Eco. Of Health and Education or Money Banking, DSE-II Pol.Eco-I or New Institution Eco. For 6th Semester DSE-I Pol.Eco-II or Env.Eco., DSE-2 Fin. Eco. or International Eco.

Course of Studies for the M. Phil Degree (Anthropology)

2019-2020

Under Semester System of Teaching and Examination

P.G. DEPARTMENT OF ANTHROPOLOGY

Sambalpur University, Jyoti Vihar,
Burla-768019

A course of Studies for the M. Phil Degree (Anthropology)
Under Semester System of Teaching and Examination

Course Scheme

The M. Phil. course shall comprise of two semesters of 40 CH (20 CH in each semester). In the first semester, there shall be three theory papers (one general paper (Paper-I) bearing course no. 611 and one elective paper (Paper-II) bearing course no. 612 under the specialization groups, i.e. Social / Physical Anthropology. Course no. 613 (Paper-III) is a research methodology paper to be studied by all the students. Course no.614 & 615 are practical papers each having 4 CH. The second semester shall consist of two papers, i.e. (1) course no. 621: Seminar presentation and (2) course no. 622: Fieldwork, Dissertation and Viva-voce. The distribution of the total 40 credit hours has been presented below. All the theory papers, viz. paper-I, II and III shall be evaluated by the external examiners. Paper IV (614) shall be evaluated by one external examiner in consultation with an internal examiner and Paper V (615) shall be evaluated by the internal examiners. Paper- VI (621) shall be evaluated by internal examiners and Paper VII (622) shall be evaluated by one external and internal examiner.

FIRST SEMESTER (20 CH)

Paper-I: (Course-611) Theories and Methods in Socio-Cultural Anthropology (4 CH)
Paper-II: (Course-612)

(Social Anthropology) Anthropology of Children and Childhood (4 CH)

OR

(Physical Anthropology) Development, Growth and Ageing (4 CH)

Paper-III (Course-613) Research Methodology (4 CH)

Paper-IV: (Course-614) Soft Skill Development and Capacity Building (4 CH)

Paper-V: (Course-615) Review of Research papers published in referred journals (4 CH)

Review Report: 2 CH; Seminar: 2 CH

SECOND SEMESTER (20 CH)

Paper-VI: (Course-621) Seminar Presentation (2 CH)
Seminar presentation on fieldwork findings

Paper-VII: (Course-622) Fieldwork, Dissertation and viva-voice (18 CH)

(Interim 8 CH +Final 10 CH)

Proceedings of the meeting of the members of Board of Studies of Department of Biotechnology and Bioinformatics (BT and BI), Sambalpur University Held on 07/01/2017 AT 10.30AM

Members Present:

1.	Prof. P. K. Naik,	Head, Department of BT and BI (Chairman, BoS)
2.	Dr. A. K. Patel	Assoc. Professor, Department of BT and BI
3.	Mr. B. P. Bag	Asst. Professor, Department of BT and BI
4.	Dr. B. Behera	Asst. Professor, Department of BT and BI
5.	Prof. S. N. Nayak,	Professor, School of Physics, Sambalpur University
6.	Prof. P. K. Behera	Professor, School of Chemistry, Sambalpur University

Business Transacted:

At the outset the Chairman Board of Studies (BoS), Department of BT and BI, Sambalpur University welcomed all the members present during the meeting. The Head Department of BT and BI briefed the course outline of M. Sc. (Biotechnology) and M. Sc. (Bioinformatics). The proceedings of the meeting are follows:

1. To introduce the M. Phil. (Biotechnology) and Ph.D. Course work in the Department of BT and BI as per UGC Guidelines, which will be effective from January 2018.

   Resolution: Resolved that the course structure for M. Phil. (Biotechnology) and Ph,D, course work as mentioned in Annexure-I is approved and will be effective from January 2018.

2. To restructure the syllabus of M. Sc. (Biotechnology) and M. Sc. (Bioinformatics) with optional/ elective papers and uniformity in total credit hours, which will be effective from 2017-2018.

   Resolution: Resolved that the revised syllabus attached in Annexure-II is approved and will be effective form the Academic session 2017-2018.

7/1/2017
Dr. A. K. Patel

07/01/2017
Prof. P. K. Naik

07/01/2017
Mr. B. P. Bag

07.01.2017
Dr. B. Behera

07/1/2017
Prof. S. N. Nayak

7/1/2017
Prof. P. K. Behera

BT & BI

COURSES OF STUDY
M.Sc (Bioinformatics): Session (2017-2019)

BT & BI

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019, ODISHA

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OUTLINE OF COURSE STRUCTURE
M.Sc. BIOINFORMATICS (Session: 2017-19)

SEMESTER-I

Course Code	Course Name	Credits hours	Marks
BI-411	(A) Physical Sciences (B) Foundation Biology	3	50
BI-412	Chemistry of Biomolecules	3	50
BI-413	Genetics	3	50
BI-414	Microbiology	3	50
BI-415	Molecular Biology- I	3	50
BI-416	Concepts in Computing	3	50
BI-417	Practical (Genetics and Microbiology)	2	50
BI-418	Practical (Biochemistry)	2	50

NON CREDIT COURSE: Communication Skills

SEMESTER-II

Course Code	Course Name	Credit hours	Marks
BI-421	Probability and Biostatistics	3	50
BI-422	Bioenergetics and Metabolism	3	50
BI-423	Immunology	3	50
BI-424	Molecular Biology- II	3	50
BI-425	Bioinformatics Resources	3	50
BI-426	Bioinformatics Programming	3	50
BI-427	Practical (Immunology and Molecular Biology)	2	50
BI-428	Practical (Bioinformatics Resources & Programming)	2	50

NON CREDIT COURSE: Personal Development

SEMESTER-III

Course Code	Course Name	Credit hours	Marks
BI-531	Recombinant DNA Technology	3	50
BI-532	Computational Biology	3	50
BI-533	Molecular Modeling and Simulation	3	50
BI-534	Database Management System	3	50
BI-535	Data Warehouse and Data mining	3	50
BI-536	Python and R language programming	3	50
BI-537	Practical (DBMS, Data warehouse and Data mining)	2	50
BI-538	Practical (Python and R language programming)	2	50

SEMESTER-IV

Course Code	Course Name	Credit hours	Marks
BI-541	Genomics, Proteomics and Metabolomics	3	50
BI-542	Computer Aided Drug Design	3	50
BI-543	Seminar	3	50
BI-544	Project work and Viva voce	(10+3)	200
BI-545	Practical (Computer Aided Drug Design)	2	50
	Total Course Credit	**90 CH**	**1600**

COURSES OF STUDY
M.Sc (Biotechnology): Session (2017-2019)

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019, ODISHA

OUTLINE OF COURSE STRUCTURE
M.Sc. BIOTECHNOLOGY (Session: 2017-19)

SEMESTER-I

Course Code	Course Name	Credits hours	Marks
BT-411	(A) Physical Sciences (B) Fundamental Biology	3	50
BT-412	Chemistry of Biomolecules	3	50
BT-413	Genetics	3	50
BT-414	Microbiology	3	50
BT-415	Molecular Biology- I	3	50
BT-416	Instrumentation and Techniques	3	50
BT-417	Practical (Genetics and Microbiology)	2	50
BT-418	Practical (Biochemistry)	2	50

NON CREDIT COURSE: Communication Skills

SEMESTER-II

Course Code	Course Name	Credit hours	Marks
BT-421	Probability and Biostatistics	3	50
BT-422	Bioenergetics and Metabolism	3	50
BT-423	Immunology	3	50
BT-424	Molecular Biology- II	3	50
BT-425	Cell and Developmental Biology	3	50
BT-426	Industrial Biotechnology	3	50
BT-427	Practical (Immunology & Molecular Biology)	2	50
BT-428	Practical (Cell Biology & Industrial Biotechnology)	2	50

NON CREDIT COURSE: Personal Development

SEMESTER-III

Course Code	Course Name	Credit hours	Marks
BT-531	Recombinant DNA Technology	3	50
BT-532	Bioinformatics	3	50
BT-533	Bioprocess Engineering & Technology	3	50
BT-534	Cell Culture Techniques	3	50
BT-535 (A/B)	(A) Plant Biotechnology (B) Animal Biotechnology	3	50
BT-536 Elective Paper (Any one)	(A) Agricultural Biotechnology (B) Clinical Pathology & Diagnostics (C) Environmental Biotechnology (D) Pharmaceutical Biotechnology	3	50
BT-537	Practical (Cell Culture & Recombinant DNA Tech.)	2	50
BT-538	Practical (Bioinformatics)	2	50

IV SEMESTER

Course Code	Course Name	Credit hours	Marks
BT-541	Genomics, Proteomics and Metabolomics	3	50
BT-542	IPRs, Biosafety and Bioethics	3	50
BT-543	Seminar	3	50
BT-544	Project work and Viva Voce	(12+3)	250
	Total Course Credit	**90 CH**	**1600**

Proceedings of the meeting of the members of Board of Studies of Department of Biotechnology and Bioinformatics (BT and BI), Sambalpur University Held on 02/11/2017 AT 2.30PM

Members Present:

1.	Prof. P. K. Naik,	Head, Department of BT and BI (Chairman, BoS)
2.	Dr. A. K. Patel	Assoc. Professor, Department of BT and BI
3.	Mr. B. P. Bag	Asst. Professor, Department of BT and BI
4.	Dr. B. Behera	Asst. Professor, Department of BT and BI
5.	Prof. S. N. Nayak,	Professor, School of Physics, Sambalpur University
6.	Prof. P. K. Behera	Professor, School of Chemistry, Sambalpur University

Business Transacted:

At the outset the Chairman Board of Studies (BoS), Department of BT and BI, Sambalpur University welcomed all the members present during the meeting. The Head Department of BT and BI briefed the course outline of M. Sc. (Biotechnology) and M. Sc. (Bioinformatics). The proceedings of the meeting are follows:

1. Resolved that Plant Biotechnology and Animal Biotechnology will be incorporated as compulsory paper for third semester of M. Sc. Biotechnology students which will be effective from June 2018.
2. Resolved that Practical (Cell culture Technique and Bioinformatics) (Paper Code: BT-537) and Practical (Plant and Animal Biotechnology) (Paper Code: BT-538) will be incorporated in place of Practical (Cell Culture Technique and Recombinant DNA Tech.) and Practical (Bioinformatics) which will be effective from June 2018.
3. Resolved that elective courses (Paper Code: BT-536(A/B/C/D)) for M.Sc. Biotechnology students will be offered in fourth semester instead of third semester and will be given new Paper Code as BT-543(A/B/C/D) which will be effective from June 2018.
4. Resolved that three elective courses as mentioned below will be introduced in fourth semester of M. Sc. Bioinformatics in place of Practical (Computer Aided Drug Design) (Paper Code: BI-545) which will be effective from June 2018.
    a. System Biology (Paper Code: BI-543(A))
    b. Clinical Data Warehouse and Data Mining (Paper Code: BI-543(B))
    c. NGS and Microarray Data Analysis (Paper Code: BI-543(C))
5. Resolved that Practical (Computer Aided Drug Design) (Paper Code: BI-543) will be merged with Practical (Molecular Modeling) to incorporate Practical (Molecular Modeling and Computer Aided Drug Design) (Paper Code: BI-538) which will be effective from June 2018.

Dr. A. K. Patel

02/11/2017
Prof. P. K. Naik

Mr. B. P. Bag

02.11.2017
Dr. B. Behera

2/11/17
Prof. S. N. Nayak

2/11/17
Prof. P. K. Behera

COURSES OF STUDY
M.Sc Bioinformatics (Self Financing)
(2018-2020)

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019, ODISHA

OUTLINE OF COURSE STRUCTURE
M.Sc. BIOINFORMATICS (Session: 2018-20)

SEMESTER-I

Course Code	Course Name	Credits hours	Marks
BI-411	(A) Physical Sciences (B) Foundation Biology	3	50
BI-412	Chemistry of Biomolecules	3	50
BI-413	Genetics	3	50
BI-414	Microbiology	3	50
BI-415	Molecular Biology- I	3	50
BI-416	Concepts in Computing	3	50
BI-417	Practical (Genetics and Microbiology)	2	50
BI-418	Practical (Biochemistry)	2	50
Optional (Any One)	Add on non credit course: A. Communication Skill B. Leadership & Personality Development		

SEMESTER-II

Course Code	Course Name	Credit hours	Marks
BI-421	Probability and Biostatistics	3	50
BI-422	Bioenergetics and Metabolism	3	50
BI-423	Immunology	3	50
BI-424	Molecular Biology- II	3	50
BI-425	Bioinformatics Resources	3	50
BI-426	Python and R Programming	3	50
BI-427	Practical (Immunology and Molecular Biology)	2	50
BI-428	Practical (Bioinformatics Resources & Programming)	2	50

SEMESTER-III

Course Code	Course Name	Credit hours	Marks
BI-531	Recombinant DNA Technology	3	50
BI-532	Computational Biology	3	50
BI-533	Molecular Modeling and Simulation	3	50
BI-534	Database Management System	3	50
BI-535	Data Warehouse and Data Mining	3	50
BI-536	Computer Aided Drug Design	3	50
BI-537	Practical (DBMS, Data Warehouse and Data Mining)	2	50
BI-538	Practical (Molecular Modeling and Computer Aided Drug Design)	2	50
Optional (Any One)	Add on non credit course: A. Entrepreneurship Development B. Soft Skill & IT Skill		

SEMESTER-IV

Course Code	And Course Name	Credit hours	Marks
BI-541	Genomics, Proteomics and Metabolomics	3	50
BI-542	Computational Genomics and Proteomics	3	50
BI-543 (Elective Paper (Any One)	(A) System Biology	3	50
	(B) Clinical Data Warehouse and Data Mining		
	(C) NGS and Microarray Data Analysis		
BI-544	Seminar	3	50
BI-545	Project work and Viva voce	(9+3)	200
Total Course Credit		**90 CH**	**1600**

Programme Outcome

PO-1	**Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions
PO-2	**Effective Communication:** Will be able to speak, read, write and listen clearly in person and through electronic media in English and in one Indian Language
PO-3	**Social Interaction (Interpersonal Relation):** Elicit views of others, mediate disagreements and prepared to work in team
PO-4	Entrepreneurship Capability: Demonstrate qualities to be prepared to become an entrepreneurship
PO-5	Ethics: Recognize different value systems including your own, understand the moral dimensions and accept responsibility for them
PO-6	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development
PO-7	Life-Long Learning: Acquire the ability to engage in independent and life-long learning in the context of socio-technological changes

FIRST SEMESTER

COURSES OF STUDY
M.Sc Biotechnology (Self Financing)
(2018-2020)

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019, ODISHA

OUTLINE OF COURSE STRUCTURE
M.Sc. BIOTECHNOLOGY (Session: 2018-20)

SEMESTER-I

Course Code	Course Name	Credits hours	Marks
BT-411	(A) Physical Sciences (B) Fundamental Biology	3	50
BT-412	Chemistry of Biomolecules	3	50
BT-413	Genetics	3	50
BT-414	Microbiology	3	50
BT-415	Molecular Biology- I	3	50
BT-416	Instrumentation and Techniques	3	50
BT-417	Practical (Genetics and Microbiology)	2	50
BT-418	Practical (Chemistry of Biomolecules)	2	50
Optional (Any One)	Add on non-credit course: A. Communication Skill B. Leadership & Personality Development		

SEMESTER-II

Course Code	Course Name	Credit hours	Marks
BT-421	Probability and Biostatistics	3	50
BT-422	Bioenergetics and Metabolism	3	50
BT-423	Immunology	3	50
BT-424	Molecular Biology- II	3	50
BT-425	Cell and Developmental Biology	3	50
BT-426	Industrial Biotechnology	3	50
BT-427	Practical (Immunology& Molecular Biology)	2	50
BT-428	Practical (Cell Biology &Industrial Biotechnology)	2	50

SEMESTER-III

Course Code	Course Name	Credit hours	Marks
BT-531	Recombinant DNA Technology	3	50
BT-532	Bioinformatics	3	50
BT-533	Bioprocess Engineering & Technology	3	50
BT-534	Cell Culture Techniques	3	50
BT-535	Plant Biotechnology	3	50
BT-536	Animal Biotechnology	3	50
BT-537	Practical (Cell Culture Tech.& Bioinformatics)	2	50
BT-538	Practical (Plant & Animal Biotechnology)	2	50
Optional (Any One)	Add on non-credit course: A. Entrepreneurship Development B. Soft Skill & IT Skill		

IV SEMESTER

Course Code	Course Name	Credit hours	Marks
BT-541	Genomics, Proteomics and Metabolomics	3	50
BT-542	IPRs, Biosafety and Bioethics	3	50
BT-543 Elective Paper (Any one)	(A) Agricultural Biotechnology (B) Clinical Pathology & Diagnostics (C) Environmental Biotechnology (D) Pharmaceutical Biotechnology	3	50
BT-544	Seminar	3	50
BT-545	Project work and Viva Voce	(9+3)	200
Total Course Credit		**90 CH**	**1600**

Programme Outcome

PO-1	**Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions
PO-2	**Effective Communication:** Will be able to speak, read, write and listen clearly in person and through electronic media in English and in one Indian Language
PO-3	**Social Interaction (Interpersonal Relation):** Elicit views of others, mediate disagreements and prepared to work in team
PO-4	Entrepreneurship Capability: Demonstrate qualities to be prepared to become an entrepreneurship
PO-5	Ethics: Recognize different value systems including your own, understand the moral dimensions and accept responsibility for them
PO-6	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development
PO-7	Life-Long Learning: Acquire the ability to engage in independent and life-long learning in the context of socio-technological changes

COURSES OF STUDY
MASTER OF PHILOSOPHY (BIOTECHNOLOGY)
(SESSION: 2017-2018)

BT & BI

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019 (ODISHA)

MASTER OF PHILOSOPHY (BIOTECHNOLOGY)
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY

OUTLINE COURSE STRUCTURE

Course	Course Title	Credit hours	Marks
	FIRST SEMESTER		
BT-611	Instrumentation and Techniques	4 CH	100
BT-612 (A to G)	Elective Papers (Any one):	4 CH	100
	(A) Applied Immunology		
	(B) Bioprocess Engineering & Technology		
	(C) Computational Biology		
	(D) Rational Drug Design & Evaluation		
	(E) Genomics & Proteomics		
	(F) Medical Microbiology		
	(G) Plant Genome Mapping and Genomics		
BT-613	Research Methodology (Quantitative Analysis and Computer Applications)	4 CH	100
BT-614	Practical (Based on BT-611 and BT-612)	4 CH	100
BT-615	Review of Research papers published in Journals (Review Report- 2 CH and Seminar- 2 CH)	(2+2) CH	100
Semester Total Credit		**20 CH**	**500**
	SECOND SEMESTER		
BT-621	Seminar (At least two)	2 CH	50 + 50
BT-622	Dissertation (Interim Report- 8 CH & Final presentation- 10 CH)	(8+10) CH	100 + 200
Semester Total Credit		**20 CH**	**400**
Total Course Credit		**40 CH**	**900**

COURSES OF STUDY
MASTER OF PHILOSOPHY (BIOTECHNOLOGY)
(SESSION: 2020-2021)

DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019 (ODISHA)

MASTER OF PHILOSOPHY (BIOTECHNOLOGY)
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
SAMBALPUR UNIVERSITY

OUTLINE COURSE STRUCTURE

Course	Course Title	Credit hours	Marks
	FIRST SEMESTER		
BT-611	Instrumentation and Techniques	4 CH	100
BT-612	Research Methodology (Quantitative Analysis and Computer Applications)	4 CH	100
BT-613 (A to G)	Elective Papers (Any one):	4 CH	100
	(A) Applied Immunology		
	(B) Bioprocess Engineering & Technology		
	(C) Computational Biology		
	(D) Rational Drug Design & Evaluation		
	(E) Genomics & Proteomics		
	(F) Medical Microbiology		
	(G) Plant Genome Mapping and Genomics		
BT-614	Research And Publication Ethics	2 CH	100
BT-615	Practical (Based on BT-611 and BT-612)	4 CH	100
BT-616	Review of Research papers published in Journals (Review Report- 2 CH and Seminar- 2 CH)	(2+2) CH	100
Semester Total Credit		**22 CH**	**600**
	SECOND SEMESTER		
BT-621	Seminar (At least two)	2 CH	50 + 50
BT-622	Dissertation (Interim Report- 8 CH & Final presentation- 10 CH)	(8+10) CH	100 + 300
Semester Total Credit		**20 CH**	**500**
Total Course Credit		**42 CH**	**1100**

Proceeding of Department Council Meeting of School of Chemistry (Autonomous) held on 9/05/2017

Members Present

1. Prof. C. R. Tripathy, Vice-Chancellor in the chair
2. Prof. B. Satpathy, Chairman, P.G. Council
3. Prof. S.K. Sahu, Registrar
4. Prof. B. Behera, Retd. Professor, Burla
5. Prof. P.K. Kar, VSSUT, Burla
6. Prof. P.K. Behera, Member Secretary & Head of School
7. Prof. (Mrs) P.K. Misra
8. Dr. A.K. Behera
9. Dr. A. Mahapatra
10. Dr. S.N. Sahu
11. Dr. N.K. Behera

Business Transacted

Under the chairmanship of Vice-Chancellor, Head of the School welcome the members of Department Council and presented the activities of the School for the Academic Session 2016-17.

1. *All resolutions taken by the Academic Committee of the School are presented before the committee for consideration and approval.*

   It is approved.

2. *Academic Calendar for the session 2017-18 is placed before the committee for approval.*

   It is approved.

3. *Increase of seat in M. Sc. in Chemistry in payment category from 6 to 12 (6 nos) and M. Sc. in Applied Chemistry from 10 to 15 (5 nos) from the coming session 2017-18 is placed before the committee for approval.*

   It is approved.

4. *Revised syllabus for M. Sc. (Chemistry & Applied Chemistry) to be effective from the session 2017-18 (approved by Academic Committee held on 25/04/2017) is placed for approval.*

   It is approved to be effective from the session 2017-18

At the end Prof. (Mrs) P.K. Misra offered a vote of thanks to all the members.

09.5.17
(C. R. Tripathy)
Vice-Chancellor

9/5/17
(B. Satpathy)
Chairman, P.G. Council

9/5/17
(S.K. Sahu)
Registrar

9/5/17
(B. Behera)

9/5
(P.K. Kar)

9/5/17
(P.K. Behera)
Head, Chemistry

9/5/17
P.K. Misra

9/5/17
A.K. Behera

9/5/17
A. Mahapatra

9/5/17
S.N. Sahu

09/05/17
N.K. Behera

Semester Syllabus for M. Sc. in Chemistry

(with effect from the session 2017-18)

FIRST SEMESTER

Course No	Course Title	Credit	Mark
CH-401	GROUP THEORY AND SOLID STATE CHEMISTRY	03	50
CH -402	TRANSITION METAL CHEMISTRY	03	50
CH -403	STRUCTURE AND REACTIVITY	03	50
CH -404	STEREOCHEMISTRY	03	50
CH -405	THERMODYNAMICS	03	50
CH -406	DYNAMICS	03	50
CH -407	INORGANIC PRACTICAL-I	02	50
CH -408	ORGANIC PRACTICAL-I	02	50
	Total	**22**	**400**

SECOND SEMESTER

Course No	Course Title	Credit	Mark
CH -411	METAL π-COMPLEXES AND CLUSTERS	03	50
CH -412	BIOINORGANIC CHEMISTRY	03	50
CH -413	ORGANIC REACTION MECHANISM - I	03	50
CH -414	ORGANIC REACTION MECHANISM - II	03	50
CH -415	STATISTICAL THERMODYNAMICS & HMO THEORY	03	50
CH -416	SURFACE CHEMISTRY	03	50
CH -417	INORGANIC PRACTICAL-II	02	50
CH -418	ORGANIC PRACTICAL-II	02	50
	Total	**22**	**400**

THIRD SEMESTER

Course No	Course Title	Credit	Mark
CH -501	INSTRUMENTAL METHODS OF ANALYSIS	03	50
CH -502	INORGANIC REACTION DYNAMICS & NUCLEAR CHEMISTRY	03	50
CH -503	ORGANIC REDOX REACTION & SPECTROSCOPY	03	50
CH -504	PERICYCLIC REACTION, PHOTOCHEMISTRY & RETROSYNTHESIS	03	50
CH -505	QUANTUM CHEMISTRY	03	50
CH -506	ATOMIC & MOLECULAR SPECTROSCOPY	03	50
CH -507	PHYSICAL PRACTICAL	03	50
CH -508	REVIEW WORK	02	50
	Total	**23**	**400**

FOURTH SEMESTER

Core Courses

Course No	Course Title	Credit	Mark
CH -511	ADVANCED ORGANOMETALLIC CHEMISTRY	03	50
CH -512	ADVANCED SPECTROSCOPY	03	50
CH -513	COMPUTER APPLICATION IN CHEMISTRY	02	50
CH -514	ANALYTICAL PRACTICAL	02	50
CH -515	PRACTICAL ON COMPUTER IN CHEMISTRY	02	50
CH -516	SEMINAR	02	50
A student is required to choose any three theory elective courses either from Group A or Group B		09	150
	Total	**23**	**450**

Elective Courses

Group A

CH-521	ADVANCED ORGANIC SYNTHESIS	03	50
CH-522	PHOTOPHYSICAL PROCESSES & INSTRUMENTATION	03	50
CH-523	CHEMISTRY OF NANO MATERIALS	03	50
CH-524	INDUSTRIAL PROCESSES	03	50

Group B

CH-531	ADVACED ANALYTICAL CHEMISTRY	03	50
CH-532	SUPRAMOLECULAR CHEMISTRY	03	50
CH-533	ADVANCED SURFCE CHEMISTRY & CATALYSIS	03	50
CH-534	MATERIAL AND ENERGY BALANCE	03	50

Semester Syllabus for M. Sc. in Applied Chemistry
(With effect from the session 2017-18)

FIRST SEMESTER

Course No	Course Title	Credit	Mark
ACH-401	GROUP THEORY AND SOLID STATE CHEMISTRY	03	50
ACH -402	TRANSITION METAL CHEMISTRY	03	50
ACH -403	STRUCTURE AND REACTIVITY	03	50
ACH -404	STEREOCHEMISTRY	03	50
ACH -405	THERMODYNAMICS	03	50
ACH -406	DYNAMICS	03	50
ACH -407	INORGANIC PRACTICAL	02	50
ACH -408	PHYSICAL PRACTICAL	02	50
	Total	**22**	**400**

SECOND SEMESTER

Course No	Course Title	Credit	Mark
ACH -411	METAL π-COMPLEXES AND CLUSTERS	03	50
ACH -412	BIOINORGANIC CHEMISTRY	03	50
ACH -413	ORGANIC REACTION MECHANISM - I	03	50
ACH -414	ORGANIC REACTION MECHANISM - II	03	50
ACH -415	STATISTICAL THERMODYNAMICS & HMO THEORY	03	50
ACH -416	SURFACE CHEMISTRY	03	50
ACH -417	ORGANIC PRACTICAL	02	50
ACH -418	ANALYTICAL PRACTICAL	02	50
	Total	**22**	**400**

THIRD SEMESTER

Course No	Course Title	Credit	Mark
ACH -501	INSTRUMENTAL METHODS OF ANALYSIS	03	50
ACH -502	INDUSTRIAL POLLUTION & ITS MANAGEMENT	02	50
ACH -503	INDUSTRIAL POLICY & ENTREPRENEURSHIP	02	50
ACH -504	PROJECT	16	100
	Total	**23**	**250**

FOURTH SEMESTER

Course No	Course Title	Credit	Mark
ACH -511	COMPUTER APPLICATION IN CHEMISTRY	02	50
ACH -512	ENERGY & MATERIAL BALANCE AND NANOMATERIALS	03	50
ACH -513	INDUSTRIAL PROCESSES	03	50
ACH -514	MEDICINAL CHEMISTRY	03	50
ACH -515	SURFACTANTS AND DETERGENTS	03	50
ACH -516	PRACTICAL ON COMPUTER IN CHEMISTRY	03	50
ACH -517	INDUSTRIAL PRACTICAL	02	50
ACH -518	REVIEW	02	50
ACH -519	SEMINAR	02	50
	Total	**23**	**450**

SAMBALPUR UNIVERSITY:JYOTI VIHAR:BURLA
SAMBALPUR, ODISHA-768019

Proceedings of the meeting of the Board of Studies in Computer Science

Held at 12.00 on date 08/02/2020 in the Administrative Building of the University.

MEMBER PRESENT:-

1. Dr. C. S. Panda
2. Sri. Niranjan Bara
3. Sri. Jagadish Sahoo
4. Sri. Jayakrushna Sagar
5. Sri. Sambit Kumar Mondal
6. Sri Satyabrat Sahoo
7.
8.
9.
10.
11.
12.

BUSINESS TRANSACTED:-

1. ~~Sri~~/Dr/~~Prof~~ C. S. Panda (Dean/Add.) _____ has been elected as the Chairman of the Board for the current academic session 2019-20.
2. Recommended the lists of Examiners, Paper Setters, Moderators and members of the Conducting Board for the following Examinations separately.
   i) All relevant examinations to be held
   ii) during 2020-21.
   iii)
   iv)
   v)

3. Recommended the list of Indian and Foreign Examiners for evaluating of Ph.D. Thesis of the following candidates separately.
   1. Sasmita Kumari Nayak
   2. Sagarika Mishra
   3.
   4.
   5.
   6.
   7.
   8.
   9.
   10.

(During consideration of examiners in respect of Sl. No. 1 and 2
~~Sri~~/Dr. C. S. Panda
_____
_____
respectively remained absent in the meeting)

4. Recommended no change/minor change/in the ***Syllabus, Revised Syllabus*** for the following examinations as in appendix _____ enclosed.

i) [redacted], PGDCA no change.
ii) Recommended revised syllabus for MSc in computer science detail in Annexure-A.
iii) MPhil syllabus no change.
iv) Annexure-A will be submitted by th Chairman, after checking typographica errors.

5. Recommended the following modification /amendments in the ***regulation*** for _____ Examinations.

v) Recommended some minor changes in BCA CBCS syllabus effective from academic session 2019-20. Details in Annexure-B

6. Other recommendations , if any.

SIGNATURE OF THE MEMBERS PRESENTS

08/2/2020

Nijan Bara 08/02/2020

Jayakrushna Sagar 08-02-2020

Jagadish Sat 8/2/20

Sambit 8/2/20

08/02/2020

Appendix- A

SAMBALPUR UNIVERSITY

JYOTI VIHAR, BURLA-768019

Two Year M.Sc. Degree Course in

Computer Science

M.Sc. Computer Science

(To be implemented from Academic year 2020-2021)

Semester Structure

First Semester - First August to December.

Second Semester - First January to June.

Third Semester - First July to December.

Fourth Semester - First January to June.

Course Structure of M.Sc. Computer Science Programme

Semester - I	Semester - II	Semester - III	Semester - IV
Object Oriented Programming using C++	Programming with JAVA	Python Programming	Major Project
Software Engineering &OOAD	Database Management System	Data Communication &Networking	Seminar
Operating System	Data Structure	Digital Image Processing	
Computer Organization and Architecture	Discrete Mathematics	Elective: (Select any one) 1. Artificial Intelligence 2. Parallel Computing 3. Computer Security 4. Analysis & Design of Algorithm	
Lab on C++	Lab on JAVA Programming	Lab on Python Programming	
Lab on Operating System	Lab on DBMS	Lab on Digital Image Processing	

Semester - I

Course Code	Course Title	No. of Credits	No. of Hours/Week
MSC -101	Object Oriented Programming using C++	4	4
MSC -102	Software Engineering &OOAD	4	4
MSC -103	Operating System	4	4
MSC -104	Computer Organization and Architecture	4	4
MSC -105	Lab on C++	3	6
MSC -106	Lab on Operating System	3	6
Total No of Credits		**22**	-

Semester - II

Course Code	Course Title	No. of Credits	No. of Hours/Week
MSC -201	Programming with JAVA	4	4
MSC -202	Database Management System	4	4
MSC -203	Data Structure	4	4
MSC -204	Discrete Mathematics	4	4
MSC -205	Lab on JAVA Programming	3	6
MSC -206	Lab on DBMS	3	6
Total No of Credits		**22**	-

8/2/20 8/2/20 8/2/20 8/2/2020 8/2/2020

Semester - III

Course Code	Course Title	No. of Credits	No. of Hours/Week
MSC -301	Python Programming	4	4
MSC -302	Data Communication &Networking	4	4
MSC -303	Digital Image Processing	4	4
MSC -304	Elective: (Select any one)		
MSC -304(1)	Artificial Intelligence		
MSC -304(2)	Parallel Computing		
MSC -304(3)	Computer Security		
MSC -304(4)	Analysis & Design of Algorithm		
MSC -305	Lab on Python Programming	3	6
MSC -306	Lab on Digital Image Processing	3	6
Total No of Credits		**22**	-

Semester - IV

Course Code	Course Title	No. of Credits	No. of Hours/Week
MSC -401	Major Project	12	24
MSC -402	Seminar	4	4
Total No of Credits		**16**	-

Total Credits of the Course

	Sem - I	Sem - II	Sem - III	Sem - IV	TOTAL
Total No of Credits	22	22	22	16	**82**

Ingudith Sol 8/2/20 Nirja Bara 8/2/2020 8/2/2020

पूर्व क्षेत्रीय समिति
राष्ट्रीय अध्यापक शिक्षा परिषद्
(भारत सरकार का एक विधिक संस्थान)

गुरुर्गुरुतमो धाम
NCTE

Eastern Regional Committee
National Council for Teacher Education
(A Statutory Body of the Government of India)

TO BE PUBLISHED IN GAZETTE OF INDIA
(EXTRAORDINARY)
PART – III, SECTION 4

F.No.ER- 242.6.42 /ID No.- 7410/ 3 Yrs. Integrated- B.Ed. M.Ed./2017/5472**/Date:** 18·10·2017

ORDER

WHEREAS, in terms of Section 14(1) of the NCTE Act, 1993, Sambalpur University, Street/Road - Burla, Village- Jyoti Vihar, Taluka/Mandal - Burla, Town/City - Jyoti Vihar, Dist.- Sambalpur, Orissa – 768016 has applied for grant of recognition/ permission to **Sambalpur University, Street/Road - Burla, Village- Jyoti Vihar, Taluka/Mandal - Burla, Town/City - Jyoti Vihar, Dist.- Sambalpur, Orissa - 768016 (Application No. ERCAPP201646188) (ID No.- 7410)** for the given below programmes online on **22.06.2016** and hard copy received by Eastern Regional Committee of NCTE on **25.06.2016.**

Name of Course	Duration
3 Yrs. Integrated- B.Ed. M.Ed.	3 Years

2. **AND WHEREAS**, on scrutiny of the application submitted by the institution, the documents attached therewith, the affidavit submitted and the report received from VT and videography, and the certificates received from the affiliating body, the Committee is satisfied that the applicant fulfils the requirements under the provisions of NCTE Act, Rules and relevant Regulations including the Norms and Standards for the said teacher education programme such as instructional facilities, infrastructural facilities, financial resources, etc., for running the programme.

3. **NOW THEREFORE**, in exercise of the powers vested under Section 14(3)(a) of the NCTE Act 1993, the Eastern Regional Committee, NCTE hereby grants recognition/ permission to **Sambalpur University, Street/Road - Burla, Village- Jyoti Vihar, Taluka/Mandal - Burla, Town/City - Jyoti Vihar, Dist.- Sambalpur, Orissa – 768016** for conducting the below mentioned programmes from the academic session **2018-2019** under Clause 7(16) of NCTE (Recognition Norms & Procedure) Regulations, 2014 subject to fulfillment of the following conditions:-

Name of Course	Duration	Approved Units	Approved Students	RC Meeting No.
3 Yrs. Integrated- B.Ed. M.Ed.	3 Years	1	50 Intake	242

Contd...2

15, Neelakantha Nagar, Nayapalli, Bhubaneswar (ODISHA) - 751 012
Phone: (0674) 2563156, 2563252, 2562793 Fax : (0674) 2564873
E-Mail: erc@ncte-india.org, Website: www.ncte-india.org, www.ercncte.org

I. The institution shall comply with the various other norms and standards prescribed in the NCTE regulations, as amended from time to time.

II. The institution shall make admission only after it obtains affiliation from the examining body in terms of clause 8(10) of the NCTE (Recognition Norms & Procedure) Regulations 2014.

III. The institution shall ensure that the required number of academic staff duly approved by affiliating body for conducting the course should always remain in position.

4. Further, the recognition/permission is subject to fulfillment of all such other requirements as may be prescribed by other regulatory bodies like UGC, affiliating University / Body, the State Government etc., as applicable.

5. The institution shall submit to the Regional Committee a Self-Appraisal Report at the end of each academic year along with the statement of annual accounts duly audited by a Chartered Accountant.

6. The institution shall maintain its website with hyperlink to the Council and the Eastern Regional Committee, covering, inter-alia, the details of the institution, its location, name of the programme applied for with intake; availability of physical infrastructure, such as land, building, office, classrooms and other facilities or amenities; instructional facilities, such as laboratory and library and the particulars of their proposed teaching faculty and non-teaching staff with photographs, for information of all concerned. The information with regard to the following shall also be made available on the website, namely:-

a) Sanctioned programmes along with annual intake in the institution;
b) Name of faculty and staff in full as mentioned in school certificate along with their qualifications, scale of pay and photograph;
c) Name of faculty members who left or joined during the last quarter;
d) Names of Students admitted during the current session along with qualification, Percentage of marks in the qualifying examination and in the entrance test, if any, date of admission, etc.;
e) Fee charged from students;
f) Available infrastructural facilities;
g) Facilities added during the last quarter;
h) Number of books in the library, journals subscribed to, and additions, if any, in the last quarter;
i) The affidavit with enclosure submitted along with application;
j) The institution shall be free to post additional relevant information, If it so desires.
k) Any false or incomplete information on its website shall render the institution liable for withdrawal of recognition.

7. The institution shall adhere to the mandatory disclosure in the prescribed format and display up-to-date information on its official website.

8. The institution shall make available list of students admitted on its official website.

9. The Educational Institution shall follow Uniform Accounting System as brought out by ICAI and accepted by MHRD.

Contd...3

10. If the institution contravenes any of the above conditions or the provision of the NCTE Act, Rules, Regulations and orders made and issued there under, the institution will render itself liable to adverse action including withdrawal of recognition / permission by the Regional Committee under the provisions of Section 17(1) of the NCTE Act.

By Order,

-Sd-
Regional Director

The Controller of Publications,
Department of Publications, (Government of India),
Ministry of Urban Development,
Civil Lines,
New Delhi - 110054

To

The Registrar/Correspondent,
Sambalpur University,
Street/Road - Burla, Village- Jyoti Vihar,
Taluka/Mandal - Burla, Town/City - Jyoti Vihar,
Dist.- Sambalpur, Orissa – 768016

Copy to:

1. The Commisssioner-Cum-Secretary, Department of School & Mass Education, Govt. of Odisha, Secretariat, Bhubaneswar, Odisha- 751001.
2. The Registrar, Sambalpur University, Jyoti Vihar, Burla, Sambalpur, Odisha- 768019.
3. The Director, Directorate of TE & SCERT, Bhubaneswar, Odisha- 751001.
4. The Director, Department of Higher Education, Govt. of Odisha, Heads of Department, Bhubaneswar, Odisha- 751017.
5. The Secretary, Dept. of School Education and Literacy, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, New Delhi -110001.
6. The Under Secretary (CS), National Council for Teacher Education, Hans Bhawan, Wing-II, 1, Bahadur Shah Zafar Marg, New Delhi- 110002.
7. Office Order file/ Institution file.

17/10/17
Regional Director

COURSES OF STUDY FOR 3-YEAR INTEGRATED B.Ed.-M.Ed. PROGRAMME 2018-21

(For All Universities/Institutions of Odisha: As per the NCTE Norms and Standards, 2014 and NCTE Curriculum Framework)

Context

The Integrated B.Ed.- M.Ed. Programme is a three-year full-time professional programme in education, without any option of intermediate exit before completing the 3-years study. It aims at preparing teacher educators and other professionals in education, including curriculum developers, educational policy analysts, educational planners and administrators, school principals, supervisors and researchers in the field of education. The completion of the programme shall lead to integrated B.Ed. – M.Ed. degree with specialization in school education (both elementary and secondary).

The integrated programme thus subsumes all curricular elements of B.Ed. and M.Ed. The graduate of an integrated B.Ed.- M.Ed. programme should be equivalent in his/her knowledge and competence, to a graduate of a 2-year M.Ed. programme. Further he/she should have developed the professional competence and skills of a school teacher that a 2-year B.Ed. programme or a 4-year integrated teacher preparation programme should have developed.

While developing the detailed design of this syllabus, the recommendations as advanced in the following documents have been taken into consideration:

- National Curriculum Framework - 2005
- National Curriculum Framework for Teacher Education 2009
- NCTE's Norms and Standards for the 3-year Integrated B.Ed.-M.Ed. Programme, 2014
- Report of the NCTE Sub-Committee for Three Year Integrated B.Ed.-M.Ed. Programme, 2014
- NCTE's Curriculum Framework : Two Year M.Ed. Programme, 2014
- The Right of Children to Free and Compulsory Education Act 2009
- Framework for implementation of Rashtriya Madhyamik Shiksha Abhiyan: A scheme for Universalization of access to and improvement of quality at the secondary stage, 2008
- Sarva Shiksha Abhiyan: Framework for implementation based on the Right of Children to Free and Compulsory Education Act, 2009 (2011).

The following principles have guided the development of this course :

- Reducing the gap between theory and practice,
- Eliminating mismatch between post-graduate teacher education curriculum and teacher education institution realities,
- Inclusion of all relevant curricular components of 2-year B.Ed. and 2-year M.Ed. programmes
- Updating of curricular areas of teacher education in terms of enrichment of content knowledge and pedagogical competence of prospective teacher educators,
- Using variety of approaches and methods for transaction of the course contents,
- Incorporating multi-modal strategies for effective, continuous and comprehensive assessment of the performance of the prospective teacher educators.

Course Objectives:

The 3-year Integrated B.Ed.-M.Ed. Course is a professional programme in the field of Teacher Education which aims at preparing Teacher Educators and other professionals including curriculum developers, educational policy analysts, planners, administrators, supervisors, school Principals and researchers. The completion of the programme shall lead to B.Ed.- M.Ed. Degree with specialization in selected areas focusing on both elementary and secondary education.

The programme is designed to provide opportunities for the perspective Teacher Educators to extend and deepen their horizontal of knowledge and understanding of education and teacher education, develop research capacities, specialized in select areas etc. The course includes both critical comprehension of theory as well as hands-on and field based reflective practices, skills and competences.

The Syllabus for Three-year B.Ed.-M.Ed. programme is designed to attain the following broad objectives. After the completion of the course the prospective teacher educators shall:

- Understand the central concepts, tools of inquiry, and structures of the disciplines and can create learning experiences that make these aspects of subject matter meaningful.
- Understand how children learn and develop how they differ in their approaches to learning and create learning opportunities that are adapted to diverse learners and learning contexts.
- Plan learning experiences that are based on learner's existing proficiency, interests, experiences including misconceptions and errors and understand how students come to view, develop and make sense of subject matter contained in the learning experiences.
- Use knowledge of effective verbal, nonverbal and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
- Understand and use formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
- Develop sensibilities to identify problems for further probing and abilities to conduct pure, applied and/or action research on the identified issues concerning educational theory and practices.
- Develop self-identity as a teacher educator through continuous experiences and reflective practices that continually evaluate the effects of his/her choices and actions.

Modes of Transaction:

With a view to move away from theoretical discourses and lectures, the student-teacher is required to be engaged in various kinds of learning experience. This programme intends to provide him/her with the specific engagements that are spelt out under each course. However, the nature of engagement of the perspective Teacher-Educator will be of the following kinds:

- **Lecture-cum-Discussion Session:** The teacher educator provides the perspective Teacher-Educator a platform to review their experiences, helps them to develop insights into the disciplinary knowledge base and to relate them to the school realities.
- **Focused Reading and Reflection:** Perspective Teacher-Educator would be led to focus readings on various themes with questions inviting reflections either individually or in small groups.
- **Observation-Documentation-Analysis:** Simulated and real school/ community experiences would be arranged for the student teachers to observe, document in the form of record/ journal/ diary and analyze with an intention to revisit their own understandings or develop new insights.
- **Seminar Presentations:** Students will undertake thematic/topical study, prepare write-up and make seminar presentation followed by open-house discussion with a view to enhance their knowledge base and repertoire of skills in presentation.

- **Attachment to Teacher Education Institution:** Learning experiences would be provided through several teacher education institution-based practicum for development of certain professional qualities and competencies. This would include opportunities for planning and implementation of learning experiences and strategies, and reflecting on their appropriateness and effectiveness.
- **Workshop :** A series of learning experiences in a given performance area would be provided to perspective Teacher-Educator in the form of workshop, engaging them in modeling-practice-feedback sequence with a view to developing specified competencies required for a teacher.
- **Panel Discussion:** A series of panel discussions shall be planned on different themes/issues relating to school education and teacher education and shall be organized in the respective TEIs / University Department in which the prospective teacher educators shall participate and each of them shall prepare a brief report on the conclusion of each panel discussion session.
- **Group Work:** On different dimensions of an issue/theme relating to curricular components or concerning any emerging issues of school education and teacher education, groups shall be formed among the prospective teacher educators who would work on the theme and performance of each individual group shall be reported.
- **Library Work:** On specific theme/issue/problems relating to school education and teacher education or on any other curricular issues, the prospective teacher educators would be asked to consult library, collect information and prepare their individual write-ups for seminar presentation and discussion.
- **Projects:** Course related projects having contemporary concern shall be assigned to individual prospective teacher educator to be completed within a specified period of time with a report.
- **Collaborative Presentations:** The prospective teacher educators in groups along with their allotted mentors shall work collaboratively on a theme and prepare the report for seminar presentation.
- **School Visit and Sharing of Experiences:** As per the requirements of the School Internship programme included in the curriculum, school visits, interaction with students, teachers and other stakeholders and sharing the experiences with them and with peers shall be one of the core activities of the prospective teacher educators. Similar visits to other teacher education institutions, both ETEIs and STEIs, and interaction with student teachers, teacher educators and other stakeholders shall be conducted and the experiences shall be shared.
- **Sessional Work :** Each course paper in this programme has theoretical as well as practical component in the form of assignment which need to be conducted as assessed internally in time.

The topics for the sessional work listed under each course are suggestive. The concerned teacher educator may assign any other topic/issue relevant to the respective course.

Working Days: There shall be at least 215 working days in each year exclusive of the period of admission and inclusive of classroom transaction, practicum, field study and conduct of examination. The institution shall work for a minimum of 36 hours in a week (5 or 6 days). The total duration of the programme will be roughly equivalent to 107 weeks of six days each totaling up to 640 days.

3.ttendance: Minimum attendance shall be 80% for Theory Courses and Practicum and 90% for Field Attachment.

SEMESTER- I (16 +8 CREDITS)

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
A. Core Components		**08**	**60**	**140**	**200**
A.1 Perspective Courses		**08**	**60**	**140**	**200**
Philosophy of Education	**PC-1** Introduction to Philosophy of Education	4	30	70	100
Sociology-History-Political Economy of Education	**PC-3** Sociology of Education	4	30	70	100
B. Specialization Components		**08**	**60**	**140**	**200**
B.1 Content Cum Pedagogy of School Subjects		**08**	**60**	**140**	**200**
PSS-A Odia, English, Mathematics & Bio-Science(any one)	Pedagogy of School Subjects Gr. A-P 1	4	30	70	100
	Pedagogy of School Subjects Gr. A-P 2	4	30	70	100
	TOTAL THEORY COURSE	**16**	**120**	**280**	**400**

PART- II	C -Practical Course	Credit	Marks		
			Internal	External	Total
C.1 Research Activity (RA)		**04**	**30**	**70**	**100**
Dissertation, Viva-voce on Dissertation, Seminar & School Observation	**RA-1** School Observation & Observing Children	4	30	70	100
C.2 Practicum Activity (PA)		**2**	**15**	**35**	**50**
Workshops, Seminars, Projects and Curriculum Transaction	**PA-1** Hand on Experience for Curriculum Transaction	2	15	35	50
C.4 Attachment Activity (SA)		**2**	**15**	**35**	**50**
1.Community work	**AA-1** Working With Community	2	15	35	50
	TOTAL PRACTICAL COURSE	**08**	**60**	**140**	**200**

	TOTAL THEORY COURSE	**16**	**120**	**280**	**400**
	TOTAL PRACTICAL COURSE	**08**	**60**	**140**	**200**
	THEORY & PRACTICAL	**24**	**180**	**420**	**600**

SEMESTER- II (16 +8 CREDITS)

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
A. Core Components		**16**	**120**	**280**	**400**
A.1 Perspective Courses		**08**	**60**	**140**	**200**
Psychology of Education	**PC-5** Introduction to Educational Psychology	4	30	70	100
Curriculum and Pedagogy Studies	**PC-9** Pedagogical Process and Practices	4	30	70	100
A.2 Research, Tools and Self Development (RTS)		**08**	**60**	**140**	**200**
Research in Education	**RTS-1** Introduction to Educational Research	4	30	70	100
Self - Development Skill & ICT	**RTS-3** Self Development Skill- Meditation & Yoga, Arts & Crafts and Theatre.	4	30	70	100
	TOTAL THEORY COURSE	**16**	**120**	**280**	**400**

PART- II	C -Practical Course	Credit	Marks		
			Internal	External	Total
C.2 Practicum Activity (PA)		**2**	**15**	**35**	**50**
Workshops, Seminars, Projects and Curriculum Transaction	**PA-2** Organization of Seminar on taught course	2	15	35	50
C.3 Internship Activity (IA)		**4**	**30**	**70**	**100**
Class Room Teaching Practice on both School Subjects Practice and Observation & Assignment	**IA-1** Class Room Teaching Practice on Subjects-1	4	30	70	100
C.4 Attachment Activity (SA)		**2**	**15**	**35**	**50**
2.Work: In-Service & Pre- Service Teacher Preparation Context	**AA-2** Working in In-service & Pre –Service Teacher Preparation context (TEIs)	2	15	35	50
	TOTAL PRACTICAL COURSE	**8**	**60**	**120**	**200**

	TOTAL THEORY COURSE	**16**	**120**	**280**	**400**
	TOTAL PRACTICAL COURSE	**08**	**60**	**140**	**200**
	THEORY & PRACTICAL	**24**	**180**	**420**	**600**

SEMESTER- III (14+10 CREDITS)

Course	Title	Credit (s)		Marks		
		Theory (Teaching Hrs.)	Practicum (Hrs./weeks)	Internal Assessment	External Exam.	Full Marks
PC-1	Introduction to Study of Education	4(64 Hrs.)	-	30	70	100
PC-9	Language across Curriculum	2(32 Hrs.)	-	15	35	50
RTS-1	Introduction to Research Methods	4(64 Hrs.)	-	30	70	100
PSS-B	Pedagogy of School Subjects-Gr.B-.P.1	4(64 Hrs.)	-	30	70	100
RTS Pr.-1	Dissertation	-	2 (64 Hrs.)	50	-	50
RTS Pr.-2	Research Seminar	-	2 (64 Hrs.)	50	-	50
PSS-Pr.III	SI-III Classroom Transaction and related activity	-	4 (6 weeks)	100	-	100
PSS Pr. IV	Interaction with Community	-	1 (1 week)	25	-	25
PSS-Pr. V	Discourse with Other Related Agencies	-	1 (1 week)	25	-	25
Total		**14 (224 Hrs.)**	**10**	**105+ 250**	**245**	**350+ 250**

SEMESTER- IV (18 +6 CREDITS)

Course	Title	Credit (s)		Marks		
		Theory (Teaching Hrs.)	Practicum (weeks)	Internal Assessment	External Exam.	Full Marks
PC-2	Philosophical Perspectives in Education	4(64 Hrs.)		30	70	100
RTS-5	Self Development	2(32 Hrs.)		15	35	50
TEC-1	Perspectives in Teacher Education	4(64 Hrs.)		30	70	100
PSS-2	Pedagogy of School Subjects-2.P.II	4(64 Hrs.)		30	70	100
SSC-1	School Education: Systems, Structures and Functions	4(64 Hrs.)		30	70	100
RTS Pr.-1	Dissertation		2 (64 Hrs.)	50	--	50
TEC-Pr	Attachment with TEIs (Elementary and Secondary TEIs)		4 (6 weeks)	100	--	100
Total		**18 (288Hrs.)**	**6**	**135+ 150**	**315**	**450+ 150**

SEMESTER- V (16 +8 CREDITS)

Course	Title	Credit (s)		Marks		
		Theory (Teaching Hrs.)	Practicum (Hrs,/weeks)	Internal Assessment	External Exam.	Full Marks
PC-7	Contemporary Concerns in Education	4(64 Hrs.)		30	70	100
RTS-2	Advanced Research Methods	4(64 Hrs.)		30	70	100
TS	Theme-based Specialization (a.P.I)	4(64 Hrs.)		30	70	100
	Theme-based Specialization (b.P.I)	4(64 Hrs.)		30	70	100
RTS Pr.-1	Dissertation		2 (64 Hrs.)	50	--	50
PSS-Pr.III	SI-III Classroom Transaction and related activity(Contd.)		4 (6 weeks)	100	--	100
TS Pr.1	Theme Area Practicum		2 (2 weeks)	50	--	50
	Total	**16 (256Hrs.)**	**8**	**120+ 200**	**280**	**400+ 200**

SEMESTER- VI (20 +4 CREDITS)

Course	Title	Credit (s)		Marks		
		Theory (Teaching Hrs.)	Practicum (Hrs,/ weeks)	Internal Assessment	External Exam.	Full Marks
TEC -2	Issues and Research in Teacher Education	4(64 Hrs.)		30	70	100
SSC -2	Emerging Issues in Elementary Education	4(64 Hrs.)		30	70	100
SSC -3	Emerging Issues in Secondary and Senior Secondary Education	4(64 Hrs.)		30	70	100
TS	Theme-based Specialization (a. P.II)	4(64 Hrs.)		30	70	100
	Theme-based Specialization (b. P.II)	4(64 Hrs.)		30	70	100
RTS Pr.-1	Dissertation		4 (64 Hrs.)	50	50	100
TS Pr.2	Theme Area Practicum		2 (2 weeks)	50	--	50
	Total	**20 (320 Hrs.)**	**4**	**150+ 100**	**350+ 50**	**500+ 150**

Assessment Criteria

The performance of the prospective teacher-educators in the course under the perspective courses, research tool courses, teacher education courses, specialization courses, internship and spreading over six semesters as detailed below.

Common Core Courses

- The performance of each prospective teacher-educator in each core course shall be assessed internally out of 30 marks and externally out of 70 marks.
- Sessional work in respect of each prospective teacher-educator shall be assessed internally out of 30 marks by the faculty member concerned both on the process and final product (report) and shall be awarded marks accordingly. The detailed criteria of assessment of the sessional work shall be spelt out by a committee of faculty members chosen by the head of the institution.

Specialization Courses

The performance of each prospective teacher-educator in the specialization course, opted by him / her shall be assessed both internally and externally out of 30 marks and 70 marks respectively in the manner as indicated above for the core courses.

Internship and Field Attachment

The performance of each prospective teacher-educator in this course shall be assessed internally by the faculty members (Mentors) under whom he / she is assigned the work.

Research Leading to Dissertation

The performance of each prospective teacher-educator in research-based activities in Semester III and IV shall be assessed internally out of 10 marks each. Such activities IV in second semester shall be assessed both internally out of 20 marks and externally out of 50 marks. The internal assessment of the research-based activities I, II and III in both the semesters shall be made through seminar presentations by the student-teachers. A panel of faculty/ experts shall assess their performance in the semester and award a consensus mark out of 10 to each student-teacher.

The internal assessment for RBA-IV (Final Report of the Dissertation) shall be made in the seminar presentation by a group of experts/ faculty and a consensus marks shall be awarded to the student-teacher out of 20. At this stage if any improvement in the dissertation is suggested by the expert group that can be incorporated before the final submission of the same for external assessment. The final dissertation shall be assessed externally through viva-voce in which a consensus mark out of 50 is given by the both internal and external examiners to the student-teacher concerned.

Practicum

The performance of each student-teacher in the Practicum I, II and III in the first semester shall be assessed internally out of 10 each. The faculty members concerned shall award marks to each student-teacher during his/her performance in demonstration, observation and teaching classes. The performance of each student teacher in Practicum-IV i.e. final teaching shall be assessed by the internal and external examiners both out of 50 and a consensus mark shall be awarded to each student-teacher on his/her performance. The assessment of records and other related materials of teaching practice shall be assessed internally out of 20 in respect of each student-teacher by the faculty members concerned.

Both internal and external marks shall be reflected in the final mark sheet of each student-teacher.

Proceeding of Teachers' Council held on 29.03.2018 at 1.00 PM

The teachers' council proposed a revision of existing syllabus (2013) of M.A. and M. Phil. To be placed before the ~~ensuing Board of Studies~~ Academic Committee next meeting.

Three of the members of the teachers' council are members of the Board of Studies for English (2018-19).

The Chairman of the Board of Studies shall give final shape to the revised syllabus by incorporating new texts as suggested:

M.A

Course No. Eng 411

Unit IV: John Dryden's *Absalom and Achitophel* in place of Alexander Pope's *The Rape of the Lock*

Course No. Eng 412

Unit IV: William Shakespeare's *Hamlet* in place of *King Lear*

Course No. Eng 413

Unit IV: Jonathan Swift's *Gulliver's Travels* in place of Sterne's *Tristram Shandy*

Course No. Eng 414

Unit IV: ~~Eliot: "Function of Criticism"~~

Course No. Eng 421

Unit II: Keats: "Bright Star" in place of "Ode on a Grecian Urn"

Unit IV: Christina Rossetti's *Goblin Market* in place of Robert Browning's poems

Course No. Eng 422

Unit III: Pirandello: *Six Characters in Search of an Author*

Course No. Eng 432

Unit III: Joseph Conrad's *Heart of Darkness* in place of Kingsley Amis' *Lucky Jim*

Course No. Eng 431

Unit III: Auden: "Look, Stranger, On this Island Now" in place of "In Memory of W. B. Yeats

Unit IV: Larkin: "Ambulances" in place of "Church Going"

M. Phil

Course No. Eng 611

Unit I: Tagore's "Nationalism in India" and M. K. Gandhi's *Hind Swaraj* in place of Rabindranath Tagore's *Nationalism*

Course No. Eng 612

Unit III: Stephen Greenblatt's "What is the History of Literature" in place of Issues and Problems in Literary History

Members Present:

Prof. A. K. Mohapatra (Chairman, BOS) 29.03.2018

Prof. R. S. Nanda

Prof. Sabita Tripathy 29.03.18

BOS

12/04/18

12/4/18

Sambalpur University
Syllabus for M.Phil. in English
Under Course Credit cum Semester System
With effect from 2018-19 session

The M.Phil. English Programme under Course Credit cum Semester System shall comprise 7 courses, spread over two semesters and carrying a total load of 40 credit hours. The first Semester shall consist of Core Courses and Elective Courses. Each course will carry a load of 4 credit hours. The second semester shall consist of two courses of which, the first course will be of 2 credit hours, and the second course will be of 18 credit hours. Each credit hour will consist of a minimum of 12 classes of 1 hour duration. Semester-wise distribution of courses is given below:

SEMESTER I

Eng 611- (**Core Course)** Nationalism and Literature (4 Credits)

Eng 612- **Elective A**: Textual Criticism & Theory of Literary History (4 Credits)

Elective B: Literature and Gender (4 Credits)

Elective C: Shakespearean Adaptations (4 Credits)

Eng 613- (**Core Course)** Research Methodology (4 Credits)

Eng 614- (**Core Course)** Essay (4 Credits)

Eng 615- (**Core Course)** Review of Research Papers (4 Credits)

SEMESTER II

Eng 621- Seminar (2 Credits)

Eng 622- Dissertation (18 Credits)

P.G. Department of English (Autonomous), Sambalpur University
Jyoti Vihar, Burla. Orissa 768009

Proceedings of the Academic Affairs Committee held on 28.07.2021 **at** 11.00 AM.

Members Present:

1. Head, Department of English
2. Prof. R. S. Nanda
3. Prof. A. K. Mohapatra
4. Dr. Aloka Patel
5. Dr. A. K. Kullu

Business Transacted:

1. M. A. Syllabus was revised as following

(i) The titles of the Courses and Units were revised
(ii) Recommended Readings to be included
(iii) Course No. 411, Unit-IV: *Absalom and Achitophel* to be replaced by shorter poems
(iv) Course no. 413, Unit-I: Aphra Behn to be included
Unit-IV- Jonathan Swift to be removed
(v) Course No. 414, Unit-IV: Virginia Woolf's essay to be replaced by William and Beardsley's "Intentional Fallacy'
(vi) Course no. 421, Unit-IV: Rossetti to be replaced by Elizabeth Barrett Browning
(vii) Course no. 422, Unit-III: Pirandello to be replaced by Osborne
(viii) Course no. 424, Unit-III: Cixous to be replaced by Judith Butler
(ix) Course no. 433: To be completely revised by Prof. A. K. Mohapatra
(x) Course no. 434 to be revised into two Units of 50 marks each. Unit-I to include Research Methodology; Unit-II on Computer Application and Project
(xi) Course no. 442 NBNE, Unit-IV: Ralph Ellison to be replaced by Alice Walker's *Color Purple*
(xii) Two new Modules on English Literary Essay and World Literature to be added

Signatures:

1. Head, Department of English (Prof. Sabita Tripathy) 28.7.2021
2. Prof. R. S. Nanda 28.7.21
3. Prof. A. K. Mohapatra 28.7.2021
4. Dr. Aloka Patel 28/07/2021
5. Dr. A. K. Kullu

P G Department of English, Sambalpur University

Syllabus for M.A. in English

Under Course Credit cum Semester System

With effect from 2021-22 session

Pedagogy

The MA Programme under Course Credit cum Semester System shall comprise 16 Courses, spread over four semesters and carrying a total load of 80 credit hours. The first three Semesters shall consist of Core Courses, and the fourth Semester shall cover Elective Courses. Each course will carry a load of 5 credit hours. Each credit hour will consist of a minimum of 12 classes of 1 hour duration each.

The learning and teaching method for *Each Semester* will include:

- Lectures (Blended): 4 hours per day
- Seminars: 4 hours per week
- Audio Visual Classes/ Workshops: 2 hours per week
- Self-Study/ Library/ Laboratory: 5 hours per week

Evaluation Pattern

Assessment will be made on the basis of

1. External evaluation
2. Internal Assessment in the form of
   i. Assignments and Presentations
   ii. Seminars
   iii. Class Tests
   iv. Projects

Semester-wise distribution of courses is given below:

CORE COURSES

SEMESTER I

Eng 411- English Poetry I
Eng 412- English Drama I
Eng 413- English Novel I
Eng 414- Literary Theory and Criticism till 1940s

SEMESTER II

Eng 421- English Poetry II
Eng 422- English Drama II
Eng 423- English Novel II
Eng 424 – Contemporary Theory

Semester III

Eng 431- English Poetry III
Eng 432- English Novel III
Eng 433- Contemporary Novel
Eng 434- Research Methodology and Computer Application in Literary Studies

ELECTIVE COURSES

Semester IV

This Semester shall comprise Elective Courses (Eng 441 to 444) in four separate Modules carrying a credit load of 16 credit hours in each module. Students will be allowed to take any one of the modules on the basis of their i) Preference and ii) Merit in the MA Entrance test. The Department would notify the available Modules for exercising option. They have to submit their preference a week before the Registration for Semester III. Each of the available modules will have equal number of students ordinarily.

The four Elective Modules are:

Elective Module A: *Comparative Literature and Translation Studies*
Elective Module B: *Non-British Novels in English*
Elective Module C: *Indian Writing in English and Indian Literature in English Translation*
Elective Module D: *Special Topics*
Eng 441 Modules A, B, C & D
Eng 442 Modules A, B, C & D
Eng 443 Modules A, B, C & D
Eng 444 Modules A, B, C & D

SEMESTER-I

Course No: Eng 411
Course Title: English Poetry I
Credit Load: 5 credit hours
Course Objectives: This paper covers English Poetry of Early Modernity. It aims to familiarize students with

- English poetry of different forms written during the Early Modern period.
- The cultural contexts that have informed such writings.
- Literary reinventions of later ages, and influences on later writers.

Course Content:

Unit I: Chaucer: "Prologue to *The Canterbury Tales*"
Unit II: Spenser: *Faerie Queene* (Book I)
Unit III: Milton: *Paradise Lost* (Books I & II)
Unit IV: Early Modern Women Poets:
Sarah Fyge Egerton "At My Leaving Cambridge, August the 14th, Extempore";
Lady Mary Wortley Montagu: "Saturday, The Small-Pox, Flavia";
Margaret Cavendish: "Earth's Complaint",
Anne Finch: "The Answer (To Pope's Impromptu)"

Recommended Readings:

1. Bibhash Choudhury: *English Social and Cultural History*
2. Philip Sidney: "An Apology for poetry"
3. E M W Tillyard: *The English Epic and its Background*
4. Gary F. Waller: *English Poetry of the Sixteenth Century*

Course Learning Outcome (CLO): At the end of the course students will be familiar with English poetry of different forms written during the Early Modern period. They will be able to understand
CLO1. The influence of contemporary philosophies on the early poetic forms.
CLO2. The social and political concerns of writers of the age, and their relevance to us today.
CLO3. Distinguish between the social and political concerns of the female and the male poets of the period.
CLO4. Later developments in poetic diction and style.

Scheme of Examination:

The units shall carry a total of 100 marks, out of which 20 marks shall be by way of internal assessment in the form of written test and seminar/home assignment. The written test will be 60 minutes duration. The semester-end university examination shall be of 3 hours duration, carrying 80 marks.

Division of Marks: (For semester-end university examination)

a) Four long- answer type questions(to be answered in 1000 words each), one each from the 4 units with alternatives : **16x 4 = 64**

M.Sc. in Food Science & Nutrition

SYLLABUS (2018-19)

P.G. DEPARTMENT OF FOOD SCIENCE
TECHNOLOGY AND NUTRITION
SAMBALPUR UNIVERSITY
JYOTI VIHAR
BURLA

Chairman/Head | Co-ordinator | P.K.Naik | S.Parida | A.Priyadarshini

(Approved)
20/3/18
Vice-Chancellor

Courses of Studies for the M. Sc Food Science & Nutrition Examination
(Under Course Credit Semester System)
Effective from First Semester Examination, 2018-19

1st Semester		
Course No.	Title	Credit Hour
FSN. 411	Food Commodities	4 (Theory)
FSN. 412	Food Microbiology,Hygiene and Sanitation	4 (Theory)
FSN. 413	Nutritional Biochemistry	4 (Theory)
FSN. 414	Basic Concepts of Nutrition	4 (Theory)
FSN. 415	Practical related to 411&412	4 (Practical)
FSN. 416	Practical related to 413&414	4 (Practical)
	Total	24

IInd Semester		
Course No.	Title	Credit Hour
FSN. 421	Food ingredients and Neutraceuticals	4 (Theory)
FSN. 422	Food Analysis	4 (Theory)
FSN. 423	Food Quality and Packaging	4 (Theory)
FSN. 424	Advanced Human Physiology New Course	4 (Theory)
FSN. 425	Practical related to all the theory papers	4 (Practical)
FSN. 426	Summer Internship	2
	Total	22

IIIrd Semester		
Course No.	Title	Credit Hour
FSN. 511	Therapeutic Nutrition New Course	4 (Theory)
FSN. 512	Genetics and Food Biotechnology	4 (Theory)
FSN. 513	Research Methodology and Biostatistics	4 (Theory)
FSN 514	Elective Paper (any one) New Course	4 (Theory)
	a. Community Health Management	
	b. Public Health Nutrition	
	c. Institutional Food Management	
	d. Food Processing and Preservation	
FSN 515	Practical Diet Therapy	4 (Practical)
FSN. 516	Seminar-I	3
	Total	**23**

IVth Semester		
Course No.	Title	Credit Hour
FSN. 521	Term Paper/Review Paper	2
FSN 522	Final Dissertation & Viva-voice	12+2
FSN. 523	Seminar-II	3
FSN. 524	Industrial Tour Report	2
	Total	**21**

Instruction to Paper Setters

1.In theory papers questions will be set unit-wise with 2 questions from each unit (total 8 questions).The students shall answer any one question from each unit.

2.60% of the questions shall be long-answered type and 40% short-answered type

Co-ordinator **P.K.Naik** **S.Panda** **A.Priyadarshini**

(4)

SAMBALPUR UNIVERSITY:JYOTI VIHAR:BURLA
SAMBALPUR, ODISHA-768019

Proceedings of the meeting of the Board of Studies in Home Science

Held at 12.00 on date 27.02.2018 in the Administrative Building of the University.

MEMBER PRESENT:-

1. Dr Chandrashree Lenka.
2. Dr Sivananda Naik
3. Basanti Pradhan
4. Dr. P.K. Behera.
5.
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12.

BUSINESS TRANSACTED:-

1. Sri/Dr/~~Prof~~ Chandrashree Lenka (Dean/Add.) HOD, PG. Department of Home Science has been elected as the Chairman of the Board for the current academic session 2017-18.
2. Recommended the lists of Examiners, Paper Setters, Moderators and members of the Conducting Board for the following Examinations separately.
   i) All relevant examinations to be held during 2018-19
   ii)
   iii)
   iv)
   v)

3. Recommended the list of Indian and Foreign Examiners for evaluating of Ph.D. Thesis of the following candidates separately.
   1. Mrs. Debasmita Barik
   2.
   3.
   4.
   5.
   6.
   7.
   8.
   9.
   10.

(During consideration of examiners in respect of Sl. No._____
Sri/Dr._____
_____
_____
respectively remained absent in the meeting)

P.T.O.

4. Recommended no change/minor change/in the ***Syllabus, Revised Syllabus*** for the following examinations as in appendix_____enclosed.

1- Recommended Revised U.G. Syllabus as in Appendix- A

2- Recommended revised P.G. Syllabus as in Appendix- B

3- Recommended revised M.Phil. Syllabus as in Appendix - C

4- Recommended Syllabus for new course title M.A./MSC

5 ~~Recommended the following modification /amendments in the regulation for~~ _____ ~~Examinations.~~

Home science (Food and Nutrition) as in Appendix - D

Course will be regulated as per existing P.G. regulation

Appendices will be submitted by the Chairman after checking of the typological error.

6. Other recommendations , if any.

SIGNATURE OF THE MEMBERS PRESENTS.

Rebeca 12/3/18

27.3.18

27.3.18

27.3.18

M.A/M.Sc in Home Science

(Food & Nutrition)

SYLLABUS (2018-20)

P.G. DEPARTMENT OF HOME SCIENCE

SAMBALPUR UNIVERSITY

JYOTI VIHAR

Courses of Studies for the M.A/ M.Sc Home Science (Food & Nutrition)

Examination(Under Course Credit Semester System)Effective from First Semester Examination, 2018-20

1st Semester		
Course No.	**Title**	**Credit Hour**
HSC. 411	**Research Methodology**	**4 (Theory)**
HSC. 412	**Advance Food Science & Nutrition**	**4 (Theory)**
HSC. 413	**Nutrition through life cycle**	**4 (Theory)**
HSC. 414	**Environmental Management**	**4 (Theory)**
HSC. 415	**Practical related to 411&412**	**2 (Practical)**
HSC. 416	**Practical related to 413&414**	**2 (Practical)**
	Total	**20**
IInd Semester		
Course No.	**Title**	**Credit Hour**
HSC. 421	**Institutional Food Management**	**4 (Theory)**
HSC. 422	**Statistics &Computer Application**	**4 (Theory)**
HSC. 423	**Guidance & Counselling**	**4 (Theory)**
HSC. 424	**Nutrition Communication for Health promotion**	**4 (Theory)**
HSC. 425	**Practical related to all the theory papers**	**3 (Practical)**
HSC. 426	**Writing of Term Paper & Seminar**	**1**
	Total	**20**
IIIrd Semester		
Course No.	**Title**	**Credit Hour**
HSC. 511	**Therapeutic Nutrition**	**4 (Theory)**
HSC. 512	**Nutritional Biochemistry**	**4 (Theory)**
HSC. 513	**Food Microbiology & Food safety**	**4 (Theory)**
HSC. 514	**Programme Planning in Public Health Nutrition**	**4 (Theory)**
HSC. 515	**Practical related to all the theory papers**	**2 (Practical)**
HSC. 516	**Dissertation (Writing of Synopsis & Field Work)**	**2**
	Presentation through a seminar (to be completed in IVth Semester)	
	Total	**20**
IVth Semester(A candidate has to select any three elective theory papers)		
Course No.	**Title**	**Credit Hour**
HSC. 521	**Public Health Nutrition**	**4 (Theory elective)**
HSC 522	**Public Health Aspect of Malnutrition**	**4 (Theory elective)**
HSC. 523	**Advance Clinical nutrition**	**4 (Theory elective)**
HSC. 524	**Entrepreneurship in Food Service**	**4 (Theory elective)**
HSC 525	**Food Processing**	**4 (Theory elective)**
HSC. 526	**Seminar**	**6**
HSC 527	**Dissertation**	**2**
	Total	**20**

Instruction to Paper Setters

1. In theory papers questions will be set unit-wise with 2 questions from each unit (total 8 questions).The students shall answer any one question from each unit.

2.60% of the questions shall be long-answered type and 40% short-answered type

SAMBALPUR UNIVERSITY

JYOTI VIHAR, BURLA, Sambalpur, (Odisha) India, PIN- 768 019

No 2081 / Acd-I Dated the 11/03/17

From,

The Registrar,

To

All Members of the Academic Council,
Sambalpur University.

Sub:- Agenda for the meeting of the Academic Council to be held on 08.04.2017.

Ref;- Letter No. 1009/ Acd-I, Dated 07.02.2017.

Sir/ Madam,

In inviting a subject and reference cited above, I am directed to forward herewith the agenda for the meeting of the Academic Council to be held on 08.04.2017 at 10.00A.M. **in the Seminar Hall of the P.G. Department of Physics**, Sambalpur University, Jyoti Vihar, Burla.

Any member wishing to move an amendment to the resolution on the Agenda may forward a copy of it to the undersigned not less than nine clear days before 08.04.2017 i.e. **30.03.2017** in terms of the Statute 30(i) of Orissa Universities First Statute,1990.

I would, therefore, request you kindly to make it convenient to attend the above said meeting on 08.04.2017. Kindly bring along with your own copy of the agenda papers.

Yours faithfully

Registrar 10/3/17

Memo No. 2082 ~~Acd-I~~ ***Dated the*** 11/03/17

Copy forwarded to:-

1. All Officers, Sambalpur University.
2. All the Section Officers, Sambalpur University.
3. All Heads of P.G. Department, Sambalpur University.
4. The Secretary to the Vice-Chancellor/P.A. to the Registrar/P.A. to the Controller of Examinations/P.A. to Comptroller of Finance, Sambalpur University.
5. The Director, College Development Council/Coordinator, Private Examination Cell/Director, D.D.C.E, Sambalpur University.
6. 50 spare copies to Acd-I Section.

Registrar 10/3/17

(1) ***Prof. Pradipta Kumar Behera*** to move on behalf of the Boards of Studies:

That the Academic Council do consider and approve the recommendations of the Board of Studies for academic session 2016-17 in approving changes / revision of syllabi etc. as stated below:-

a. Under Graduate Syllabus under CBCS effective from the academic session 2016-17, which has been approved by the Vice Chancellor in exercise of his powers vested under Sub Section (15) of Section 6 of Odisha Universities Act, 1989 will be effective for academic session 2017-18.

b. **Library & Information Science** – Board of Studies in **Library & Information Science** for 2016- 17 has recommended revised ***syllabus for Two year Master Degree Course*** **Library & Information Science** to be effective from the academic session 2017-18. Recommended Syllabus as in ***Appendix- E-1***

c. **Social Work** – Board of Studies in **Social Work** for 2016- 17 has recommended revised ***syllabus for Ph. D. Course Work in Social Work*** to be effective from the academic session 2017-18. Recommended Syllabus as in ***Appendix- E-2***

d. **Geology** – Board of Studies in **Geology** for 2016- 17 has recommended question pattern for theory examinations for Under Graduate Courses under CBCS. Recommended pattern as in ***Appendix- E-3***

(F) Business brought forward by the Members of Academic Council

NIL

Registrar 9/3/17

Approved

09.3.17

Vice-Chancellor

SYLLABUS FOR

MASTER IN LIBRARY & INFORMATION SCIENCE
(MLIS COURSE)

WITH

SEMESTER-CUM-COURSE CREDIT SYSTEM

W.E.F 2017-2018 SESSION

P. G. DEPARTMENT OF LIBRARY & INFORMATION SCIENCE
SAMBALPUR UNIVERSITY
JYOTI VIHAR, BURLA-768019
Website: http://www.suniv.ac.in

SYLLABUS OF
TWO-YEAR MASTER IN LIBRARY & INFORMATION SCIENCE (MLISC) COURSE UNDER SEMESTER-CUM- COURSE CREDIT SYSTEM

w.e.f. 01.08.2017 (2017-18 Sessions)

(REVISED)

The MLISC Programme under Semester-cum-Course Credit System shall comprise of 24 numbers of papers/courses spread over FOUR semesters and carrying a total credit load of 80 Credit Hours. Each Theory paper/course and practical paper shall carry a load of 4 and 2 credits respectively. Each credit hour shall consist of 12 classes of one hour duration. Semester-wise distributions of the courses along with their respective titles are given here under:

FIRST SEMESTER

Course No.	Course Title	Credit Hours	University Exam.	Internal Assessment/ Periodic test	Home Assign ment	Full Mark/ Total
MLIS-411	Foundation of Library and Information Science	4	80	10	10	100
MLIS-412	Knowledge Organisation (Classification)	4	80	10	10	100
MLIS-413	Knowledge Organisation (Cataloguing)	4	80	10	10	100
MLIS-414	Information Sources, Systems and Services	4	80	10	10	100
MLIS-415-A	Knowledge Organisation (Classification) Practical	2	50	-	-	50
MLIS-415-B	Knowledge Organisation (Cataloguing) Practical	2	50	-	-	50
MLIS-416	Seminar-I (Write up 25, Presentation 25)	2	50	-	-	50

SECOND SEMESTER

Course No.	Course Title	Credit Hours	University Exam.	Internal Assessment/ Periodic test	Home Assign ment	Full Mark/ Total
MLIS-417	ICT and Library Automation	4	80	10	10	100
MLIS-418	Information Storage and Retrieval	4	80	10	10	100
MLIS-419	Search Tools and Techniques	4	80	10	10	100
MLIS-420	Information Needs and Seeking Behaviour	4	80	10	10	100
MLIS-421	ICT and Library Automation Practical	2	100	-	-	100
MLIS-422	Seminar-II (Write up 25, Presentation 25)	2	50	-	-	50

THIRD SEMESTER

Course No.	Course Title	Credit Hours	University Exam.	Internal Assessment/ Periodic test	Home Assign ment	Full Mark/ Total
MLIS-423	Management of Libraries and Information Centres	4	80	10	10	100
MLIS-424	Research Methodology and Bibliometrics	4	80	10	10	100
MLIS-425	Internet and Web Resources	4	80	10	10	100
MLIS-426	Digital Library and Information Systems	4	80	10	10	100
MLIS-427	Digital Library and Web Tools Practical	2	100	-	-	100
MLIS-428	Seminar-III (Write-up-25 and Presentation- 25)	2	50	-	-	50

FOURTH SEMESTER

Course No.	Course Title	Credit Hours	Universit y Exam.	Internal Assessment/ Periodic test	Home Assign ment	Full Mark/ Total
MLIS-429	Preservation and Conservation of Library Resources	4	80	10	10	100
Elective Paper						
MLIS-430A	Electronic Resource Management	4	80	10	10	100
	OR					
MLIS-430B	Marketing of Information and Knowledge Management	4	80	10	10	100
MLIS-431	Effective Communication Skill	2	40	5	5	50
MLIS-432	Project (Project evaluation 75 marks + Viva-voce 25 Marks) to be evaluated jointly by the Internal and the External Examiners	6	100	-	-	100
MLIS-433	Study Tour	2	50	-	-	50
Total Papers = 24 Total Credits = 80 Total Marks = 2050						

Proceedings of the Meeting of the Academic Council held on 08/04/2017 at 11.00 AM

1) Prof. ChitaranjanTripathy — In the chair
Vice-Chancellor, Sambalpur University.

2) Chairman, P.G.Council,
Sambalpur University.

3) Dr. Pratap Chandra Tripathy
Head of the Business Administration
Sambalpur University

5) Dr Chandra Sekhar Panda
Head of the P.G. Department of
Computer Application,
Sambalpur University

6) Prof. Pradipta Kumar Behera
Head of the P.G. Department of Chemistry,
Sambalpur University

7) Dr.(Mrs.) Sanjukata Das
Head of the P.G. Department of
Economics, Sambalpur University

8) Dr. Ekamber Kariali
Head, School of Life Sciences,
Sambalpur University

9) Dr. D.P. Ojha,
Head of the P.G. Department of Physics,
Sambalpur University

10) Dr. Krushna Chandra Pradhan,
Head of the P.G.Department Of Odia,
Sambalpur University.

11) Dr. S.R. Mohapatra,
Head of the P.G. Department Of Law,
Sambalpur University.

12) Prof. Sanjat Kumar Sahu
Head of the P.G. Department Of
Environmental Science, Sambalpur University.

13) Head of the P.G. Department of
Home Science, Sambalpur University

(10) *Dr.E.Kariali* on behalf of the Vice Chancellor moved the Academic Council to consider and approve adoption of the Courses of Studies for i)MSc (Biotechnology), ii)MSc (Bioinformatics) and iii) MPhil (Biotechnology)

Prof.P.K.Naik seconded the motion.

RESOLVED that the Courses of Studiesof the above Courses be approved.

(11) *Chairman, PG Council* on behalf of the Vice Chancellor moved the Academic Council to consider and approve the syllabus of MSc in Medical Physics to be run in the PG Department of Physics on self-financing mode from the academic session 2017-18.

Prof.P.K.Naik seconded the motion.

RESOLVED that the Syllabus of the above Course be approved.

(12) *Chairman, PG Council* on behalf of the Vice Chancellor moved the Academic Council to consider and approve the syllabus of MSc in Microbiology to be run in the PG Department of Life Sciences on self-financing mode from the academic session 2017-18.

Prof.P.K.Naik seconded the motion.

RESOLVED that this be approved.

(13) *Chairman, PG Council* on behalf of the Vice Chancellor moved the Academic Council to consider and approve the syllabus of MSc in Nano Science & Technology to be run under the Centre of Nano Technology on self-financing mode from the academic session 2017-18.

Prof.P.K.Naik seconded the motion.

RESOLVED that this be approved.

(14) *Chairman, PG Council* on behalf of the Vice Chancellor moved the Academic Council to consider and approve the syllabus of Agri-Business Management to be run in the PG Department of Business Administration on self-financing mode from the academic session 2017-18.

Prof.P.K.Naik seconded the motion.

RESOLVED that this be approved.

(15) *Chairman, PG Council* on behalf of the Vice Chancellor moved the Academic Council to consider the syllabus of PG in Environmental Sciences course as per directive of Special Secretary to Govt., Dept.of Higher Education, Odisha to be run in the PG Department of Environmental Sciences on self-financing mode from the academic session 2017-18.

Prof.P.K.Naik seconded the motion.
RESOLVED that this be approved.

1. M.Sc. IN MICROBIOLOGY

IN THE SCHOOL OF LIFE SCIENCES (AUTONOMOUS)

1. ELIGIBILITY CRITERIA: The candidate should have passed a Bachelor Degree under 10+2+3 pattern of education in Science with any of the subjects i.e. Microbiology, Biochemistry, Biotechnology, Genetics, Molecular Biology, Botany or Zoology or M.B.B.S./B.D.S/B.Sc (Ag)/B.V.Sc from any Institute/ University recognized by the Sambalpur University/ University Grant Commission, New Delhi. Any Science graduate with biology as a subject at 10+2 level are also eligible for the M.Sc. Microbiology Course.

2. SELECTION CRITERIA:

As per general selection criteria of Sambalpur University

Formula for calculating career mark

Category I (Science graduates)

H.S.C.E.	lst Div.-6	2nd Div.-4.5	3rd Div./Pass-3
+2	lst Div.-9	2nd Div.-7	3rd Div./Pass-5
+3 (Hons)	Ist Div.-13	2nd Div.-10	Distn.-2
+3 (Pass)	7		Distn.-2

Category **II** (Graduates in Medical and other Professional courses)

H.S.C.E.	lst Div.-6	2nd Div.-4.5	3rd Div./Pass-3
+2	1st Div.-9	2nd Div.-7	3rd Div./Pass-5

Graduation: (Marks Secured in Percentage)

"Total Marks Secured/Maximum Marks X I00"

75% and above= 15

60% and above but less than 75% = 12

45% and above but less than 60% = I0

All other eligible candidates = 08

3. DURATION OF THE COURSE: 2 YEARS

4. NUMBER OF SEATS: 16 (Sixteen)

5. FEE STRUCTURE:

(a) Course Fee: **Rs. 25,000/- per semester** (Besides the course fee, a candidate admitted to the programme shall pay other fees as prescribed in the prospectus at Clause. 12).

(b)Infrastructure Development Fee: Rs. 5000/- per semester

6. COURSE STRUCTURE:

Course	Course Title	Credit hours	Marks
	SEMESTER- I		
MB-411 (A or B)	(A) Fundamentals of Physical Sciences (B) Fundamentals of Biological Sciences	3 CH	50
MB -412	Biochemistry	3 CH	50
MB -413	Biophysics and Biophysical Chemistry	3 CH	50
MB -414	Bacteriology	3 CH	50
MB -415	Molecular Biology	3 CH	50
MB -416	Instrumentation and Techniques	3 CH	50
MB -417	Practical (Biochemistry and Instrumentation)	2 CH	50
MB -418	Practical (Bacteriology)	2 CH	50
	SEMESTER- II		
MB -421	Virology	3 CH	50
MB -422	Cell Biology	3 CH	50
MB -423	Immunology	3 CH	50
MB -424	Genetics	3 CH	50
MB -425	Biostatistics	3 CH	50
MB -426	Microbial Diversity and Extremophile	3 CH	50
MB -427	Practical (Cell Biology and Biostatistics)	2 CH	50
MB -428	Practical (Genetics, Immunology and Virology)	2 CH	50
	SEMESTER- III		
MB -531	Microbial Physiology	3 CH	50
MB -532	Microbial Genetics	3 CH	50
MB -533	Food Microbiology	3 CH	50
MB -534	Applied and Industrial Microbiology	3 CH	50
MB -535	Fundamentals of Microbial Infection and Diseases	3 CH	50
MB -536	Mycology and Phycology	3 CH	50
MB -537	Practical Related to MB-531, MB -532 and MB -533	2 CH	50
MB -538	Practical related to MB -534 and MB -535	2 CH	50
MB -539	Industrial Visit and Report Submission / Term paper	2 CH	50
	SEMESTER- IV		
MB -541	Environmental Microbiology	3 CH	50
MB -542	Medical and Diagnostic Microbiology	3 CH	50
MB -543	Microbial Technology	3 CH	50
MB -544	Microbial Genomics and Proteomics	3 CH	50
MB -545	Seminar	2 CH	50
MB -546	Project Work and Viva-voce	(6+2) CH	200
Total Course Credit		**90 CH**	**1700**

PROCEEDINGS OF ACADEMIC COMMITTEE MEETING HELD ON DT 26.02.2019

Members Present

1. Prof.J.Patel , Utkal University, External Member, Retd Professor Utkal University.
2. Prof.G.K.Panda, External Member, NIT, Rourkela.
3. Prof.P.K.Ray
4. Dr.Mrs. Sabita Sahoo
5. Dr.Nihar Ranjan Satapathy
6. Dr.Arun Kumar Tripathy
7. Dr.Priyabrat Gochhayat
8. Dr.Mrs.Bijaya Laxmi Panigrahi.

1. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
2. xxxxxxxxxxxxxxxxxxxxxx
3. The structure of the course for MA/M.Sc, M.Phil 2019-21 and 2019 respectively are discussed and passed .
   The following course structure for MA/M.Sc Mathematics program in view of the CBCS syllabus in 2017 in undergraduate program was passed after discussion.

COURSE STRUCTURE

FOR M.A./M.SC. MATHEMATICS(Autonomous) PROGRAM, 2019-21

	Semester-I	
M-511	Real Analysis	4 Credits
M-512	Complex Analysis	4 Credits
M-513	Algebra-1	4 Credits
M-514	Python language	4 Credits
M-515	Topology	4 Credits
M-516	Programming Laboratory-1 (Python)	2 Credits
	TOTAL	**22 Credits**
	Semester-II	
M-521	Measure Theory and Integration	4 Credits

Head
Dept. of Mathematics
Sambalpur University
Jyoti Vihar-768019

M-522	Ordinary Differential Equations	4 Credits
M-523	Algebra-II	4 Credits
M-524	Differential Geometry	4 Credits
M-525	Mathematical Methods	4 Credits
M-526	Programming Laboratory-II (MATLAB)	2 Credits
	TOTAL	**22 Credits**
	Semester-III	
M-531	Functional Analysis	4 Credits
M-532	Partial Differential Equations	4 Credits
M-533	Number Theory & foundation of Cryptography	4 Credits
M-53E*	Elective-1	4 Credits
M-53E*	Elective-2	4 Credits
M-534	Programming Laboratory-III (MATLAB)	2 Credits
	TOTAL	**22 Credits**
	Semester-IV	
M-541	Optimization Technique	4 Credits
M-542	Probability and modelling	4 Credits
M-54E*	Elective-3	4 Credits
M-54E*	Elective-4	4 Credits
M-54E*	Elective-5	4 Credits
M-543	Project/dissertation (With Viva voce)	4 Credits
	TOTAL	**24 Credits**
	GRAND TOTAL	**90 Credits**

*The electives number will be chosen from the list given in the schedule A. The electives are chosen in such a way that they are not repeated .

LIST OF ELECTIVES

SCHEDULE = A

(Each Elective is of 4 Credits)

The Department will offer Electives in Semester-III and Semester-IV from the following list avoiding repetitions.

1. ANALYTICAL NUMBER THEORY
2. ALGEBRAIC TOPOLOGY
3. ADVANCED COMPLEX ANALYSIS
4. ADVANCED LINEAR ALGEBRA
5. APPLIED STATISTICAL METHODS

6. ALGEBRAIC GEOMETRY
7. COMBINATORICS
8. COMPUTER AIDED GEOMETRIC DESIGN
9. CRYPTOGRAPHY
10. DATA STRUCTURE
11. DATA BASE MANAGEMENT
12. DATA ANALYTICS-I
13. DATA ANALYTICS=II
14. DISCRETE DYNAMICAL SYSTEMS
15. FOURIER ANALYSIS
16. GRAPH THEORY
17. MECHANICS
18. MATHEMATICAL MODELLING
19. METHODS IN SCINTIFIC COMPUTING
20. NON LINEAR PARTIAL DIFFERENTIAL EQUATION
21. OPERATOR THEORY
22. OPTIMISATION TECHNIQUES-II
23. QUEUEING THEORY
24. STOCHASTIC MODELLING
25. THEORY OF COMPUTATIONS
26. WAVELET ANALYSIS
27. GEOMETRIC FUNCTION THEORY

However if necessary and as per the availability of expertise the teacher council can frame a it and it new course and offer will be ratified in the next academic committee

The course in Analytic Number Theory from the List of Elective was revised in view of the introduction of Number Theory core course in Semester III. The syllabus of Algebra I and Algebra II ,Ordinary differential equations,Optimisation Techniques, Partial differential equation,Probability and modeling were thoroughly revised.New syllabus for Python programming, Number theory and foundation of cryptography was also discussed and passed. Teacher council was authorized to frame the newly introduced computer courses in consultation with SUIIT faculty members.

Agenda4 xxxxxxxxxxxxxxxxxxxxxxxx

-sd/-	-sd/-	-sd/-	-sd/-
Prof.J.Patel	Prof.G.K.Panda	Prof.P.K.Ray	Dr.Mrs.S.Sahoo
-sd/-	-sd/-	-sd/-	-sd/-
Dr.N.R.Satapathy	Dr.P.Gochhayat	Dr.Mrs.B.L.Panigrahi	Dr.A.K.Tripathy

Head 22/9/22
ept of Mathematics

Head
Dept. of Mathematics
Sambalpur University
Jyoti Vihar-768019

Controller of Examinations
SAMBALPUR UNIVERSITY
JYOTI VIHAR, BURLA,
Sambalpur, Odisha, India.
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No. 4207 / Acd.-I Dated: 06/07/19

To

The H.O.D.,
P.G. Department of Sociology,
Sambalpur University, Jyoti Vihar .

Sub: **Approval of revised syllabus M.A. in Sociology.**

Sir,

I am directed to intimate you that the Vice- Chancellor has been pleased to approve the revised/ modified syllabus for **M.A. in Sociology under 6 (15) of O.U. Act – 1989 giving it effect from the academic session 2018-19 with condition to be placed it before the Board of Studies / Academic Council for ratification. A copy of the said syllabus is enclosed herewith for all concerned.**

This may be notified and be made available to the teachers and students concerned of your college/ department/ institution. You are further requested to ensure teaching of the courses accordingly. ***Any error and omission etc.*** may kindly be intimated to the undersigned.

This is for your information and necessary action.

Yours faithfully

Encl:- As above.

6/7/19

Controller of Examinations

New Revised Syllabus. (22

P.G. *SOCIOLOGY SYLLABUS* UNDER CHOICE BASED CREDIT SYSTEMFOR TEACHING AND EXAMINATION EFFECTIVE FROM 2018-19

1. M.A. Examination in Sociology shall be conducted in four semesters totaling to 80 credit hours.
2. Two types of paper are offered – one is Core (C), and the second is Elective (E). In the beginning of 2nd Semester, the students shall have to opt one of the Elective papers, out of the Elective papers offered. The selection into the Elective papers shall be on the basis of position in the merit list of EntranceTest and the students shall be allotted equally among the Elective papers. In the 3rdand 4thsemesters, the student shall continue in the same Elective paper.
3. The total marks in each paper shall be 100, out of which 20 percent of the total marks i.e. 20 marks shall be of Internal Assessment (10 marks written periodical test and another 10 marks home assignment) and the rest 80 percent of total marks i.e. 80 marks shall be of Semester Examination.
4. The paper setter shall set the questions of the semester examination of 80 marks. There shall be two questions from each unit with an option to the candidate to answer one question.
5. The paper Nos. Soc. C-513, Soc. E-516, Soc. C- 523 and Soc. E-524 and Soc.E-525 shall have the Internal Evaluation. These papers do not require paper setting by External Paper Setters.
6. For the Paper No. Soc. E- 526 (A, B & C) (Dissertation and Viva) Elective paper based External Examiners be appointed for evaluation. This paper does not require paper setting by External Examiner.

The detailed Course Structure Semester wise w.e.f Academic Session 2018-19 is mentioned below.

Sl. No.	Paper No.	Title	Credi Hours
A. FIRST SEMESTER:			
	SOC.C-411	Sociological Thought-I	4
1.			
2.	SOC.C-412	Corporate Social Responsibility	4
3.	SOC.C-413	Methodology in Social Research	4
4.	SOC.C-414	Sociology of Development	4
5.	SOC.C-415	Gender and Society	4
B. SECOND SEMESTER			
6.	SOC.C-421	Sociological Thought-II	4
7.	SOC.C-422	Sociology of Kinship, Marriage and Family	4
8.	SOC.C-423	Quantitative Research Techniques in Sociology	4
9.	SOC.C-424	Social Change in India	4
10.	SOC.E-425(A)	Rural Sociology-I	4
	SOC.E-425(B)	Sociology of Environment-I	
	SOC.E-425(C)	Medical Sociology -I	4
C. THIRD SEMESTER			
11.	SOC.C-511	Theoretical Perspectives in Sociology	4
12.	SOC.C-512	Sociology of NGOs	4
13.	SOC.C-513	Seminar	2
14	SOC.C-514	Sociology of Marginalized Communities	4
15.	Soc.E-515(A)	Rural Sociology-II	
	SOC.E-515 (B)	Sociology of Environment-II	4
	SOC.E-515 (C)	Medical Sociology -II	4
16.	SOC.E-516(A,B& C)	Project Work	2
D.FOURTH SEMESTER			
17	SOC.C-521	Advanced Sociological Theory	4
18.	SOC.C-522	Theoretical Perspectives in Indian Sociology	4
19	SOC.C-523	Seminar	2
20.	SOC.E-524 (A,B &C)	Book Review	2
21	SOC.E-525 (A,B & C)	Fieldwork	4
22.	SOC.E-526 (A, B & C)	Dissertation and Viva	4

1:0 Proceeding of the AC meeting held on 28.6.2018 at 11.30 am in the PG. Dept. of Statistics Utkal University.

Members present-

1. Dr G.K. Sahu, Reader Statistics, SU
2. Dr M. Pattnaik, Reader and Head Statistics, SU
3. Dr M. Khetan, Asst prof Statistics, SU
4. Prof L.N. Sahoo, Prof, Utkal University

Business Transacted

1. Conformed the proceeding of AC meeting held on 9.4.2018.

2. Consider and passed the result of 3rd sem Exams, Dec-2017 and 4th sem Exams, May 2018 (2016-18 batch) of M.A/M.Sc Statistics and Final M.A/M.Sc Statistics Exams-2018 as placed by the teacher-in-charge Examinations.

3. Resolved that the courses of study for M.A/M.Sc Statistics for the batch 2018-20 as revised in Appendix-A is recommended.

4. Resolved that Dr M. Pattnaik be nominated as teacher in-charge of Examination of the Dept of Statistics with effect from 28.6.2018. Dr M. Khetan be nominated as Asst teacher-in-charge Exams.

Manalisha Pattnaik
28/6/2018.

Mukti Khetan
28.6.2018

28/6/18

28.6.18

COURSES OF STUDY
MA/M.Sc. STATISTICS
(2018-2020)

POST GRADUATE DEPARTMENT OF STATISTICS (AUTONOMOUS)
SAMBALPUR UNIVERSITY, JYOTI VIHAR
BURLA- 768019, ODISHA

OUTLINE OF COURSE STRUCTURE
MA/M.Sc. STATISTICS (Session: 2018-20)

Subject Code	Title of the Course	Credit Hours
I SEMESTER		
MSC 411	Mathematical Analysis	**4 CH**
MSC 412	Statistical Method-I	**4 CH**
MSC 413	Probability-1	**4 CH**
MSC 414	Linear Algebra And Numerical Analysis	**4 CH**
MSC 415	Data Structure and programming in C	**4 CH**
MSC 416	Laboratory in Data Structure and Programming in C	**2 CH**
	Semester Total	**22 CH**
II SEMESTER		
MSC 421	Statistical Methods-Il	**4 CH**
MSC 422	Statistical Inference-I	**4 CH**
MSC 423	Sampling Methods	**4 CH**
MSC 424	Applied Statistics	**4 CH**
MSC 425	Probability-II	**4 CH**
MSC 426	Laboratory in Statistical Methods, Sampling and Applied Statistics	**2 CH**
	Semester Total	**22 CH**
III SEMESTER		
MSC 511	Optimization Technique-I	**4 CH**
MSC 51 2	Statistical Inference-II	**4 CH**
MSC 513	Discrete Mathematical Structure	**4 CH**
MSC 514	Stochastic Modeling	**4 CH**
MSC 515	Statistics Laboratory on Computer (SPSS)	**2 CH**
MSE516( )	Special Paper- (anyone)	**4 CH**
	Semester Total	**22CH**
IV SEMESTER		
MSE 521	Time Series & Forecasting	**4 CH**
MSC 522	Multivariate Analysis	**4 CH**
MSC 523	Design and Analysis of Experiment	**4 CH**
MSC 524	Project and Viva Voce	**6 CH**
MSC 525	Practical and Viva Voce	**2 CH**
MSE 526( )	Special Paper-II (anyone)	**4 CH**
	Semester Total	**24 CH**
GRAND TOTAL		**90CH**

POST GRADUATE DEPARTMENT OF STATISTICS (AUTONOMOUS)
SAMBALPUR UNIVERSITY
M.A/M.Sc STATISTICS COURSES OF STUDY FOR 2018-2020

SPECIAL PAPERS

(In each of 3rd & 4th Semester one Special paper has to be chosen from the following list)

Subject code	Title of the course	Credit Hours
A	Advanced Stochastic Process	4CH
B	Computer Graphics	4CH
C	Statistical Quality Control and Reliability	4CH
D	Population Studies	4CH
E	Queuing Theory	4CH
F	Statistical Ecology	4CH
G	Stochastic Inference	4CH
H	Statistical Genetics	4CH
I	Data Ware Housing and Data Mining	4CH
J	Optimization-II	4CH
K	Pattern Recognition	4CH
L	Cryptography	4CH

Academic Programme

First Semester Examination	December 2019
Second Semester Examination	June 2020
Third Semester Examination	December 2020
Fourth Semester Examination	June 2021

PROCEEDING OF THE BOARD OF STUDIES MEETING OF DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING & APPLICATIONS HELD ON DATE- 16/07/2017

Members Present

1) Prof. (Dr.) Amiya Kumar Rath, Prof. Dept. CSE, VSSUT, Burla
2) Mr. Pradyumna Kumar Ratha, Head & Asst. Prof. Dept. CSE&A, SUIIT, Burla
3) Mr. Kalyan Das, Asst. Prof. Dept. CSE&A, SUIIT, Burla
4) Mrs. Sushree Subhaprada Pradhan, Asst. Prof. Dept. CSE&A, SUIIT, Burla
5) Dr. (Mrs.) Madhumita Panda, Asst. Prof. Dept. CSE&A, SUIIT, Burla
6) Mr. Sibarama Panigrahi, Asst. Prof. Dept. CSE&A, SUIIT, Burla
7) Mr. Debashreet Das , Asst. Prof. Dept. CSE&A, SUIIT, Burla

The Board of Study meeting of Department of CSE&A, SUIIT was held on 16/07/2017 and discussed a revised course structure for different running programmes (B.Tech CSE, MCA, M.Sc CS, M.Tech CSE, M.Phil CS, and Pre. Ph.D. Course Work). The revised structures approved by all the members of meeting are mentioned from Section A-Section-F.

Signature of Members:

Prof. (Dr.) Amiya Kumar Rath 16/7/17

Mr. Pradyumna Kumar Ratha 16/07/2017

Mr. Kalyan Das 16/7/2017

Mrs. Sushree Subhaprada Pradhan 16.7.2017

Dr. (Mrs.) Madhumita Panda 16.7.17

Mr. Sibarama Panigrahi 16/7/2017

Mr. Debashreet Das 16/7/2017

SECTION-A

Syllabus Structure

(B.Tech Computer Science and Engineering)

	Semester – I							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC111	Mathematics-I	FC(BS)	4	0	0	4	Common to all branch
2	PHC112	Physics-I	FC(BS)	3	0	0	4	
3	CSC113	Basic Electrical Engineering	FC(BE)	3	0	1	4	
4	EEC114	Programming in C	FC(CS)	3	0	1	4	
5	HSC115	English for Communication	FC(HS)	3	0	0	3	
6	EEL116	Basic Electrical Lab.	FC(BE)	0	3	0	2	
7	CSL117	Programming in C Lab.	FC(CS)	0	3	0	2	
8	PHL118	Physics Lab	FC(BS)	0	3	0	2	
						Total Credit:	25	

	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	Common to all branch
2	PHC 122	Physics-II	FC(BS)	3	0	0	4	
3	ECC 123	Basic Electronics	FC(BE)	3	0	1	4	
4	CSC 124	Object Oriented Programming using C++	FC(CS)	3	0	1	4	
5	HSC125	Environmental Studies	FC(HS)	4	0	0	4	
6	CSL 126	Object Oriented Programming using C++ Lab.	FC(CS)	0	3	0	2	
7	ECL 127	Basic Electronics Lab.	FC(BE)	0	3	0	2	
8	EDC 128	Engineering Graphics	FC(BE)	0	3	0	2	
						Total Credit:	26	

	Semester – III							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 211	Mathematics-III	FC(BS)	4	0	0	4	
2	ECC 212	Data Communication	PC(CE)	4	0	0	4	
3	CSC 213	Data Structures with C	PC(CE)	4	0	0	4	
4	ECC 214	Digital Circuits and Systems	FC(BE)	4	0	0	4	
5	CSC 215	Computer Organization and Architecture	PC(CE)	4	0	0	4	
6	CSL 216	Data Structures with C Lab.	PC(CE)	0	3	0	2	
7	ECL 217	Digital Circuit Lab.	FC(BE)	0	3	0	2	
8	CSL 218	Computer Engineering Workshop	PC(CE)	1	2	0	2	
						Total Credit:	26	

16.7.17

Sushree S. Pradhan 16.7.2017

16/7/17

16/07/2017

16/7/2017

Kalyan Dey 16/7/2017

	Semester – IV							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 221	Mathematics-IV	FC(BS)	4	0	0	4	
2	ECC 222	Microprocessor& Microcontroller	FC(BE)	3	0	0	4	
3	CSC 223	Programming with Java	PC(CE)	3	0	1	4	
4	CSC 224	Analysis and Design of Algorithms	PC(CE)	3	0	0	4	
5	CSC 225	Operating Systems	PC(CE)	3	0	0	4	
6	ECL 226	Microprocessor& Microcontroller Lab.	FC(BE)	0	3	0	2	
7	CSL 227	Programming with Java Lab.	PC(CE)	0	3	0	2	
8	CSL 228	Analysis and Design of Algorithms Lab.	PC(CE)	0	3	0	2	
						Total Credit:	26	

	Semester – V							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC 311	Discrete Mathematics	FC (BS)	4	0	0	4	
2	CSC 312	Theory of Computation	PC(CE)	4	0	0	4	
3	CSC 313	Database Management Systems	PC(CE)	3	0	1	4	
4	CSC 314	Computer Networks	PC(CE)	3	0	0	4	
5	XXX XXX	HSS Elective-I	OE (OE)	3	0	1	3	
6	CSL 315	Database Management System Lab.	PC(CE)	0	3	0	2	
7	CSL 316	Computer Network Lab	PC(CE)	0	3	0	2	
8	CSL 317	Open Source Lab.	PC(CE)	0	3	0	2	
						Total Credit:	25	

	Semester – VI							
S.No.	Corse Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 321	Artificial Intelligence	PC(CE)	4	0	0	4	
2	CSC 322	Web Technology	PC(CE)	3	0	1	4	
3	CSC 323	Software Engineering	PC (CE)	3	0	1	4	
4	XXX XXX	Programme Elective-I	PE (CE)	4	0	0	4	
5	XXX XXX	Open Elective-I	IE (IE)	4	0	0	4	
6	CSL 324	Web Technology Lab.	PC(CE)	0	3	0	2	
7	CSL 325	Software Engineering Lab.	PC(CE)	0	3	0	2	
						Total Credit:	24	

	Semester – VII							
S. No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 411	Data Warehouse and Data Mining	PC(CE)	4	0	0	4	
2	CSC 412	Compiler Design	PC(CE)	4	0	0	4	
3	XXX XXX	Programme Elective-II	PE (CE)	3	0	0	4	
4	XXX XXX	Open Elective-II	PE (CE)	3	0	0	4	
5	XXX XXX	HSS Elective-II	OE (OE)	3	0	0	3	
6	CSP 413	Minor Project	PP (PW)	3	0	0	4	
7	CSS 414	Technical Seminar	PP (TS)	0	0	0	1	
						Total Credit:	24	

6.7.17

Sushree S. Pradhan 16.07.2017

16/07/2017

16/7/17

16/7/2017

Kalyan Dey 16/7/2017

	Semester – VIII							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 421	Cryptography and Network Security	PC(CE)	4	0	0	4	
2	XXX XXX	Programme Elective-III	PE (CE)	3	0	0	4	
3	XXX XXX	Programme Elective-IV	PE (CE)	3	0	0	4	
4	XXX XXX	HSS Elective-III	OE(OE)	4	0	1	3	
5	CSP 422	Major Project	PP (PW)	0	0	0	8	
6	CSV 423	Comprehensive Viva-voce	PP (CV)	0	0	0	3	
						Total Credit:	26	

SEMESTER WISE CREDIT DISTRIBUTION									
Year	Credit(50)		Credit(52)		Credit(52)		Credit(50)		
Semester	I	II	III	IV	V	VI	VII	VIII	TOTAL
Total Credit	25	26	26	26	25	27	24	26	205

HSS ELECTIVES

HSS Elective-I

Code	Course Title	Category	L	P	T	Credits
HSE E01	Engineering Economics	OE(IE)	3	0	0	3
HSE E02	Profession Writing and Communication	OE(OE)	3	0	0	3
HSE E03	Science and Technology	OE(OE)	3	0	0	3

HSS Elective-II

Code	Course Title	Category	L	P	T	Credits
HSE E04	Organizational Behavior	OE(OE)	3	0	0	3
HSE E05	Personal Development	OE(OE)	3	0	0	3
HSE E06	Ethics Integrity and attitude	OE(OE)	3	0	0	3
HSE E07	E-Commerce	IE(IE)	3	0	0	3

HSS Elective-III

HSE E08	Entrepreneurial Management	OE(OE)	3	0	0	3
HSE E09	Human Resource Management	OE(OE)	3	0	0	3
HSE E10	Society and Social issues	OE(OE)	3	0	0	3
HSE E11	Law for Engineers	IE(IE)	3	0	0	3

OPEN ELECTIVES

Open Elective-I

Code	Course Title	Category	L	P	T	Credits
OPE E01	Principle of Programming Language	IE(IE)	4	0	0	4
OPE E02	Optimization Techniques	IE(IE)	4	0	0	4
OPE E03	Statistical Methods	IE(IE)	4	0	0	4
OPE E04	Digital Signal Processing	IE(IE)	4	0	0	4
OPE E05	Computer Oriented Numerical Methods	IE(IE)	4	0	0	4
OPE E06	Middleware Technologies	IE(IE)	4	0	0	4

Open Elective-II

Code	Course Title	Category	L	P	T	Credits
OPE E07	Information Theory and Coding	IE(IE)	3	0	0	4
OPE E08	VLSI Engineering	IE(IE)	3	0	0	4
OPE E09	Software Project Management	IE(IE)	3	0	0	4
OPE E10	Digital Image Processing	IE(IE)	4	0	0	4

OPE E11	Pattern Recognition	IE(IE)	3	0	0	4
OPE E12	Wireless Sensor Network	IE(IE)	3	0	0	4
OPE E13	Remote Sensing and Geographic Information Systems	IE(IE)	3	0	0	4

PROGRAMME ELECTIVES

Programme Elective-I

Code	Course Title	Category	L	P	T	Credits
CSE E01	Advanced Computer Architecture	PE(PE)	4	0	0	4
CSE E02	Soft Computing	PE(PE)	4	0	0	4
CSE E03	Semantic Web	PE(PE)	4	0	0	4
CSE E04	Cloud Computing	PE(PE)	4	0	0	4
CSE E05	Human Computer Interaction	PE(PE)	4	0	0	4
CSE E06	Advanced Data Structures	PE(PE)	4	0	0	4
CSE E07	Object Oriented Analysis and Design	PE(PE)	4	0	0	4

Programme Elective-II

Code	Course Title	Category	L	P	T	Credits
CSE E08	Distributed Database Systems	PE(PE)	4	0	0	4
CSE E09	Information Retrieval System	PE(PE)	4	0	0	4
CSE E10	Embedded Systems	PE(PE)	4	0	0	4
CSE E11	Computer Graphics	PE(PE)	4	0	0	4
CSE E12	High Performance Computing	PE(PE)	4	0	0	4
CSE E13	Wireless Communications	PE(PE)	4	0	0	4
CSE E14	Mobile Computing	PE(PE)	4	0	0	4

Programme Elective-III

Code	Course Title	Category	L	P	T	Credits
CSE E15	Parallel Computing	PE(PE)	4	0	0	4
CSE E16	Grid Computing	PE(PE)	4	0	0	4
CSE E17	Big data analytics	PE(PE)	4	0	0	4
CSE E18	Simulation and Modeling	PE(PE)	4	0	0	4
CSE E19	Introduction to Bioinformatics	PE(PE)	4	0	0	4
CSE E20	Internet of Things	PE(PE)	4	0	0	4
CSE E21	Management Information Systems	PE(PE)	4	0	0	4

Programme Elective-IV

Code	Course Title	Category	L	P	T	Credits
CSE E22	Machine Learning	PE(PE)	4	0	0	4
CSE E23	Advanced Software Engineering	PE(PE)	4	0	0	4
CSE E24	Network Management	PE(PE)	4	0	0	4
CSE E25	Distributed Systems	PE(PE)	4	0	0	4
CSE E26	Software Design and Validations	PE(PE)	4	0	0	4
CSE E27	Storage Area Networks	PE(PE)	4	0	0	4
CSE E28	Ethical Hacking	PE(PE)	4	0	0	4
CSE E29	Game Programming	PE(PE)	4	0	0	4
CSE E29	Real time Systems	PE(PE)	4	0	0	4

NB:

Examination and Evaluation procedure for Technical Seminar, summer internship, Comprehensive Viva-Voce and Project Work (minor & Major) will be as per Academic & Examination Guidelines of SUIIT.

Sushmita S. Pradhan 16.07.2017

16/07/2017

16/7/2017

16/7/2017

SECTION-B

Syllabus Structure

(Masters in Computer Applications)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
MC 511	Discrete Mathematics	FC	4	0	0	4
MC 512	English for Business Communications	FC	3	0	0	3
MC 513	Computer Programming with C	CC	3	0	1	4
MC 514	Business Accounting	FC	3	0	0	3
MC 515	Computer Organization and Architecture	CC	4	0	0	4
MC 516	Programming in C Lab.	CC	0	3	0	2
MC 517	Hardware and Assembly Programming Lab.	CC	0	3	0	2
					Total Credit:	**22**

Semester – II						
Code	Course Title	Category	L	P	T	Credits
MC 521	Probability and Statistics	FC	4	0	0	4
MC 522	Object Oriented Programming using C++	CC	3	0	1	4
MC 523	Data Structure with C	CC	3	0	1	4
MC 524	Optimization Techniques	FC	4	0	0	4
MC 525	Ecology and Environment	FC	4	0	0	4
MC 526	Object Oriented Programming Lab.	CC	0	3	0	2
MC 527	Data Structure using C Lab.	CC	0	3	0	2
MC 528	Technical Seminar – I	TS	0	0	0	2
					Total Credit:	**26**

Semester – III							
Code	Course Title		Category	L	P	T	Credits
MC 531	Computer Oriented Numerical Methods		CC	4	0	0	4
MC 532	Programming with Java		CC	3	0	1	4
MC 533	Data Communication and Computer Networks		CC	4	0	0	4
MC 534	Database Management Systems		CC	3	0	0	4
	Elective-I		PE	3	0	1	4
	MC 53E1	Human Computer Interaction					
	MC 53E2	Computer Graphics					
	MC 53E3	Distributed Systems					
	MC 53E4	E-Commerce					
MC 535	Programming with Java Lab.		CL	0	3	0	2
MC 536	Database Management Systems Lab.		CL	0	3	0	2
						Total Credit:	**24**

Semester – IV							
Code	Course Title		Category	L	P	T	Credits
MC 541	Theory of Computation		CC	4	0	0	4
MC 542	Analysis and Design of Algorithms		CC	4	0	0	4
MC 543	Operating System		CC	4	0	0	4
MC 544	Business Finance		CC	3	0	0	3
	Elective-II		PE	3	0	1	4
	MC 54E1	Artificial Intelligence					

	MC 54E2	Advanced data structure					
	MC 54E3	Information Retrieval System					
MC 545	Analysis and Design of Algorithms Lab		CC	0	3	0	2
MC 546	Operating System Lab		CL	0	3	0	2
MC 547	Seminar – II		TS	0	0	0	2
						Total Credit:	**25**

Semester – V

Code	Course Title		Category	L	P	T	Credits
MC 551	Software Engineering		CC	4	0	0	4
MC 552	Web Technology		CC	4	0	0	4
MC 553	Information Security		CC	4	0	0	4
	Programme Elective-III		PE	3	0	0	4
	MC 55E1	Advance database					
	MC 55E2	Data warehousing and Data Mining					
	MC 55E3	Mobile Computing					
	Programme Elective-IV		PE	3	0	0	4
	MC 55E4	Simulation Modeling					
	MC 55E5	Soft Computing					
	MC 55E6	Cloud Computing					
	MC 55E7	Compiler Design					
	Web Technology Lab.		CL	0	3	0	2
MC 554	Minor Project		PW	0	3	0	4
						Total Credit:	**26**

Semester – VI

Code	Course Title	Category	L	P	T	Credits
MC 561	Project Work	PW				16
MC 562	Comprehensive Viva - Voce	CV				6
					Total Credit:	**22**

SEMESTER WISE CREDIT DISTRIBUTION							
Semester	I	II	III	IV	V	VI	TOTAL
Total Credit	22	26	24	26	24	22	144

N.B.

Seminar-I/Seminar-II: Students will choose two different topics from latest technological development / research in CSE or in allied field present in two successive seminar respectively. They will submit synopsis for each presentation in an approved format on the day of presentation.

Project work and Comprehensive Viva-Voce will be as per Academic & Examination Guidelines of SUIIT.

Sushree S. Pradhan 16.07.2017

16/7/17

SECTION-C
Syllabus Structure
(Masters in Science in Computer Science)

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 511	Mathematics Foundation	Foundation	4	0	0	4
CS 512	Statistical Methods for Computing	Foundation	4	0	0	4
CS 513	Digital Circuits and Systems	Core	4	0	0	4
CS 514	Programming in C	Core	3	0	1	4
CS 515	Data Structure and Algorithm	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Digital Electronics lab.	Core	0	3	0	2
					Total Credit:	24

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 521	Linear Algebra and Calculus	Foundation	4	0	0	4
CS 522	Theory of Computation	Core	4	0	0	4
CS 523	Operating Systems	Core	4	0	0	4
CS 524	Object Oriented Programming with C++	Core	3	0	1	4
CS 525	Computer Organization and Architecture	Core	4	0	0	4
CS 526	Object Oriented Programming Lab.	Core	0	3	0	2
CS 527	Operating Systems Lab.	Core	0	3	0	2
					Total Credit:	24

Semester – III							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 531	Database Management System		Core	3	0	1	4
CS 532	Computer Graphics		Core	4	0	0	4
CS 533	Data Communications and Computer Networks		Core	4	0	0	4
CS 534	Compiler Design		Core	4	0	0	4
XX XXXX	Elective-I		Prog. Elect.	4	0	0	4
	CS 53E1	Mobile Computing					
	CS 53E2	Information Retrieval System					
	CS 53E3	Information Security					
	CS 53E4	Management Information System					
CS 535	Database Management Systems Lab		Core	0	3	0	2
CS 536	UML Lab.		Core	0	3	0	2
						Total Credit:	24

Semester – IV							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 541	Software Engineering		Core Course	4	0	0	4
CS 542	Artificial Intelligence		Core Course	4	0	0	4
CS 543	Ecology and Environment		Foundation	4	0	0	3
XX XXXX	Elective-II		Prog. Elect.	4	0	0	4
	CS 54E1	Data Mining and Data Warehousing					
	CS 54E2	Wireless Sensor Networks					
	CS 54E3	Cloud Computing					
	CS 54E4	Simulation Modeling					
	CS 54E5	Introduction to Big Data Analytics					
CS 544	Project		Project Work	-	-	-	8
CS 545	Seminar		Tech. Seminar	-	-	-	1
						Total Credit:	24

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**24**	**24**	**24**	**24**	96

Sushree S. Pradhan 16.07.2017

SECTION-D

Syllabus Structure

(Masters in Technology in Computer Science and Engineering)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
CS 611	Foundations of Mathematics	Foundation Course	4	0	0	4
CS 612	Advanced Data structures and Algorithms	Core Course	4	0	0	4
CS 613	Advanced Programmed Languages	Core Course	3	0	0	4
XX XXXX	Elective –I	Programme Elective	3	0	1	4
XX XXXX	Elective –II	Programme Elective	3	0	0	4
CS 614	Open source lab	Core Course	0	3	0	2
CS 615	Advanced programming lab.	Core Course	0	3	0	2
CS 616	Seminar & Technical Writing-I	Technical Seminar	-	-	-	2
					Total Credit:	26

Semester-I Elective Pool (for Elective-I and Elective-II)	
CS 61E1	Image Processing
CS 61E2	Information retrieval and web search
CS 61E3	Pattern Recognition
CS 61E4	Advanced Computer Networking
CS 61E5	Advanced Databases
CS 61E6	Advanced Computer Architecture
CS 61E7	Mobile Computing
CS 61E8	Principles of Programming Languages
CS 61E9	Intellectual Property Rights and Cyber Laws
CS 61E10	Formal Language and Automata Theory

Semester – II						
Code	Course Title	Category	L	P	T	Credits
CS 621	Artificial intelligence	Core Course	4	0	0	4
CS 622	Software Engineering	Core Course	4	0	0	4
XX XXXX	Elective –III	Programme Elective	3	0	0	4
XX XXXX	Elective –IV	Programme Elective	3	0	1	4
XX XXXX	Elective –V	Programme Elective	3	0	0	4
CS 623	Network programming lab.	Core Course	0	3	0	2
CS 624	Seminar and technical writing-II	Technical Seminar	-	-	-	2
					Total Credit:	24

Semester-II Elective Pool (for Elective-III, Elective-IV, and Elective-V)	
CS 62E1	Cryptography and Network Security
CS 62E2	Internet of Things
CS 62E3	Storage Area Networks
CS 62E4	Game Theory
CS 62E5	Data warehousing and data Mining
CS 62E6	Machine Learning
CS 62E7	Big Data Analytics
CS 62E8	Cloud Computing
CS 62E9	Soft Computing
CS 62E10	Embedded Systems
CS 62E11	Wireless Sensor Network & Applications
CS 62E12	Semantic Web and Social Networking
CS 62E13	Advanced Operating Systems
CS 62E14	Software Project Management
CS 62E15	Parallel algorithms

16.7.17 16/7/17 Sushree S. Pradhan 16.07.17 16/07/2017

Amrit 16/7/2017 Kalyan Das 16/7/2017

Semester – III			
Code	Course Title	Category	Credits
CS 631	Project Work Review-I Comprehensive Viva-Vice	Project Work	12
		Total Credit:	12

Semester – IV			
Code	Course Title	Category	Credits
CS 641	Project Work Review-II Project Evaluation (Viva-Voce)	Project Work	20
		Total Credit:	20

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	I	II	III	IV	TOTAL
Total Credit	26	24	12	20	82

Special Instructions:

- **Selection of Electives:** For Elective-I/II choose two different courses from Elective Pool-I and for Electives-III/IV/V choose three different courses.
- **SEMINAR AND TECHNICAL WRITING-I&II:** Student will review research papers published in referred journals (at least six different papers in an installment of two seminars). In this work student will prepare and display posters, prepare and submit synopsis, give seminar on the topic. All faculty members / teachers council of the department will be the reviewer of the course. Equal weightage will be given to Seminal and Technical writing.
- **DISSERTATION – I:** Third Semester dissertation evaluation as per the Academic guide lines of SUIIT.
- **DISSERTATION – II:** Fourth semester or final dissertation and student will be allowed only if after successful completion of third semester project evaluation and the evaluation will be as per the Academic guide lines of SUIIT.

Sushmee S. Pradhan
16.07.2017

PROCEEDING OF THE BOARD OF STUDIES MEETING OF DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING & APPLICATIONS HELD ON DATE- 20/03/2019

Members Present

1) Dr. Sudarson Jena Head & Assoc. Prof. Dept. CSE&A, SUIIT, Burla -- Chairman
2) Prof. (Dr.) Sarojananda Mishra, Prof. Dept. CSE, IGIT, Saranga (Outside Expert)
3) Mr. Pradyumna Kumar Ratha, Asst. Prof. Dept. CSE&A, SUIIT, Burla
4) Mr. Kalyan Das, Asst. Prof. Dept. CSE&A, SUIIT, Burla
5) Mrs. Sushree Subhaprada Pradhan, Asst. Prof. Dept. CSE&A, SUIIT, Burla
6) Dr. (Mrs.) Madhumita Panda, Asst. Prof. Dept. CSE&A, SUIIT, Burla
7) Mr. Sibarama Panigrahi, Asst. Prof. Dept. CSE&A, SUIIT, Burla
8) Mr. Debashreet Das , Asst. Prof. Dept. CSE&A, SUIIT, Burla
9) Mr. Amiya Bhusan Bagjadab, Asst. Prof. Dept. CSE&A, SUIIT, Burla
10) Mr. Debabrata Dansena, Asst. Prof. Dept. CSE&A, SUIIT, Burla
11) Mr. Sujit Kumar Biswal, Asst. Prof. Dept. CSE&A, SUIIT, Burla
12) Ms. Sanju Parida, Asst. Prof. Dept. CSE&A, SUIIT, Burla

The Board of Study meeting of Department of CSE&A, SUIIT was held on 20/03/2019 and discussed a revised course structure for different running programmes like B. Tech CSE, MCA, M. Sc. CS, M. Tech CSE, M. Phil CS and Pre-Ph. D, course work in CSE. The revised structures approved by all the members of meeting are follows.

Signature of Members:

Prof. (Dr.) Sarojananda Mishra — Dr. Sudarson Jena — Mr. Pradyumna Kumar Ratha

Mr. Kalyan Das — Mrs. Sushree Subhaprada Pradhan — Dr. (Mrs.) Madhumita Panda

Mr. Sibarama Panigrahi — Mr. Debashreet Das — Mr. Amiya Bhusan Bagjadab

Mr. Debabrata Dansena — Mr. Sujit Kumar Biswal — Ms. Sanju Parida

Syllabus Structure

B. Tech. (Computer Science & Engineering)

(Effective from the academic Session 2019-2020)

Department of Computer Science & Engineering and Applications
Sambalpur University Institute of Information Technology (SUIIT)
Sambalpur University, Jyoti Vihar-768019, Burla

Syllabus Structure
(B. Tech Computer Science and Engineering)

Semester – I

S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC111	Mathematics-I	FC(BS)	4	0	0	**4**	Common to all branch
2	PHC112	Physics-I	FC(BS)	3	0	0	**3**	
3	CSC113	Programming in C	FC(CS)	3	0	1	**3**	
4	EEC114	Basic Electrical Engineering	FC(BE)	3	0	1	**3**	
5	HSC115	Communicative English	FC(HS)	3	0	0	**3**	
6	EEL116	Basic Electrical Lab.	FC(BE)	0	3	0	**1.5**	
7	CSL117	Programming in C Lab.	FC(CS)	0	3	0	**2**	
8	PHL118	Physics Lab.	FC(BS)	0	3	0	**1.5**	
						Total Credit:	**21**	

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**	Common to all branch
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 Structure using C	FC(CS)	3	0	1	**3**	
5	HSC125	*Environmental Studies (Non Credit)	FC(HS)	3	0	0	**0**	
6	ECL 126	Basic Electronics Lab.	FC(BE)	0	3	0	**1.5**	
7	EDC 127	Engineering Graphics Lab.	FC(BE)	0	3	0	**1.5**	
8	CSL 128	Data Structure using C Lab.	FC(CS)	0	3	0	**2**	
						Total Credit:	**19**	

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 Circuit 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	1.5	
7	ECL 237	Digital Circuit Lab.	FC(BE)	0	3	0	1.5	
						Total Credit:	**20**	

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	Microprocessor & Microcontroller	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	4	
6	ECL 246	Analysis and Design of Algorithms Lab.	FC(BE)	0	3	0	1.5	
8	CSL 247	Microprocessor &Microcontroller Lab.	PC(CE)	0	3	0	1.5	
						Total Credit:	**20**	

	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)	4	0	0	4	
3	CSC 353	Database Management Systems	PC(CE)	3	0	1	3	
4	CSC 354	Computer Networks	PC(CE)	3	0	0	3	
5	HSC 355	Engineering Economics	OE (OE)	3	0	1	3	
		Program Elective-I					3	
6	CSL 356	Database Management System Lab.	PC(CE)	0	3	0	1.5	
7	CSL 357	Computer Network Lab	PC(CE)	0	3	0	1.5	
						Total Credit:	22	

	Semester – VI							
S.No.	Corse Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 361	Web Technology	PC(CE)	4	0	0	3	
2	CSC 362	Software Engineering	PC(CE)	3	0	1	3	
3	CSC 363	Programme Elective-II	PC (CE)	3	0	1	3	
4	XXX XXX	Programme Elective-III	PE (CE)	4	0	0	3	
5	XXX XXX	Open Elective-I	IE (IE)	4	0	0	3	
6	CSL 364	Web Technology Lab.	PC(CE)	0	3	0	1.5	
7	CSL 365	Software Engineering Lab.	PC(CE)	0	3	0	1.5	
						Total Credit:	18	

	Semester – VII							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	CSC 471	Data Warehousing and Data Mining	PC(CE)	4	0	0	4	
2	CSC 472	Compiler Design	PC(CE)	4	0	0	3	
3	XXX XXX	Programme Elective-IV	PE (CE)	3	0	0	3	
4	XXX XXX	Programme Elective-V	PE (CE)	3	0	0	3	
5	XXX XXX	Open Elective-II	OE (OE)	3	0	0	3	
6	CSP 473	Minor Project	PP (PW)	3	0	0	4	
7	CSS 474	Seminar	TS(PW)				1	
						Total Credit:	21	

	Semester – VIII							
S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	XXX XX	Program Elective-VI	PC(CE)	4	0	0	3	
2	XXX XXX	Open Elective-III	OE(OE)	3	0	0	3	
3	XXX XXX	Open Elective-IV	OE(OE)	3	0	0	3	
4	CSP 482	Major Project	PP (PW)	0	0	0	8	
5	CSV 483	Comprehensive Viva-voce	PP (CV)	0	0	0	2	
						Total Credit:	19	

SEMESTER WISE CREDIT DISTRIBUTION									
Year	Credit(40)		Credit(40)		Credit(40)		Credit(40)		
Semester	I	II	III	IV	V	VI	VII	VIII	TOTAL
Total Credit	21	19	20	20	22	18	21	19	160

OPEN ELECTIVES

Open Elective-I

Code	Course Title	L	P	T	Credits
OPE E01	Principle of Programming Language	4	0	0	3
OPE E02	Optimization Techniques	4	0	0	3
OPE E03	Management Information system	4	0	0	3
OPE E04	Digital Signal Processing	4	0	0	3
OPE E05	Middleware Technologies	4	0	0	3

Open Elective-II

Code	Course Title	L	P	T	Credits
OPE E06	Internet of Things	3	0	0	3
OPE E07	Simulation Modeling	3	0	0	3
OPE E08	Digital Image Processing	3	0	0	3
OPE E09	Soft Computing	3	0	0	3
OPE E10	Mobile Computing	3	0	0	3

Open Elective-III

Code	Course Title	L	P	T	Credits
OPE E11	Information Theory and Coding	3	0	0	3
OPE E12	Pattern Recognition	3	0	0	3
HSC 483	Entrepreneurship Management	3	0	0	3
OPE E14	Computer Oriented Numerical Methods	3	0	0	3

Open Elective-IV

Code	Course Title	L	P	T	Credits
OPE E15	Machine Learning	3	0	0	3
OPE E16	Software Project Management	3	0	0	3
OPE E17	Remote Sensing and Geographic Information Systems	3	0	0	3
OPE E18	Personal Development	3	0	0	3
OPE E19	E-commerce	3	0	0	3

PROGRAMME ELECTIVES

Programme Elective-I

Code	Course Title	L	P	T	Credits
CSE E01	Computer Graphics	4	0	0	3
CSE E02	Information Retrieval System	4	0	0	3
CSE E03	Real time Systems	4	0	0	3
CSE E04	Advanced Operating System	4	0	0	3
CSE E05	Advanced Data Structures	4	0	0	3

Programme Elective-II

Code	Course Title	L	P	T	Credits
CSE E06	Advanced Computer Architecture	4	0	0	3
CSE E07	Human Computer Interaction	4	0	0	3
CSE E08	Parallel Computing	4	0	0	3
CSE E09	Wireless Communications	4	0	0	3
CSE E10	Distributed Database Systems	4	0	0	3

Programme Elective-III

Code	Course Title	L	P	T	Credits
CSE E11	Artificial Intelligence	4	0	0	3
CSE E12	Grid Computing	4	0	0	3
CSE E13	Semantic Web	4	0	0	3
CSE E14	Advance Software Engineering	4	0	0	3
CSE E15	Storage Area Networks	4	0	0	3

Sushmita S. Pradhan

Programme Elective-IV					
Code	**Course Title**	**L**	**P**	**T**	**Credits**
CSE E16	Wireless Sensor Network	4	0	0	3
CSE E17	Distributed Systems	4	0	0	3
CSE E18	Software Design and Validations	4	0	0	3
CSE E19	High Performance Computing	4	0	0	3

Programme Elective-V					
Code	**Course Title**	**L**	**P**	**T**	**Credits**
CSE E21	Cryptography and Network Security	4	0	0	3
CSE E22	Ethical Hacking	4	0	0	3
CSE E23	Introduction to Bioinformatics	4	0	0	3
CSE E24	Game Programming	4	0	0	3

Programme Elective-VI					
Code	**Course Title**	**L**	**P**	**T**	**Credits**
CSE E25	Cloud Computing	4	0	0	3
CSE E26	Big data analytics	4	0	0	3
CSE E27	Object Oriented Analysis and Design	4	0	0	3
CSE E28	Advanced Database				

NB:

Examination and Evaluation procedure for Technical Seminar, summer internship, Comprehensive Viva-Voce and Project Work (minor & Major) will be as per Academic & Examination Guidelines of SUIIT.

20.3.19 20/03/19 20/3/19 20/3/19 Sushree S. Pradhan

20.3.19 20/3/19 20/3/19 20.3.19

20/3/2019 20.3.19 Calyan Dey 20/3/2019

BOARD OF STUDIES MEETING

Department of Computer Science & Engineering and Applications

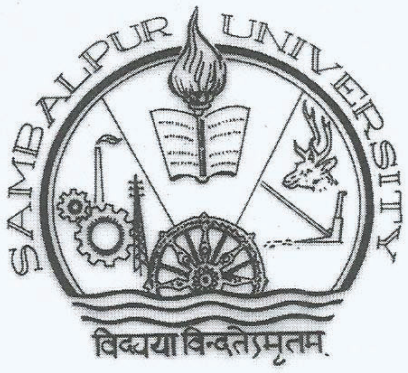
Sambalpur University Institute of Information Technology (SUIIT)

Academic Session 2020-2021

Course Structure

Master of Computer Applications (MCA)

(Two Years)



(Effective from the academic Session 2020-2021)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

Course Structure
Masters of Computer Applications

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 511	Mathematical Foundations of Computer Science	CC	4	0	0	3
MC 512	Database Management Systems	CC	4	0	0	3
MC 513	Programming and Data Structures	CC	3	0	1	3
MC 514	Operating Systems	CC	4	0	0	3
MC 515	Computer Systems Architecture	CC	4	0	0	3
MC 517	Programming and Data Structures Lab.	CL	0	3	0	2
MC 518	Database Management Systems Lab.	CL	0	3	0	2
MC 519	Communicative English Lab.	CL	0	2	0	2
					Total Credit:	**21**

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 521	Software Engineering	CC	4	0	0	3
MC 522	Object Oriented Programming using Java	CC	3	0	1	3
MC 523	Design and Analysis of Algorithms	CC	3	0	1	3
MC 524	Data Communication and Computer Networks	CC	4	0	0	3
MC 525	Theory of Computation	CC	3	0	0	3
MC 527	Object Oriented Programming using Java Lab.	CL	0	3	0	2
MC 528	Design and Analysis of Algorithms Lab.	CL	0	3	0	2
MC 529	UML Lab.	CL	0	2	0	2
MC 530	Financial Accounting (MOOCs-1)		3	0	0	3
					Total Credit:	**24**

Semester – III						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 531	Information and Cyber Security	CC	4	0	0	3
MC 532	Artificial Intelligence	CC	4	0	1	3
MC 533	Web Technology	CC	4	0	0	3
MC 535	Elective-I 1. Machine Learning 2. Soft Computing 3. Mobile Computing 4. Computer Graphics 5. Simulation and Modeling 6. Compiler Design	CC	3	0	0	3
MC 536	Elective-II 1. Data warehousing and Data Mining 2. Cloud Computing 3. Big Data Analytics 4. Wireless Sensor Networks 5. Advanced Databases 6. Management Support Systems	CC	3	0	0	3
MC 537	Open Source Lab	CL	0	3	0	2
MC 538	Web Technology Lab	CL	0	3	0	2
MC539	Technical Seminar	TS	0	2	0	2
MC 540	Soft Skills and Personality Development (MOOCs-2)		3	0	0	3

					Total Credit:	**24**
Semester – IV						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 561	Project Work	PW				12
MC562	MOOCs-3 (Decision Support Systems for Managers)	MOC	4	0	0	4
MC563	MOOCs-4(Data Science for Engineers)		3	0	0	3
MC 564	Comprehensive Viva – Voce	CV				6
					Total Credit:	**25**

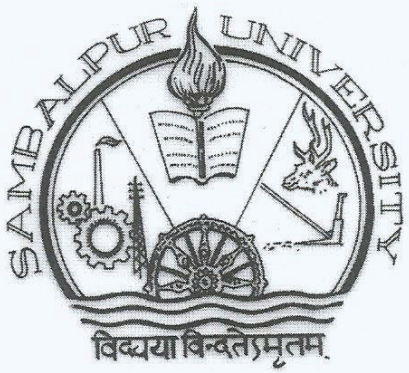
SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**21**	**24**	**24**	**25**	**94**

N.B.

- **A student will be eligible to get MCA degree only if he/she completes the course work including the MOOCs courses recommended by the department.**
- **The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offering in Odd/Even Semesters by them.**
- **SWAYAM will 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 Computer Science and Application 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.

Course Structure

B.Tech.(Computer Science& Engineering)



(Effective from the academic Session 2020-2021)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

Course Structure
(B.Tech Computer Science and Engineering)

Semester – I

S.No.	Course Code	Course Title	Category	L	P	T	Credits	Remarks
1	MAC111	Mathematics-I	FC(BS)	4	0	0	**4**	Common to all branch
2	PHC112	Physics-I	FC(BS)	3	0	0	**3**	
3	CSC113	Programming in C	FC(CS)	3	0	1	**3**	
4	EEC114	Basic Electrical Engineering	FC(BE)	3	0	1	**3**	
5	HSC115	Communicative English	FC(HS)	3	0	0	**3**	
6	EEL116	Basic Electrical Lab.	FC(BE)	0	3	0	**2**	
7	CSL117	Programming in C Lab.	FC(CS)	0	3	0	**2**	
8	PHL118	Physics Lab.	FC(BS)	0	3	0	**2**	
						Total Credit:	**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**	Common to all branches
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 (Non-Credit)	FC(HS)	3	0	0	**0**	
6	ECL 126	Basic Electronics Lab.	FC(BE)	0	3	0	**2**	
7	EDC 127	Engineering Graphics Lab.	FC(BE)	0	3	0	**2**	
8	CSL 128	Data Structure using C Lab.	FC(CS)	0	3	0	**2**	
						Total Credit:	**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:	**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	4	
6	ECL 246	Analysis and Design of Algorithms Lab.	PC(CE)	0	3	0	2	
8	CSL 247	Microprocessors & Microcontrollers Lab.	FC(BE)	0	3	0	2	
9	MOC 248	Google Cloud Computing	MOOC	0	0	0	3	

		Foundations(MOOCs-1)						
						Total Credit:	**24**	

	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	CSC 354	Professional Elective-I	PE(CE)	3	0	0	**3**	
5	HSC 355	Engineering Economics	OE (OE)	3	0	1	**3**	
6	CSL 356	Database Management System Lab.	PC(CE)	0	3	0	**2**	
7	CSL 357	Web Technology Lab	PC(CE)	0	3	0	**2**	
8	MOC 358	Soft Skills and Personality Development (MOOCs-2)	MOOC	0	0	0	**3**	
						Total Credit:	**22**	

	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	Professional Elective-II	PE (CE)	3	0	1	**3**	
4	XXX XXX	Professional Elective-III	PE (CE)	4	0	0	**3**	
5	XXX XXX	Open Elective-I	IE (IE)	4	0	0	**3**	
6	CSL 364	Computer Network Lab	PC(CE)	0	3	0	**2**	
7	CSL 365	Software Engineering Lab	PC(CE)	0	3	0	**2**	
8	MOC 366	Python for Data Science (MOOCs-3)	MOOC	0	0	0	**2**	
						Total Credit:	**21**	

	Semester – VII							
S.No.	Course Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**	**Remarks**
1	CSC 471	Data Warehousing and Data Mining	PC(CE)	3	0	0	**3**	
2	CSC 472	Compiler Design	PC(CE)	3	0	0	**3**	
3	XXX XXX	Professional Elective-IV	PE (CE)	3	0	0	**3**	
4	XXX XXX	Professional Elective-V	PE (CE)	3	0	0	**3**	
5	XXX XXX	Open Elective-II	OE (OE)	3	0	0	**3**	
6	CSP 473	Minor Project	PP (PW)	4	0	0	**4**	
7	CSS 474	Seminar	TS(PW)				**1**	
8	MOC 475	Software Testing (MOOCs-4)	MOOC	0	0	0	**4**	
						Total Credit:	**24**	

	Semester – VIII							
S.No.	Course Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**	**Remarks**
1	XXX XX	Professional Elective-VI	PC(CE)	4	0	0	**3**	
2	XXX XXX	Open Elective-III	OE(OE)	3	0	0	**3**	
3	XXX XXX	Open Elective-IV	OE(OE)	3	0	0	**3**	
4	CSP 482	Major Project	PP (PW)	0	0	0	**10**	
5	CSV 483	Comprehensive Viva-voce	PP (CV)	0	0	0	**2**	
						Total Credit:	**21**	

SEMESTER WISE CREDIT DISTRIBUTION									
Year	Credit (40)		Credit (40)		Credit (40)		Credit (40)		
Semester	I	II	III	IV	V	VI	VII	VIII	TOTAL
Total Credit	22	20	21	24	22	21	24	21	175

OPEN ELECTIVES					
Open Elective-I					
Code	Course Title	L	P	T	Credits
OPE E01	Embedded Systems	4	0	0	3
OPE E02	Optimization Techniques	4	0	0	3
OPE E03	Management Information Systems	4	0	0	3
OPE E04	Digital Signal Processing	4	0	0	3
OPE E05	Middleware Technologies	4	0	0	3
Open Elective-II					
Code	Course Title	L	P	T	Credits
OPE E06	Internet of Things	3	0	0	3
OPE E07	Simulation and Modeling	3	0	0	3
OPE E08	Digital Image Processing	3	0	0	3
OPE E09	Soft Computing	3	0	0	3
OPE E10	Mobile Computing	3	0	0	3
Open Elective-III					
Code	Course Title	L	P	T	Credits
OPE E11	Information Theory and Coding	3	0	0	3
OPE E12	Pattern Recognition	3	0	0	3
HSC 483	Entrepreneurship Management	3	0	0	3
OPE E14	Computer Oriented Numerical Methods	3	0	0	3
Open Elective-IV					
Code	Course Title	L	P	T	Credits
OPE E15	Machine Learning	3	0	0	3
OPE E16	Software Project Management	3	0	0	3
OPE E17	Remote Sensing and Geographic Information Systems	3	0	0	3
OPE E18	Personal Development	3	0	0	3
OPE E19	E-Commerce	3	0	0	3

PROFESSIONAL ELECTIVES					
Professional Elective-I					
Code	Course Title	L	P	T	Credits
CSE E01	Computer Graphics	4	0	0	3
CSE E02	Web Technology	4	0	0	3
CSE E03	Real Time Systems	4	0	0	3
CSE E04	Advanced Operating Systems	4	0	0	3
CSE E05	Advanced Data Structures	4	0	0	3
Professional Elective-II					
Code	Course Title	L	P	T	Credits
CSE E06	Advanced Computer Architecture	4	0	0	3
CSE E07	Human Computer Interaction	4	0	0	3
CSE E08	Parallel Computing	4	0	0	3
CSE E09	Wireless Communications	4	0	0	3
CSE E10	Distributed Database Systems	4	0	0	3

Professional Elective-III					
Code	Course Title	L	P	T	Credits
CSE E11	Artificial Intelligence	4	0	0	3
CSE E12	Grid Computing	4	0	0	3
CSE E13	Semantic Web	4	0	0	3
CSE E14	Advanced Software Engineering	4	0	0	3
CSE E15	Storage Area Networks	4	0	0	3
Professional Elective-IV					
Code	Course Title	L	P	T	Credits
CSE E16	Wireless Sensor Networks	4	0	0	3
CSE E17	Distributed Systems	4	0	0	3
CSE E18	Software Design and Validations	4	0	0	3
CSE E19	High Performance Computing	4	0	0	3
CSE E20	Natural Language Processing	4	0	0	3
Professional Elective-V					
Code	Course Title	L	P	T	Credits
CSE E21	Cryptography and Network Security	4	0	0	3
CSE E22	Ethical Hacking	4	0	0	3
CSE E23	Introduction to Bioinformatics	4	0	0	3
CSE E24	Game Programming	4	0	0	3
Professional Elective-VI					
Code	Course Title	L	P	T	Credits
CSE E25	Cloud Computing	4	0	0	3
CSE E26	Big Data Analytics	4	0	0	3
CSE E27	Object Oriented Analysis and Design	4	0	0	3
CSE E28	Advanced Database Systems	4	0	0	3

N.B-

- **A student will be eligible to get B.Tech degree only if he/she completes the course work including the MOOCs courses recommended by the department.**
- **The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offering in Odd/Even Semesters by them.**
- **SWAYAM will 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 Computer Science and Application 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.

Department of Electronics & Communication Engineering
Curriculum of B. Tech(Electronics & Communication Engineering)
2017-21

First Semester (Structure Common to all branches)

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	SUBJECT Category
1.		Mathematics-I	3	1	0	4	4	BS&H
2.		Physics-I	3	1	0	4	4	BS&H
3.	Communicative English	English for Communication Or Ecology and Environmental Sciences	3	0	0	4	3	BS&H/HSS
4.		Basic Electrical Engineering Or Basic Electronics	3	1	0	4	4	EEE/EC
5.		Computer Programming in C Language	3	1	0	4	4	CSE
6.		Physics Lab	0	0	3	3	2	BS&H
7.		Basic Electrical Engineering Lab or Basic Electronics Lab	0	0	3	3	2	EEE/EC
8.		Computer Programming in C Lab	0	0	3	3	2	CSE
		Total	15	4	9	29	25	

Second Semester (Structure Common to all branches)

Semester-II

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Mathematics-II	3	1	0	4	4	BS&H
2.		Basic electronics or Basic Electrical Engineering	3	1	0	4	4	EC/EEE
3.		Object Oriented Programming using Java	3	1	0	4	4	CSE
4.		Physics-II	3	1	0	4	4	BS&H
5.	Environmental Studies	Ecology and Environment or English for Communication	3	0	0	4	3	HSS/BS&H
6.		Basic Electronics Lab or Basic Electrical Engineering Lab	0	0	3	3	2	EC/EEE
7.		Object Oriented Programming using Java Lab	0	0	3	3	2	CSE
8.	English Lab	Engineering Drawing Lab	0	0	3	3	2	CSE
	Lab	Total	15	4	9	29	25	

16/7/17 16/7/17 16/7/17

Third Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Mathematics-III	3	1	0	4	4	BS&H
2.		Signals and systems	3	1	0	4	4	EC
3.		Computer organization and architecture	3	1	0	4	4	CSE
4.		Analog electronics circuit	3	1	0	4	4	EC
5.		Network Analysis and synthesis	3	1	0	4	4	EEE
6.		Digital Circuit and System	3	1	0	4	4	EC
7.		Analog Electronics Lab	0	0	3	3	2	EC
8.		Digital Circuit Lab	0	0	3	3	2	EEE
		Total	18	6	6	30	28	

Fourth Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Mathematics-IV	3	1	0	4	4	BS&H
2.		Analog Communication Systems	3	1	0	4	4	EC
3.		Electronic Measurement and Instrumentation	3	1	0	4	4	EC
4.		Microprocessor and Microcontroller	3	1	0	4	4	EC
5.		Digital Signal Processing	3	1	0	4	4	EC
6.		Analog Communication Lab	0	0	3	3	2	EC
7.		Microprocessor and Microcontroller Lab	0	0	6	6	4	EC
		Total	15	5	9	29	26	

Fifth Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Digital Communication	3	1	0	4	4	EC
2.		Electromagnetic Theory	3	1	0	4	4	EC
3.		HSS Elective-I	3	0	0	3	3	HSS
4.		Open Elective-I (CNDP)	3	1	0	4	4	OE
5.		Program Elective-I	3	1	0	4	4	PE
6.		Digital Communication Lab	0	0	3	3	2	EC
7.		Digital Signal Processing Lab	0	0	3	3	2	EC
		Total	15	4	6	25	23	

Sixth Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Control Systems Engg-I	3	1	0	4	4	EEE
2.		Embedded Systems	3	1	0	4	4	EC
3.		VLSI Engineering	3	1	0	4	4	EC
4.		Program Elective-II	3	1	0	4	4	PE
5.		Open Elective-II	3	1	0	4	4	OE
6.		Embedded Systems lab	0	0	3	3	2	EC
7.		VLSI lab	0	0	3	3	2	EC
		Total	15	5	6	26	24	

Seventh Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Optical communication	3	1	0	4	4	EC
2.		Program Elective-III	3	1	0	4	4	PE
3.		Program Elective-IV	3	1	0	4	4	PE
4.		Open Elective-III	3	1	0	4	4	OE
5.		HSS Elective-II	3	0	0	3	3	HSS
6.		Optical Communication lab	0	0	3	3	2	EC
7.		Minor Project	0	0	6	6	4	
		Total	15	4	9	28	25	

Eighth Semester

S. No	Course codes	Course titles	L	T	P	Contact hours per week	Credits	Subject Category
1.		Major Project	0	0	9	9	6	
2.		Program Elective-V	3	1	0	4	4	PE
3.		Program Elective-VI	3	1	0	4	4	PE
4.	E	HSS Elective-III	3	0	0	4 3	3	HSS
5.		Comprehensive Viva	0	0	0	0	2	
		Total	9	3	9	17	19	

Total credit(1st to 8th semester)	194

List of Program Electives			
S .No	**Course codes**	**Course Titles**	**Credit**
1.		Information Theory and Coding	All 4 Credits Each
2.		Wireless Communication	
3.		CAD VLSI	
4.		Microwave Engineering	
5.		Satellite Communication	
6.		Radar & TV	
7.		Mobile Communication	
8.		Virtual Instrumentation	
9.		IC Technology	
10.		Speech and Audio Processing	
11.		Adaptive signal processing	
12.		Antennas and propagation	
13.		Bio-medical Instrumentation	
14.		Telephone Switching Network	
15.		Mixed signal design	
16.		Broadband Communication	
17.		Electrical Machines	
18		Advanced Microcontrollers	
19		Optical Communication	
20		Image and Video Processing	

List of Open Electives

S .No	**Course codes**	**Course Titles**	**Credit**
1.		Computer architecture and organization	All 4 Credits Each
2.		Computer networks and distributed processing	
3.		Power electronics	
4.		Digital image processing	
5.		Optimization technique	
6.		Advance database concepts	
7.		Wireless sensor networks	
8.		Advance computer architecture	
9.		Control System Engineering-II	
10.		Digital signal processing	
11.		Machine learning	
12.		Artificial intelligence	
13.		Database management system	
14.		Data structures	
15.		Probability and stochastic processes	
16.		Multimedia technology	
20		Principles of Communications	

HSS Electives

S. No	**Course Codes**	**Course Titles**	**Credit**
1.		Introduction to logic	3
2.		Life and Psychology	3
3.		Organization Behaviour	3
4.		Ecology and Environment	3
5.		Engineering Economics	3
6.		Entrepreneurial Management	3
7.		Society and Social Issues	3

M.Tech in Embedded System Design Syllabus

Semester-1

Code	Subject	Hour per week	Credits
	Digital VLSI Design	4	4
	FPGA Based System Design	4	4
	Elective-I	4	4
	Elective-II	4	4
	Elective-III	4	4
	Elective Lab-I	3	2
	VLSI Lab	3	2
			24

Semester-2

Code	Subject	Hour per week	Credits
	Analog VLSI	4	4
	Advanced Digital Signal Processing	4	4
	Elective-IV	4	4
	Elective-V	4	4
	Elective-VI	4	4
	Embedded Lab	3	2
	Elective Lab-II	3	2
			24

Semester-3

Code	Subject	credit
	Masters Research Project(Phase-I)	20
	Summer Project	2
		22

Semester-4

Code	Subject	Credit
CE 6502	Masters Research Project (Phase-II)	20
	Comprehenssive Viva	4
		24

Total Credits=94

16/7

16/7/17

16/7/17

16/7/17

List of Electives

1. ELECTRONIC CIRCUIT AND SYSTEM DESIGN
2. Microcontroller Systems Design
3. Embedded C & C++ Programming Languages
4. Embedded Operating Systems & Real time OS
5. Embedded Design Cycle
6. Algorithm and Model based design
7. WIRE AND WIRELESS COMMUNICATION
8. ACCESS TECHNOLOGIES AND SMART CARD
9. AUTOMOTIVE EMBEDDED SYSTEMS
10. Mobile computing using Embedded System
11. DSP on FPGA
12. VLSI ENGINEERING
13. WIRELESS SENSOR NETWORKS
14. Internet of Things

Elective Labs:

1. Embedded Lab
2. Microcontroller lab
3. Advance DSP lab
4. Internet of things lab
5. VLSI lab
6. FPGA Lab
7. Simulation techniques for wireless communication lab
8. Wireless channel modelling lab

16/7/17

16/7/17

Proceedings of Board of Studies meeting held on 20/3/2019 at 2.00 P.M. in SUIIT to finalize the course structure and syllabi of B. Tech(Electronics and Communication Engineering), M.Tech(Communication Systems Engineering), M.Tech(Embedded System Design) for the session 2019-23(for B.Tech programme),2019-21(for M.Tech Programmes).

Members Present:

1. Dr. Uma Ranjan Jena, Professor, Dept. of E&TC,VSSUT,Burla

2.Dr. Kabiraj Sethi, Associate Professor, Dept. of E&TC,VSSUT,Burla

3. Er. Madhusmita Sahoo, AGM, Hindalco

4.Mrs. Shibani Kar, Head I/C & Assistant Professor, Dept. of ECE,SUIIT

5. Mrs. Suchismita Pattanaik, Assistant Professor, Dept. of ECE,SUIIT

6.Mr. Premananda Mishra, Assistant Professor, Dept. of ECE,SUIIT

7.Ms. Swaroopa Patjoshi, Assistant Professor, Dept. of ECE,SUIIT

8.Mr. Bajra Panjar Mishra, Assistant Professor, Dept. of ECE,SUIIT

Minutes of meeting are as follows:

1. Members reviewed the course structure and syllabi of B. Tech ECE for the session 2019-23 and suggested some changes which are incorporated in the structure attached herewith.

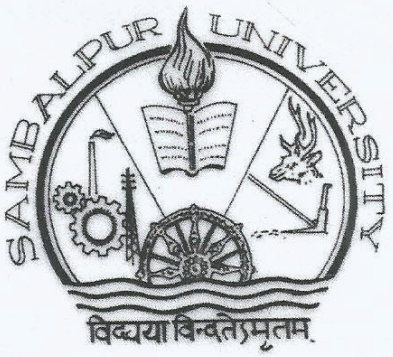
2. Members reviewed the course structure and syllabi of M. Tech Communication Systems Engineering and M. Tech Embedded System Design for the session 2019-21 and suggested some changes which are incorporated in the structure attached herewith.

Members Signatures

1. 20/03/19 — **Dr. Uma Ranjan Jena**
2. 20/3/19 — **Dr. Kabiraj Sethi**
3. **Er. Madhusmita Sahoo**
4. Skar 20/3/19 — **Mrs. Shibani Kar**
5. Spattanaik 20/03/19 — **Mrs. Suchismita Pattanaik**
6. 20/3/19 — **Mr. Premananda Mishra**
7. Spatjoshee 20/03/19 — **Ms. Swaroopa Patjoshi**
8. Mishra 20/03/2019 — **Mr. Bajra Panjar Mishra**

Academic Council (27/5/19)

27/05/19 — 27/05/19 — 27/5/19 — 27/5



SAMBALPUR UNIVERSITY

INSTITUTE OF INFORMATION TECHNOLOGY

JYOTI VIHAR, BURLA

Department of Electronics and Communication Engineering

Course Structure and Syllabus

(Approved by Board of Studies, March 20/3/2019)

Department of Electronics and Communication Engineering

Bachelor of Technology

in

Electronics and Communication Engineering

(Four Years Course)

(from the session 2019-23)

20/03/19 20/03/19 20/3/19 20/03/19 20/03/19

Department of Electronics & Communication Engineering-I
Curriculum of B. Tech (Electronics & Communication Engineering)
2019-2023

Semester-I
(Common to all branches)

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	MAC111	Mathematics-I	4	0	0	4	BS&H
2.	PHC112	Physics-I	3	0	0	3	BS&H
3.	CSC113	Programming in C	3	0	0	3	CSE
4.	EEC114	Basic Electrical Engineering	3	0	0	3	EEE
5.	HSC115	Communicative English	3	0	0	3	BS&H
6.	EEL116	Basic Electrical Engineering Lab	0	0	3	1.5	EEE
7.	CSL117	Programming in C Lab	0	0	4	2	CSE
8.	PHL118	Physics Lab	0	0	3	1.5	BS&H
		TOTAL	**16**	**0**	**10**	**21**	

Semester-II
(Common to all branches)

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	MAC121	Mathematics-II	4	0	0	4	BS&H
2.	PHC122	Physics-II	4	0	0	4	BS&H
2.	ECC123	Basic Electronics	3	0	0	3	ECE
3.	CSC124	Data Structures using C	3	0	0	3	CSE
4.	HSC125	Environmental Studies	3	0	0	Non Credit	BS&H
5.	ECL126	Basic Electronics Lab	0	0	3	1.5	ECE
6.	EDC127	Engineering Graphics Lab	0	0	3	1.5	BS&H
7.	CSL128	Data Structures using C Lab	0	0	4	2	CSE
		TOTAL	**17**	**0**	**10**	**19**	

Department of Electronics & Communication Engineering-I
Curriculum of B. Tech (Electronics & Communication Engineering)
2019-2023

SEMESTER-III

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	MAC231	Mathematics-III	4	0	0	4	BS&H
2.	ECC232	Analog Electronics Circuit	3	0	0	3	ECE
3.	EEC233	Network Analysis and Synthesis	3	0	0	3	EEE
4.	ECC234	Digital Circuit and System	3	0	0	3	ECE
5.	ECC235	Electronic Measurement & Instrumentation	3	0	0	3	ECE
6.	ECC236	Signal and System	3	0	0	3	ECE
7.	ECL237	Digital Circuit Lab	0	0	3	1.5	ECE
8.	ECL238	Analog Electronics Lab	0	0	3	1.5	ECE
		TOTAL	**19**	**0**	**6**	**22**	

Semester-IV

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	MAC241	Mathematics-IV	4	0	0	4	BS&H
2.	ECC242	Microprocessor and Microcontroller	3	0	0	3	ECE
3.		**Open Elective-I**	3	0	0	3	BS&H
4..	ECC244	Analog Communication Systems	3	0	0	3	ECE
5..	ECC245	Advance Electronic Circuit	3	0	0	3	ECE
6..	ECC246	Digital Signal Processing	3	0	0	3	ECE
7.	ECL247	Analog Communication Lab	0	0	3	1.5	ECE
8.	ECL248	Microprocessor and Microcontroller Lab	0	0	3	1.5	ECE
		TOTAL	**19**	**0**	**6**	**22**	

Department of Electronics & Communication Engineering-I
Curriculum of B. Tech (Electronics & Communication Engineering)
2019-2023

Semester- V

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	ECC351	Digital Communication	3	0	0	3	ECE
2.	ECC352	Electromagnetic Theory	3	0	0	3	ECE
3.		OE-II	3	0	0	3	BS&H
4.		OE-III	3	0	0	3	OE
5.		PE-I	3	0	0	3	PE
6.	ECL356	Digital Communication Lab	0	0	3	1.5	ECE
7.	ECL357	Digital Signal Processing Lab	0	0	3	1.5	ECE
		TOTAL	15	0	6	18	

VI Semester

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	EEC351	Control System Engineering-I	3	0	0	3	EEE
2.	ECC362	Embedded Systems	3	0	0	3	ECE
3.	ECC363	VLSI Engineering	3	0	0	3	ECE
4.		OE-IV	3	0	0	3	OE
5..		PE-II	3	0	0	3	PE
6.	ECL366	Embedded Systems Lab	0	0	3	1.5	ECE
7.	ECL367	VLSI Lab	0	0	3	1.5	ECE
		TOTAL	15	0	6	18	

Department of Electronics & Communication Engineering-I
Curriculum of B. Tech (Electronics & Communication Engineering)
2019-2023

VII SEMESTER

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	ECC471	Optical Communication	3	0	0	3	ECE
2.		PE-III	3	0	0	3	PE
3.		PE-IV	3	0	0	3	PE
4.		OE-V	3	0	0	3	PE
5..		OE-VI	3	0	0	3	BS&H
6.	ECL476	Optical Communication Lab	0	0	3	1.5	ECE
7.	ECP477	Minor Project	0	0	7	3.5	ECE
8.	ECC472	SEMINAR	0	0	2	1	ECE
		TOTAL	15	0	12	21	

VIII Semester

S .No	Course Codes	Course Titles	L	T	P	Credits	Subject Category
1.	ECP481	Major Project	0	0	16	8	ECE
2.		PE--V	3	0	0	3	PE
3.		PE-VI	3	0	0	3	PE
4.		OE-VII	3	0	0	3	BS&H
5.	ECV485	Comprehensive Viva	0	0	0	2	ECE
		TOTAL	9	0	16	19	

I	II	III	IV	V	VI	VII	VIII
21	19	22	22	18	18	21	19

Total Credit(1st to 8th semester)	160

List of Professional Electives

S. No	Course Codes	Course Titles	Credit
1.	ECE01	Information Theory and Coding	3
2.	ECE02	Wireless Communication	3
3.	ECE03	CAD VLSI	3
4.	ECE04	Microwave Engineering	3

5.	ECE05	Satellite Communication	3
6.	ECE06	Radar & TV	3
7.	ECE07	Mobile Communication	3
8.	ECE08	Virtual Instrumentation	3
9.	ECE09	IC Technology	3
10.	ECE10	Speech and Audio Processing	3
11.	ECE11	Adaptive Signal Processing	3
12.	ECE12	Antennas and Propagation	3
13.	ECE13	Bio - medical Instrumentation	3
14.	ECE14	Telephone Switching Network	3
15.	ECE15	Mixed Signal Design	3
16.	ECE16	Broadband Communication	3
17.	ECE17	Electrical Machines	3
18.	ECE18	Advanced Micro-controllers	3
19.	ECE19	Image and Video Processing	3

List of Open Electives

S. No	Course Codes	Course Titles	Credit
1.	CSC354	Computer Networks	3
2.	EEC352	Power Electronics	3
3	OPEE08	Digital Image Processing	3
4.	OPEE02	Optimization Techniques	3
5.	CSEE28	Advance Database	3
6.	CSEE16	Wireless Sensor Network	3
7.	CSEE06	Advance Computer Architecture	3
8.	EEC362	Control System Engineering-II	3
9.	OPEE15	Machine Learning	3
10.	CSEE11	Artificial Intelligence	3
11.	CSC353	Database Management System	3
13.		Probability and Stochastic Processes	3
15.	ECOE01	Principles of Communications /OR Communication Systems Engineering	3
17.	CSC235	Computer Organization & Architecture	3
		Dept. of BS&H	
18.	HSC243	Organization Behaviour	3
19.	HSC355	Engineering Economics & Costing	3

20.		Life and Psychology	3
21.		Ecology and Environment	3
22.	HSC483	Entrepreneurial Management	3
23.		Society and Social Issues	3

SAMBALPUR UNIVERSITY INSTITUTE OF INFORMATION TECHNOLOGY, JYOTI VIHAR, BURLA

Department of Electrical and Electronics Engineering

Bachelor of Technology in Electrical & Electronics Engineering

(Four Years Course) 2017-21

First Semester.

No	Subject Code	Subject	Credit
1		Mathematics-I	4
2		Physics – I	4
3		Computer Programming in C	4
4	EEE101	Basic Electrical Engineering OR Basic Electronics Engineering	4
5		English for communication OR Ecology & Environmental Science	3
		LABORATORY	
1	EEEL102	Basic Electrical Engg Lab OR Basic Electronics Lab	2
2		Programming in C Lab	2
		Physics Lab	2

Second Semester.

No	Subject Code	Subject	Credit
1		Mathematics-II	4
2	EEE101	Basic Electrical Engineering OR Basic Electronics Engineering	4
3		Ecology & Environmental Science OR English for communication	3
4		Object Oriented Programming Using JAVA	4
5		Physics-II	4
		LABORATORY	
1		Basic Electrical Engg Lab OR Basic Electronics Lab	2
2		Engineering Drawing	2
3		Object Oriented Programming Using JAVA Lab	2

16/7/17 16/7/2017 16.7.17 16/7 16/7/17

Third Semester.

No	Subject Code	Subject	Credit
1		Engineering Economics & Costing **OR** Organization Behaviour	3
2	EEE201	Network Analysis & Synthesis	4
3	EEE202	Electrical Machine-I	4
4		Mathematics-III	4
5		Analog Electronics Circuits	4
LABORATORY			
1	EEEL203	Network Analysis & Synthesis Lab	2
2	EEEL204	Electrical machine-I Lab	2
3		Analog Electronics Circuit Lab	2

Fourth Semester.

No	Subject Code	Subject	Credit
1		Mathematics IV	4
2		Engineering Economics & Costing **OR** Organization Behaviour	3
3	EEE205	Electrical machine-II	4
4		Signal and System	4
5		Digital Electronics Circuits	4
LABORATORY			
1	EEEL206	Electrical machine-II Lab	2
2		Digital Electronics Circuit	2
		Simulation Lab	2

16/7/2017 16/7 16/7/17

16/7/17 16.7.17

2

Fifth Semester.

No	Subject Code	Subject	Credit
1		Microprocessor and Micro controllers	4
2	EEE301	Power Station Engineering	4
3	EEE302	Control system Engineering-I	4
4	EEE303	Power Electronics	4
5		Electromagnetic field Theory	4
		LABORATORY	
1	EEEL304	Control & Instruentation System Lab	2
2	EEEL305	Power Electronics Lab	2
3		Micro Processor & Micro Controller Lab	2

Sixth Semester.

No	Subject Code	Subject	Credit
1	EEE306	Electrical power Transmission and Distribution Systems	4
2	EEE307	Electrical and Electronics Measurement	4
3	EEE308	Control System Engineering-II	4
4		Digital Signal Processing	4
5	EEE309	*Electrical Drives *Opto-Electronics Devices and Instrumentation *Industrial Instrumentation * Utilization of Electrical Energy *Bio-medical Instrumentation * Internet Of Things (Any One)	4
		LABORATORY	
1	EEEL310	Electrical and Electronics Measurement Lab	2
2		Digital Signal Processing Lab	2
3	EEEL311	Machine Design and Simulation Lab	2

16/7/17 16/7/2017 16/7 16/7/17 6.7.17

Seventh Semester.

No	Subject Code	Subject	Credit
1	EEE401	Power System Operation and Control	4
2	EEE402	Renewable Energy Systems	4
3		Flexible AC Transmission Systems	4
4	EEE403	*HVDC Transmission * Power Quality *Mobile Communication *Adaptive & Optimal Control (Any One)	4
5		VLSI Theory and Design	4
		LABORATORY	
1	EEEL404	Power System & Simulation Lab	2
2	EEEP405	Minor Project	2
3	EEES406	Seminar	2

Eighth Semester.

No	Subject Code	Subject	Credit
1	EEE407	Power system Protection	4
2	EEE408	Electrical Engineering Material	4
3		*Satellite Communication Systems *Digital Image Processing *Entrepreneurial Management *Embedded Systems (Any One)	4
4			
5			
		LABORATORY	
1	EEEV408	Comprehensive Viva	2
2	EEEP409	Major Project	8

16/7/17 16/7/2017 4 16/7/17

Course Scheme and Syllabus

For

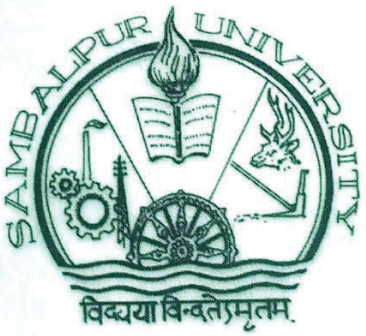
Bachelor of Technology

in

Electrical & Electronics Engineering

(Four Years Course)

2019-2023



SAMBALPUR UNIVERSITY INSTITUTE OF INFORMATION TECHNOLOGY

JYOTI VIHAR, BURLA

First Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	MAC111	Mathematics-1	3	1	0	4	4
2	PHC112	Physics-1	3	1	0	4	3
3		Programming in C	3	1	0	4	3
4	EEC114	Basic Electrical Engineering	3	1	0	4	3
5	HSC115	Communicative English	3	1	0	4	3
Laboratory Courses							
6	EEL116	Basic Electrical Laboratory	0	0	3	3	1.5
7		Programming in C Laboratory	0	0	4	4	2
8	PHL118	Physics-1 Laboratory	0	0	3	3	1.5
Total Credits							21

Second Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	MAC121	Mathematics-2	4	0	0	4	4
2	PHC122	Physics-2	3	1	0	4	4
3	ECC123	Basic Electronics	3	1	0	4	3
4		Data Structure Using C	3	1	0	4	3
5	HSC125	Environmental Studies	3	1	0	4	0
Laboratory Courses							
6	ECL126	Basic Electronics Laboratory	0	0	3	3	1.5
7	EDC127	Engineering Graphics Lab	0	0	3	3	1.5
8	CSL128	Data Structure Laboratory	0	0	4	4	2
Total Credits							19

Third Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	MAC231	Mathematics-3	3	1	0	4	4
2	ECC232	Analog Electronics Circuit	3	1	0	4	3
3	EEC233	Network Analysis and Synthesis	3	1	0	4	3
4	EEC234	Electrical Machine - 1	3	1	0	4	3
5		Electromagnetic Field Theory	3	1	0	4	4
Laboratory Courses							
6	EEL236	Electrical Machine-1 Laboratory	0	0	3	3	1.5
7	EEL237	Network Analysis and Synthesis Laboratory	0	0	3	3	1.5
8	ECC238	Analog Electronics Laboratory	0	0	3	3	1.5
Total Credits							21.5

Fourth Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	MAC241	Mathematics-4	3	1	0	4	4
2		Digital Circuits and Systems	3	1	0	4	3
3	HSC243	Organizational Behaviour	3	1	0	4	3
4	EEC244	Electrical Machine – 2	3	1	0	4	3
5		Signal and System	3	1	0	4	3
Laboratory Courses							
6	EEL246	Electrical Machine-2 Laboratory	0	0	3	3	1.5
7		Digital Electronics Laboratory	0	0	3	3	1.5
Total Credits							19

Fifth Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	EEC351	Control System Engineering-I	3	1	0	4	3
2	EEC352	Power Electronics	3	1	0	4	3
3		[Professional Elective-1]	3	1	0	4	3
4		[Open Elective-1]	3	1	0	4	3
5	HSC355	Engineering Economics	3	1	0	4	3
Laboratory Courses							
6	EEL356	Control System Laboratory	0	0	3	3	1.5
7	EEL357	Power Electronics Laboratory	0	0	3	3	1.5
8	ECL358	Microprocessor and Microcontroller Laboratory	0	0	3	3	1.5
Total Credits							19.5

Sixth Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	EEC361	Electrical Power Transmission and Distribution System	3	1	0	4	4
2	EEC362	Control System Engineering -2	3	1	0	4	4
3		[Professional Elective-2]	3	0	0	4	3
4		[Professional Elective – 3]	3	0	0	4	3
5		[Open Elective-2]	3	0	0	4	3
Laboratory Courses							
6	EEL366	Measurement and Instrumentation Laboratory	0	0	3	3	1.5
7	EEL367	Electrical Engineering Simulation Laboratory	0	0	3	3	1.5
8	ECL368	Digital Signal Processing Laboratory	0	0	3	3	1.5
Total Credits							21.5

Seventh Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	EEC471	Power System Operation and Control	3	1	0	4	4
2		[Professional Elective-4]	3	1	0	4	3
3		[Professional Elective-5]	3	1	0	4	3
4		Open Elective-3	3	1	0	4	3
Laboratory Courses							
5	EEL475	Power System Simulation Laboratory	0	0	3	3	1.5
6	EES476	Seminar	0	0	3	3	2
7	EEP477	Minor Project	0	0	3	3	2
Total Credits							18.5

Eighth Semester

Sl. No	Course Code	Course Title	Hours Per Week			Total Contact Hours	Credit
			Lecture	Tutorial	Practical		
1	EEC481	Power System Protection	3	1	0	4	4
2		Professional Elective-6	3	1	0	4	3
3		Open Elective-4	3	1	0	4	3
Laboratory Courses							
4	EEV485	Comprehensive Viva	0	0			2
5	EEP484	Major Project	0	0			8
Total Credits							20

Total Credit (Sem-1 to Sem-8) = 160

Subhransu Padhee 20/3/19 20/3/19

(S. Padhee)

20/3/19 20/3/19

20.3.19

SECTION-C
Syllabus Structure
(Masters in Science in Computer Science)

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 511	Mathematics Foundation	Foundation	4	0	0	4
CS 512	Statistical Methods for Computing	Foundation	4	0	0	4
CS 513	Digital Circuits and Systems	Core	4	0	0	4
CS 514	Programming in C	Core	3	0	1	4
CS 515	Data Structure and Algorithm	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Digital Electronics lab.	Core	0	3	0	2
					Total Credit:	24

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 521	Linear Algebra and Calculus	Foundation	4	0	0	4
CS 522	Theory of Computation	Core	4	0	0	4
CS 523	Operating Systems	Core	4	0	0	4
CS 524	Object Oriented Programming with C++	Core	3	0	1	4
CS 525	Computer Organization and Architecture	Core	4	0	0	4
CS 526	Object Oriented Programming Lab.	Core	0	3	0	2
CS 527	Operating Systems Lab.	Core	0	3	0	2
					Total Credit:	24

Semester – III							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 531	Database Management System		Core	3	0	1	4
CS 532	Computer Graphics		Core	4	0	0	4
CS 533	Data Communications and Computer Networks		Core	4	0	0	4
CS 534	Compiler Design		Core	4	0	0	4
XX XXXX	Elective-I		Prog. Elect.	4	0	0	4
	CS 53E1	Mobile Computing					
	CS 53E2	Information Retrieval System					
	CS 53E3	Information Security					
	CS 53E4	Management Information System					
CS 535	Database Management Systems Lab		Core	0	3	0	2
CS 536	UML Lab.		Core	0	3	0	2
						Total Credit:	24

Semester – IV							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 541	Software Engineering		Core Course	4	0	0	4
CS 542	Artificial Intelligence		Core Course	4	0	0	4
CS 543	Ecology and Environment		Foundation	4	0	0	3
XX XXXX	Elective-II		Prog. Elect.	4	0	0	4
	CS 54E1	Data Mining and Data Warehousing					
	CS 54E2	Wireless Sensor Networks					
	CS 54E3	Cloud Computing					
	CS 54E4	Simulation Modeling					
	CS 54E5	Introduction to Big Data Analytics					
CS 544	Project		Project Work	-	-	-	8
CS 545	Seminar		Tech. Seminar	-	-	-	1
						Total Credit:	24

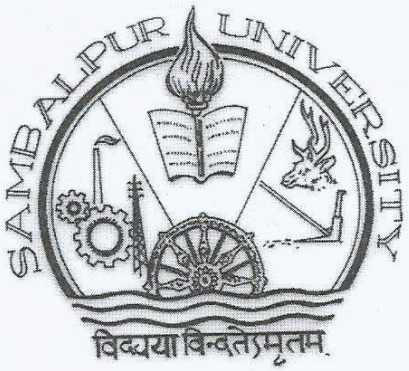
SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**24**	**24**	**24**	**24**	96

Sushree S. Pradhan 16.07.2017

(7)

Syllabus Structure

M.Sc.(Computer Science)



(Effective from the academic Session 2019-2020)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

20/3/19 20/3/19 Sushree S. Pradhan

20/3/2019 20.3.19 20.3.19 20/3/19 20.3.19

20/3/19 20/3/19 Kalyan Das 20/3/2019

20.3.19

Syllabus Structure
M.Sc.(Computer Science)

Semester – I

Code	Course Title	Category	L	P	T	Credits
CS 511	Discrete Mathematics	Foundation	4	0	0	4
CS 512	Programming in C	Foundation	4	0	0	4
CS 513	Computer System Architecture	Core	4	0	0	4
CS 514	Database Management System	Core	3	0	1	4
CS 515	Data Communications and Computer Networks	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Database Management System Lab.	Core	0	3	0	2
					Total Credit:	**24**

Semester – II

Code	Course Title	Category	L	P	T	Credits
CS 521	Object Oriented Programming	Foundation	4	0	0	4
CS 522	Theory of Computation	Core	4	0	0	4
CS 523	Software Engineering	Core	4	0	0	4
CS 524	Data Structure	Core	3	0	1	4
CS 525	Operating system	Core	4	0	0	4
CS 526	Object Oriented Programming Lab.	Core	0	3	0	2
CS 527	Data Structure Lab.	Core	0	3	0	2
CS528	Software Engineering Lab.					2
					Total Credit:	**26**

Semester – III

Code	Course Title		Category	L	P	T	Credits
CS 531	Compiler Design		Core	3	0	1	4
CS 532	Design and analysis of Algorithm		Core	4	0	0	4
CS 533	Computer Graphics		Core	4	0	0	4
CS 534	Web Technology		Core	4	0	0	4
XX XXXX	Elective-I		Prog. Elect.				
	CS 53E1	Mobile Computing		4	0	0	4
	CS 53E2	Information Retrieval System					
	CS 53E3	Optimization Techniques					
	CS 53E4	Management Information System					
CS 535	Web Technology Lab.		Core	0	3	0	2
CS 536	Open Source Lab.		Core	0	3	0	2
						Total Credit:	**24**

Semester – IV

Code	Course Title		Category	L	P	T	Credits
CS 541	Data Warehousing and Data Mining		Core Course	4	0	0	4
CS 542	Artificial Intelligence		Core Course	4	0	0	4
XX XXXX	Elective-II		Prog. Elect.				
	CS 54E1	Wireless Sensor Networks		4	0	0	4
	CS 54E2	Cloud Computing					
	CS 54E3	Simulation Modeling					
	CS 54E4	Introduction to Big Data Analytics					
	CS 54E5	Cyber Security					
CS 543	Project		Project Work	-	-	-	8
CS 544	Seminar		Tech. Seminar	-	-	-	2
						Total Credit:	**22**

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	I	II	III	IV	TOTAL
Total Credit	24	26	24	22	96

20/3/2019 20.3.19 20.3.19 20/3/19 20/3/19 20/3/19 20/3/19 Sushree S. Pradhan 20.3.19 20.3.19 Kalyan Das 20/3/2019

Course Structure

M.Sc. (Computer Science)

(Effective from the academic Session 2020-2021)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

Syllabus Structure

M.Sc.(Computer Science)

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 511	Mathematical Foundations of Computer Science	Foundation	4	0	0	4
CS 512	Programming in C	Foundation	4	0	0	3
CS 513	Computer Systems Architecture	Core	4	0	0	4
CS 514	Database Management Systems	Core	3	0	1	3
CS 515	Data Communication and Computer Networks	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Database Management Systems Lab.	Core	0	3	0	2
					Total Credit:	**22**
Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 521	Object Oriented Programming using Java	Foundation	3	0	0	3
CS 522	Theory of Computations	Core	3	0	0	4
CS 523	Software Engineering	Core	3	0	0	3
CS 524	Data Structures	Core	3	0	1	3
CS 525	Operating Systems	Core	3	0	0	3
CS 526	Object Oriented Programming using Java Lab.	Core	0	3	0	2
CS 527	Data Structures Lab.	Core	0	3	0	2
MOC528	Google Cloud Computing Foundations (MOOCs-1)	MOOC	3	0	0	3
					Total Credit:	**23**
Semester – III						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 531	Compiler Design	Core	3	0	1	3
CS 532	Design and Analysis of Algorithms	Core	4	0	0	4
CS 533	Computer Graphics	Core	4	0	0	3
CS 534	Web Technology	Core	4	0	0	3
XX XXXX	Elective-I	Prog. Elect.				
	CS 53E1 Mobile Computing		4	0	0	3
	CS 53E2 Information Retrieval Systems					
	CS 53E3 Optimization Techniques					
	CS 53E4 Management Information Systems					
	CS53E5 Computer Based Numerical and Statistical Methods		4	0	0	
CS 535	Web Technology Lab.	Core	0	3	0	2
CS 536	Python Programming Lab.	Core	0	3	0	2
MOC 537	Big Data Computing (MOOCs-2)	MOOC	3	0	0	3
					Total Credit:	**23**
Semester – IV						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 541	Data Warehousing and Data Mining	Core Course	4	0	0	4
CS 542	Artificial Intelligence	Core Course	4	0	0	4
XX XXXX	Elective-II	Prog. Elect.				
	CS 54E1 Wireless Sensor Networks		4	0	0	4
	CS 54E2 Cloud Computing					
	CS 54E3 Machine Learning					
	CS 54E4 Introduction to Big Data Analytics					
	CS 54E5 Information & Cyber Security					
CS 543	Project	Project Work	-	-	-	8
CS 544	Seminar	Tech. Seminar	-	-	-	2
					Total Credit:	**22**

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**22**	**23**	**23**	**22**	90

N.B-

- **A student will be eligible to get M.Sc. degree only if he/she completes the course work including the MOOCs courses recommended by the department.**
- **The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offering in Odd/Even Semesters by them.**
- **SWAYAM will 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 Computer Science and Application 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.

SAMBALPUR UNIVERSITY
INSTITUTE OF INFORMATION TECHNOLOGY
JYOTI VIHAR, BURLA

Draft Syllabus for

Department of Electronics (M. Sc.)

(Two Years Course) 2019-21

M.Sc. ELECTRONICS

Semester – I		
Code	**Course Title**	**Credits**
EL511	Mathematics Foundation for Electronics	4
EL512	Signals & Systems	4
EL513	C Programming and Data Structure	4
EL514	Network and Circuit Theory	4
EL515	Electronics Devices and Circuits	4
EL516	C Programming and Data Structure Lab.	2
EL517	Electronics Devices and Circuits Lab	2
	Total Credit:	24

Semester – II		
Code	**Course Title**	**Credits**
EL521	Digital Circuits and Systems	4
EL522	Analog and Digital Communication Techniques	4
EL523	Electromagnetic Field Theory and Antenna	4
EL524	Computer Organization and Architecture	4
EL525	Professional Elective – I	4
EL526	Digital Circuit Lab	2
EL527	Communication Lab	2
	Total Credit:	24

Semester – III		
Code	**Course Title**	**Credits**
EL531	VLSI Design	4
EL532	Biomedical Instrumentation	4
EL533	Microprocessor and Microcontroller	4
EL534	Instrumentation and Control System	4
EL535	Professional Elective-II	4
EL536	VLSI Design Lab	2
EL537	Microprocessor and Microcontroller Lab	2
	Total Credit:	24

Semester – IV		
Code	**Course Title**	**Credits**
EL541	Laser and Opto-Electronics	4
EL542	Professional Elective-III	3
EL543	Professional Elective-IV	4
EL544	Opto- Electronics Lab	2
EL545	Major Project	10
	Total Credit:	23

20/03/17

LIST OF PROFESSIONAL ELECTIVES	
Code	**Course Title**
	Basics of IC Design
	Artificial Intelligence and Deep Learning
	Numerical Methods And Computational Techniques
	Digital design with VHDL
	VLSI and CAD
	Digital Image Processing
	Computer Vision & Image Processing
	Robotics
	Modern Instrumentation and Measurement
	Wired and Wireless Communication
	Wireless Sensor Networks
	Advanced Communication Techniques
	Virtual Instrumentation, Sensors and Transducers
	Mobile Communication
	Mobile Computing
	Soft Computing
	Microwave and Antenna Theory
	Optical Communication

20/03/19

MTech in Communication System Engineering Syllabus

Semester-1

Code	Subject	Hour per week	Credits
	Probability and Stochastic Processes	4	4
	Advance Digital Signal Processing	4	4
	Elective-I	4	4
	Elective-II	4	4
	Elective-III	4	4
	Elective Lab-I	3	2
	Advance Digital Signal Processing Lab	3	2
			24

Semester-2

Code	Subject	Hour per week	Credits
	Advanced Communication Theory	4	4
	Wireless Communication	4	4
	Elective-IV	4	4
	Elective-V	4	4
	Elective-VI	4	4
	Advanced Communication Theory Lab	3	2
	Elective Lab-II	3	2
			24

16/7/17

16/7/17

16/7/17

Semester-3

Code	Subject	credit
	Masters Research Project(Phase-I)	20
	Summer Project	2
		22

Semester-4

Code	Subject	Credit
CE 6502	Masters Research Project (Phase-II)	20
	Comprehenssive Viva	4
		24

Total Credits=94

16/7
16/7/17
16/7/17

List of Electives

1. MOBILE SATELLITE COMMUNICATION
2. Detection and Estimation
3. RANDOM PROCESSES AND QUEUEING THEORY
4. WIRELESS NETWORKS AND MOBILE COMPUTING
5. RF MEMS
6. Integrated Opto-Electronics
7. Wireless sensor Network
8. Advanced Techniques for Wireless Reception
9. Secure Communication
10. Communication Switching & Multiplexing
11. Signal Compression
12. APPLICATION SPECIFIC INTEGRATED CIRCUITS
13. Error Control Coding
14. Digital Image Processing
15. Digital Speech Processing
16. CAD VLSI
17. Adaptive Signal Processing
18. Internet of Things
19. RF and Microwave system
20. Optical communication
21. Optical Network
22. Digital Mobile system
23. VLSI Engineering

SKar 16/7/17 16/7/17

List of Elective Lab

1. Optical communication Lab
2. Communication Design and simulation Lab
3. Free Space optical communication lab
4. Simulation techniques for wireless communication lab
5. Antenna design lab
6. Wireless channel modeling lab
7. Embedded system Lab
8. VLSI Lab
9. Statistical simulation lab
10. HFSS lab
11. Internet of things(IOT) Lab
12. Adaptive signal processing lab

16/7/17 16/7/17

SECTION-C
Syllabus Structure
(Masters in Science in Computer Science)

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 511	Mathematics Foundation	Foundation	4	0	0	4
CS 512	Statistical Methods for Computing	Foundation	4	0	0	4
CS 513	Digital Circuits and Systems	Core	4	0	0	4
CS 514	Programming in C	Core	3	0	1	4
CS 515	Data Structure and Algorithm	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Digital Electronics lab.	Core	0	3	0	2
					Total Credit:	24

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 521	Linear Algebra and Calculus	Foundation	4	0	0	4
CS 522	Theory of Computation	Core	4	0	0	4
CS 523	Operating Systems	Core	4	0	0	4
CS 524	Object Oriented Programming with C++	Core	3	0	1	4
CS 525	Computer Organization and Architecture	Core	4	0	0	4
CS 526	Object Oriented Programming Lab.	Core	0	3	0	2
CS 527	Operating Systems Lab.	Core	0	3	0	2
					Total Credit:	24

Semester – III							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 531	Database Management System		Core	3	0	1	4
CS 532	Computer Graphics		Core	4	0	0	4
CS 533	Data Communications and Computer Networks		Core	4	0	0	4
CS 534	Compiler Design		Core	4	0	0	4
XX XXXX	Elective-I		Prog. Elect.	4	0	0	4
	CS 53E1	Mobile Computing					
	CS 53E2	Information Retrieval System					
	CS 53E3	Information Security					
	CS 53E4	Management Information System					
CS 535	Database Management Systems Lab		Core	0	3	0	2
CS 536	UML Lab.		Core	0	3	0	2
						Total Credit:	24

Semester – IV							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 541	Software Engineering		Core Course	4	0	0	4
CS 542	Artificial Intelligence		Core Course	4	0	0	4
CS 543	Ecology and Environment		Foundation	4	0	0	3
XX XXXX	Elective-II		Prog. Elect.	4	0	0	4
	CS 54E1	Data Mining and Data Warehousing					
	CS 54E2	Wireless Sensor Networks					
	CS 54E3	Cloud Computing					
	CS 54E4	Simulation Modeling					
	CS 54E5	Introduction to Big Data Analytics					
CS 544	Project		Project Work	-	-	-	8
CS 545	Seminar		Tech. Seminar	-	-	-	1
						Total Credit:	24

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**24**	**24**	**24**	**24**	96

Sushree S. Pradhan 16.07.2017

SECTION-D

Syllabus Structure

(Masters in Technology in Computer Science and Engineering)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
CS 611	Foundations of Mathematics	Foundation Course	4	0	0	4
CS 612	Advanced Data structures and Algorithms	Core Course	4	0	0	4
CS 613	Advanced Programmed Languages	Core Course	3	0	0	4
XX XXXX	Elective –I	Programme Elective	3	0	1	4
XX XXXX	Elective –II	Programme Elective	3	0	0	4
CS 614	Open source lab	Core Course	0	3	0	2
CS 615	Advanced programming lab.	Core Course	0	3	0	2
CS 616	Seminar & Technical Writing-I	Technical Seminar	-	-	-	2
					Total Credit:	26

Semester-I Elective Pool (for Elective-I and Elective-II)	
CS 61E1	Image Processing
CS 61E2	Information retrieval and web search
CS 61E3	Pattern Recognition
CS 61E4	Advanced Computer Networking
CS 61E5	Advanced Databases
CS 61E6	Advanced Computer Architecture
CS 61E7	Mobile Computing
CS 61E8	Principles of Programming Languages
CS 61E9	Intellectual Property Rights and Cyber Laws
CS 61E10	Formal Language and Automata Theory

Semester – II						
Code	Course Title	Category	L	P	T	Credits
CS 621	Artificial intelligence	Core Course	4	0	0	4
CS 622	Software Engineering	Core Course	4	0	0	4
XX XXXX	Elective –III	Programme Elective	3	0	0	4
XX XXXX	Elective –IV	Programme Elective	3	0	1	4
XX XXXX	Elective –V	Programme Elective	3	0	0	4
CS 623	Network programming lab.	Core Course	0	3	0	2
CS 624	Seminar and technical writing-II	Technical Seminar	-	-	-	2
					Total Credit:	24

Semester-II Elective Pool (for Elective-III, Elective-IV, and Elective-V)	
CS 62E1	Cryptography and Network Security
CS 62E2	Internet of Things
CS 62E3	Storage Area Networks
CS 62E4	Game Theory
CS 62E5	Data warehousing and data Mining
CS 62E6	Machine Learning
CS 62E7	Big Data Analytics
CS 62E8	Cloud Computing
CS 62E9	Soft Computing
CS 62E10	Embedded Systems
CS 62E11	Wireless Sensor Network & Applications
CS 62E12	Semantic Web and Social Networking
CS 62E13	Advanced Operating Systems
CS 62E14	Software Project Management
CS 62E15	Parallel algorithms

16.7.17 16/7/17 Sushree S. Pradhan 16.07.17 16/07/2017

Amrit 16/7/2017 Kalyan Das 16/7/2017

Semester – III			
Code	Course Title	Category	Credits
CS 631	Project Work Review-I Comprehensive Viva-Vice	Project Work	12
		Total Credit:	12

Semester – IV			
Code	Course Title	Category	Credits
CS 641	Project Work Review-II Project Evaluation (Viva-Voce)	Project Work	20
		Total Credit:	20

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	I	II	III	IV	TOTAL
Total Credit	26	24	12	20	82

Special Instructions:

- **Selection of Electives:** For Elective-I/II choose two different courses from Elective Pool-I and for Electives-III/IV/V choose three different courses.
- **SEMINAR AND TECHNICAL WRITING-I&II:** Student will review research papers published in referred journals (at least six different papers in an installment of two seminars). In this work student will prepare and display posters, prepare and submit synopsis, give seminar on the topic. All faculty members / teachers council of the department will be the reviewer of the course. Equal weightage will be given to Seminal and Technical writing.
- **DISSERTATION – I:** Third Semester dissertation evaluation as per the Academic guide lines of SUIIT.
- **DISSERTATION – II:** Fourth semester or final dissertation and student will be allowed only if after successful completion of third semester project evaluation and the evaluation will be as per the Academic guide lines of SUIIT.

Sushmee S. Pradhan
16.07.2017

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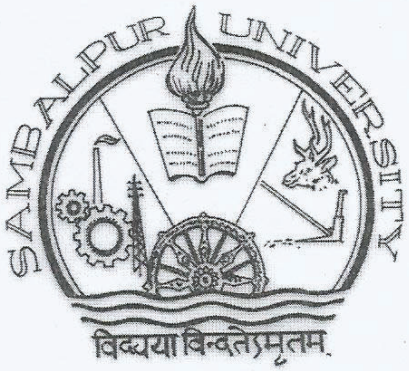
Syllabus Structure

M. Tech. (Computer Science & Engineering)



(Effective from the academic Session 2019-2020)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

20.3.19 20/3/19 20/3/19 20/3/19 Sushree S. Pradhan

20/3/2019 20.3.19 20/03/19 20/03/19 SKB 20.3.19 20.3.19 Kalyan Das 20/3/2019

Syllabus Structure
(Master of Technology in Computer Science and Engineering)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
CS 611	Mathematic Foundation for Computer Science	Foundation Course	4	0	0	4
CS 612	Advanced Data structure and Algorithms	Core Course	4	0	0	4
CS 613	Advanced Programming languages	Core Course	3	0	1	4
XX XXXX	Elective –I	Programme Elective	3	0	1	4
XX XXXX	Elective –II	Programme Elective	3	0	1	4
CS 614	Open source lab-1	Core Course	0	3	0	2
CS 615	Advanced Programmed lab.	Core Course	0	3	0	2
CS 616	Seminar & Technical Writing-I	Technical Seminar	-	-	-	2
					Total Credit:	26

Semester – II						
Code	Course Title	Category	L	P	T	Credits
CS 621	Cryptography and Network Security	Core Course	4	0	0	4
CS 622	Data warehousing and data Mining	Core Course	4	0	0	4
XX XXXX	Elective –III	Programme Elective	3	0	0	4
XX XXXX	Elective –IV	Programme Elective	3	0	1	4
XX XXXX	Elective –V	Programme Elective	3	0	0	4
CS 623	Network programming lab.	Core Course	0	3	0	2
CS 624	Seminar and technical writing-II	Technical Seminar	-	-	-	2
					Total Credit:	24

Semester – III						
Code	Course Title	Category	L	P	T	Credits
CS 631	Elective –VI	Programme Elective	4	0	0	4
CS 632	Elective –VII	Programme Elective	4	0	0	4
CS 633	Dissertation Review-I	Project Work	-	-	-	12
	Total Credit:					20

These two courses may be removed and two remedial Project should be there.

Semester – IV			
Code	Course Title	Category	Credits
CS 641	Final Dissertation Review	Project Work	20
		Total Credit:	20

20/3/2019 20.3.19 20.3.19 20/3/19 20/3/19 Sushree S. Pradhan 20/3/19 20/3/19 20.3.19 20.3.19 20/3/2019

Elective Pool (for Elective-I to VII)	
CS 6E01	Artificial Intelligence
CS 6E02	Information retrieval and web search
CS 6E03	Pattern Recognition
CS 6E04	Advanced Computer Networking
CS 6E05	Advanced Databases
CS 6E06	Advanced Computer Architecture
CS 6E07	Mobile Computing
CS 6E08	Principles of Programming Languages
CS 6E09	Intellectual Property Rights and Cyber Laws
CS 6E10	Formal Language and Automata Theory
CS 6E11	Image Processing
CS 6E12	High Performance Computing
CS 6E13	Internet of Things
CS 6E14	Storage Area Networks
CS 6E15	Game Theory
CS 6E16	Software define network
CS 6E17	Machine Learning
CS 6E18	Big Data Analytics
CS 6E19	Cloud Computing
CS 6E20	Soft Computing
CS 6E21	Real time system
CS 6E22	Software Engineering
CS 6E23	Wireless Sensor Network & Applications
CS 6E24	Semantic Web and Social Networking
CS 6E25	Advanced Operating Systems
CS 6E26	Software Project Management
CS 6E27	Parallel algorithms
CS 6E28	Stochastic Process
CS 6E29	Time Series Analysis

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	I	II	III	IV	TOTAL
Total Credit	26	24	20	20	90

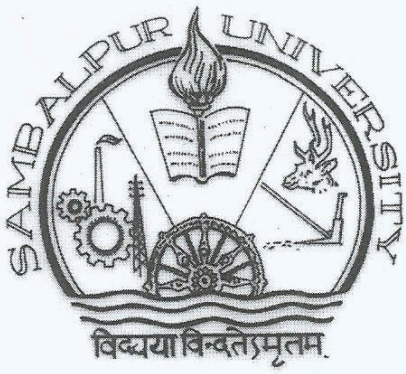
Special Instructions:

- **Selection of Electives**: Choose Electives from elective pool. Electives will be offered based on availability of concerned course instructor.
- **SEMINAR AND TECHNICAL WRITING-I&II:** Student will review research papers published in referred journals (at least six different papers in an installment of two seminars). In this work student will prepare and display posters, prepare and submit synopsis, give seminar on the topic. All faculty members / teachers council of the department will be the reviewer of the course. Equal weightage will be given to Seminal and Technical writing.
- **DISSERTATION – I:** Third Semester dissertation evaluation as per the Academic guide lines of SUIIT.
- **DISSERTATION – II:** Fourth semester or final dissertation and student will be allowed only if after successful completion of third semester project evaluation and the evaluation will be as per the Academic guide lines of SUIIT.

20/3/2019 20/3/19 Kalyani 20/3/2019 20.3.19 20/3/19 20.3.19 20/3/19 Sushree S. Pradhan 20/3/19 20.3.19

Course Structure

M.Tech.(Computer Science & Engineering)



(Effective from the academic Session 2020-2021)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

Course Structure
(Master of Technology in Computer Science and Engineering)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
CS 601	Mathematical Foundations of Computer Science	Foundation Course	4	0	0	4
CS 602	Advanced Data Structures and Algorithms	Core Course	4	0	0	3
CS 603	Advanced Programming Languages	Core Course	3	0	1	3
XX XXXX	Elective –I	Professional Elective	3	0	1	3
XX XXXX	Elective –II	Professional Elective	3	0	1	3
CS 604	Open source lab-1	Core Course	0	3	0	2
CS 605	Advanced Programming Languages lab.	Core Course	0	3	0	2
CS 606	Seminar & Technical Writing-I	Technical Seminar	-	-	-	2
MOC 607	Cloud Computing (MOOCs-1)	MOOC	3	0	0	3
					Total Credit:	25

Semester – II						
Code	Course Title	Category	L	P	T	Credits
CS 621	Cryptography and Network Security	Core Course	4	0	0	4
CS 622	Data Warehousing and Data Mining	Core Course	4	0	0	4
XX XXXX	Elective –III	Professional Elective	3	0	0	3
XX XXXX	Elective –IV	Professional Elective	3	0	1	3
XX XXXX	Elective –V	Professional Elective	3	0	0	3
CS 623	Network programming lab.	Core Course	0	3	0	2
CS 624	Seminar & Technical Writing-II	Technical Seminar	-	-	-	2
MOC 625	Data Science for Engineers (MOOCs-2)	MOOC	3	0	0	3
					Total Credit:	24

Semester – III			
Code	Course Title	Category	Credits
CS 631	Dissertation Review-I	Project Work	20
MOC 632	Deep Learning (MOOCs-3)	MOOC	4
		Total Credit:	24

Semester – IV			
Code	Course Title	Category	Credits
CS 641	Final Dissertation Review	Project Work	20
		Total Credit:	20

Elective Pool (for Elective-I to VII)	
CS 6E01	Artificial Intelligence
CS 6E02	Information retrieval and web search
CS 6E03	Pattern Recognition
CS 6E04	Advanced Computer Networking
CS 6E05	Advanced Databases
CS 6E06	Advanced Computer Architecture
CS 6E07	Mobile Computing
CS 6E08	Principles of Programming Languages
CS 6E09	Intellectual Property Rights and Cyber Laws
CS 6E10	Formal Languages and Automata Theory
CS 6E11	Image Processing
CS 6E12	High Performance Computing
CS 6E13	Internet of Things
CS 6E14	Storage Area Networks
CS 6E15	Game Theory
CS 6E16	Software define network
CS 6E17	Machine Learning
CS 6E18	Big Data Analytics
CS 6E19	Cloud Computing
CS 6E20	Soft Computing
CS 6E21	Real time system
CS 6E22	Software Engineering
CS 6E23	Wireless Sensor Network & Applications
CS 6E24	Semantic Web and Social Networking
CS 6E25	Advanced Operating Systems
CS 6E26	Software Project Management
CS 6E27	Parallel algorithms
CS 6E28	Probability & Stochastic Process
CS 6E29	Time Series Analysis
CS 6E30	Computer Based Numerical and Statistical Methods

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	25	24	24	20	93

Special Instructions:

- **Selection of Electives**: Choose Electives from elective pool. Electives will be offered based on availability of concerned course instructor.
- **SEMINAR AND TECHNICAL WRITING-I & II :** Student will review research papers published in referred journals (at least six different papers in an installment of two seminars). In this work student will prepare and display posters, prepare and submit synopsis, give seminar on the topic. All faculty members / teacher's council of the department will be the reviewer of the course. Equal weightage will be given to Seminal and Technical writing.
- **DISSERTATION – I:** Third Semester dissertation evaluation as per the Academic guide lines of SUIIT.
- **DISSERTATION – II:** Fourth semester or final dissertation and student will be allowed only if after successful completion of third semester project evaluation and the evaluation will be as per the Academic guide lines of SUIIT.

N.B-

- **A student will be eligible to get M.Tech. degree only if he/she completes the course work including the MOOCs courses recommended by the department.**
- **The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offering in Odd/Even Semesters by them.**
- **SWAYAM will 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 Computer Science and Application 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.

M.Tech in Embedded System Design Syllabus

Semester-1

Code	Subject	Hour per week	Credits
	Digital VLSI Design	4	4
	FPGA Based System Design	4	4
	Elective-I	4	4
	Elective-II	4	4
	Elective-III	4	4
	Elective Lab-I	3	2
	VLSI Lab	3	2
			24

Semester-2

Code	Subject	Hour per week	Credits
	Analog VLSI	4	4
	Advanced Digital Signal Processing	4	4
	Elective-IV	4	4
	Elective-V	4	4
	Elective-VI	4	4
	Embedded Lab	3	2
	Elective Lab-II	3	2
			24

Semester-3

Code	Subject	credit
	Masters Research Project(Phase-I)	20
	Summer Project	2
		22

Semester-4

Code	Subject	Credit
CE 6502	Masters Research Project (Phase-II)	20
	Comprehenssive Viva	4
		24

Total Credits=94

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16/7/17

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List of Electives

1. ELECTRONIC CIRCUIT AND SYSTEM DESIGN
2. Microcontroller Systems Design
3. Embedded C & C++ Programming Languages
4. Embedded Operating Systems & Real time OS
5. Embedded Design Cycle
6. Algorithm and Model based design
7. WIRE AND WIRELESS COMMUNICATION
8. ACCESS TECHNOLOGIES AND SMART CARD
9. AUTOMOTIVE EMBEDDED SYSTEMS
10. Mobile computing using Embedded System
11. DSP on FPGA
12. VLSI ENGINEERING
13. WIRELESS SENSOR NETWORKS
14. Internet of Things

Elective Labs:

1. Embedded Lab
2. Microcontroller lab
3. Advance DSP lab
4. Internet of things lab
5. VLSI lab
6. FPGA Lab
7. Simulation techniques for wireless communication lab
8. Wireless channel modelling lab

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SECTION-C
Syllabus Structure
(Masters in Science in Computer Science)

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 511	Mathematics Foundation	Foundation	4	0	0	4
CS 512	Statistical Methods for Computing	Foundation	4	0	0	4
CS 513	Digital Circuits and Systems	Core	4	0	0	4
CS 514	Programming in C	Core	3	0	1	4
CS 515	Data Structure and Algorithm	Core	4	0	0	4
CS 516	Programming in C Lab.	Core	0	3	0	2
CS 517	Digital Electronics lab.	Core	0	3	0	2
					Total Credit:	24

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
CS 521	Linear Algebra and Calculus	Foundation	4	0	0	4
CS 522	Theory of Computation	Core	4	0	0	4
CS 523	Operating Systems	Core	4	0	0	4
CS 524	Object Oriented Programming with C++	Core	3	0	1	4
CS 525	Computer Organization and Architecture	Core	4	0	0	4
CS 526	Object Oriented Programming Lab.	Core	0	3	0	2
CS 527	Operating Systems Lab.	Core	0	3	0	2
					Total Credit:	24

Semester – III							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 531	Database Management System		Core	3	0	1	4
CS 532	Computer Graphics		Core	4	0	0	4
CS 533	Data Communications and Computer Networks		Core	4	0	0	4
CS 534	Compiler Design		Core	4	0	0	4
XX XXXX	Elective-I		Prog. Elect.	4	0	0	4
	CS 53E1	Mobile Computing					
	CS 53E2	Information Retrieval System					
	CS 53E3	Information Security					
	CS 53E4	Management Information System					
CS 535	Database Management Systems Lab		Core	0	3	0	2
CS 536	UML Lab.		Core	0	3	0	2
						Total Credit:	24

Semester – IV							
Code	**Course Title**		**Category**	**L**	**P**	**T**	**Credits**
CS 541	Software Engineering		Core Course	4	0	0	4
CS 542	Artificial Intelligence		Core Course	4	0	0	4
CS 543	Ecology and Environment		Foundation	4	0	0	3
XX XXXX	Elective-II		Prog. Elect.	4	0	0	4
	CS 54E1	Data Mining and Data Warehousing					
	CS 54E2	Wireless Sensor Networks					
	CS 54E3	Cloud Computing					
	CS 54E4	Simulation Modeling					
	CS 54E5	Introduction to Big Data Analytics					
CS 544	Project		Project Work	-	-	-	8
CS 545	Seminar		Tech. Seminar	-	-	-	1
						Total Credit:	24

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**24**	**24**	**24**	**24**	96

Sushree S. Pradhan 16.07.2017

SECTION-D

Syllabus Structure

(Masters in Technology in Computer Science and Engineering)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
CS 611	Foundations of Mathematics	Foundation Course	4	0	0	4
CS 612	Advanced Data structures and Algorithms	Core Course	4	0	0	4
CS 613	Advanced Programmed Languages	Core Course	3	0	0	4
XX XXXX	Elective –I	Programme Elective	3	0	1	4
XX XXXX	Elective –II	Programme Elective	3	0	0	4
CS 614	Open source lab	Core Course	0	3	0	2
CS 615	Advanced programming lab.	Core Course	0	3	0	2
CS 616	Seminar & Technical Writing-I	Technical Seminar	-	-	-	2
					Total Credit:	26

Semester-I Elective Pool (for Elective-I and Elective-II)	
CS 61E1	Image Processing
CS 61E2	Information retrieval and web search
CS 61E3	Pattern Recognition
CS 61E4	Advanced Computer Networking
CS 61E5	Advanced Databases
CS 61E6	Advanced Computer Architecture
CS 61E7	Mobile Computing
CS 61E8	Principles of Programming Languages
CS 61E9	Intellectual Property Rights and Cyber Laws
CS 61E10	Formal Language and Automata Theory

Semester – II						
Code	Course Title	Category	L	P	T	Credits
CS 621	Artificial intelligence	Core Course	4	0	0	4
CS 622	Software Engineering	Core Course	4	0	0	4
XX XXXX	Elective –III	Programme Elective	3	0	0	4
XX XXXX	Elective –IV	Programme Elective	3	0	1	4
XX XXXX	Elective –V	Programme Elective	3	0	0	4
CS 623	Network programming lab.	Core Course	0	3	0	2
CS 624	Seminar and technical writing-II	Technical Seminar	-	-	-	2
					Total Credit:	24

Semester-II Elective Pool (for Elective-III, Elective-IV, and Elective-V)	
CS 62E1	Cryptography and Network Security
CS 62E2	Internet of Things
CS 62E3	Storage Area Networks
CS 62E4	Game Theory
CS 62E5	Data warehousing and data Mining
CS 62E6	Machine Learning
CS 62E7	Big Data Analytics
CS 62E8	Cloud Computing
CS 62E9	Soft Computing
CS 62E10	Embedded Systems
CS 62E11	Wireless Sensor Network & Applications
CS 62E12	Semantic Web and Social Networking
CS 62E13	Advanced Operating Systems
CS 62E14	Software Project Management
CS 62E15	Parallel algorithms

16.7.17 16/7/17 Sushree S. Pradhan 16.07.17 16/07/2017

Amrit 16/7/2017 Kalyan Das 16/7/2017

Semester – III			
Code	Course Title	Category	Credits
CS 631	Project Work Review-I Comprehensive Viva-Vice	Project Work	12
		Total Credit:	12

Semester – IV			
Code	Course Title	Category	Credits
CS 641	Project Work Review-II Project Evaluation (Viva-Voce)	Project Work	20
		Total Credit:	20

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	I	II	III	IV	TOTAL
Total Credit	26	24	12	20	82

Special Instructions:

- **Selection of Electives:** For Elective-I/II choose two different courses from Elective Pool-I and for Electives-III/IV/V choose three different courses.
- **SEMINAR AND TECHNICAL WRITING-I&II:** Student will review research papers published in referred journals (at least six different papers in an installment of two seminars). In this work student will prepare and display posters, prepare and submit synopsis, give seminar on the topic. All faculty members / teachers council of the department will be the reviewer of the course. Equal weightage will be given to Seminal and Technical writing.
- **DISSERTATION – I:** Third Semester dissertation evaluation as per the Academic guide lines of SUIIT.
- **DISSERTATION – II:** Fourth semester or final dissertation and student will be allowed only if after successful completion of third semester project evaluation and the evaluation will be as per the Academic guide lines of SUIIT.

Sushmee S. Pradhan
16.07.2017

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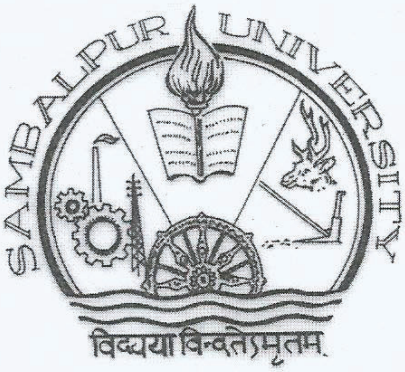
Syllabus Structure

Master in Computer Application (MCA)



(Effective from the academic Session 2019-2020)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

20.3.19 20/3/19 20/3/19 Sushree S. Pradhan

20/3/2019 20.3.19 20/3/19 20/03/19 20/08/19 SKB 20-3-19 Kalyan Das 20/3/2019 20.3.19

Syllabus Structure
(Masters in Computer Application)

Semester – I						
Code	Course Title	Category	L	P	T	Credits
MC 511	Discrete Mathematics	FC	4	0	0	4
MC 512	Communicative English	FC	3	0	0	3
MC 513	Programming in C	CC	3	0	1	4
MC 514	Business Accounting	FC	3	0	0	3
MC 515	Computer System Architecture	CC	4	0	0	4
MC 516	Programming in C Lab.	CC	0	3	0	2
MC 517	Python and R Lab.	CC	0	3	0	2
					Total Credit:	22

Semester – II						
Code	Course Title	Category	L	P	T	Credits
MC 521	Probability and Statistics	FC	4	0	0	4
MC 522	Object Oriented Programming using C++	CC	3	0	1	4
MC 523	Data Structure	CC	3	0	1	4
MC 524	Operating System	FC	4	0	0	4
MC 525	Managerial Economics	FC	3	0	0	3
MC 526	Object Oriented Programming Lab.	CC	0	3	0	2
MC 527	Data Structure Lab.	CC	0	3	0	2
MC 528	Technical Seminar – I	TS	0	0	0	2
					Total Credit:	25

Semester – III						
Code	Course Title	Category	L	P	T	Credits
MC 531	Data Communication and Computer Networks	CC	4	0	0	4
MC 532	Programming with Java	CC	3	0	1	4
MC 533	Optimization Techniques	CC	4	0	0	4
MC 534	Database Management Systems	CC	3	0	0	4
MC 535	Computer Graphics	CC	3	0	0	4
MC 536	Programming with Java Lab.	CL	0	3	0	2
MC 537	Database Management Systems Lab.	CL	0	3	0	2
					Total Credit:	24

Semester – IV							
Code	Course Title		Category	L	P	T	Credits
MC 541	Theory of Computation		CC	4	0	0	4
MC 542	Analysis and Design of Algorithms		CC	4	0	0	4
MC 543	Cyber Security		CC	4	0	0	4
MC 544	Artificial Intelligence		CC	3	0	0	4
	Elective-I						
	MC 54E1	Data warehousing and Data Mining		4	0	0	3
	MC 54E2	Distributed Systems		4	0	0	3
	MC 54E3	Object Oriented Analysis and Design		4	0	0	3
	Elective-II						
	MC 54E4	System Programming					3
	MC 54E5	Advanced data structures					3
	MC 54E6	Information Retrieval System					3
MC 545	Analysis and Design of Algorithms Lab		CC	0	3	0	1.5
MC 546	Software Engineering Lab.		CL	0	3	0	1.5
MC 547	Technical Seminar – II		TS	0	0	0	1
						Total Credit:	26

Semester – V

Code	Course Title		Category	L	P	T	Credits
MC 551	Compiler Design		CC	4	0	0	4
MC 552	Web Technology		CC	4	0	0	4
MC 553	Software Engineering		CC	4	0	0	4
	Elective-III		PE	3	0	0	4
	MC 55E1	Advance database					
	MC 55E2	Advanced Computer Architecture					
	MC 55E3	Soft Computing					
	MC 55E4	Introduction to Big Data					
	Elective-IV		PE	3	0	0	4
	MC 55E5	Simulation Modeling					
	MC 55E6	Machine Learning					
	MC 55E7	Mobile Computing					
	MC 55E8	Cloud Computing					
MC554	Web Technology Lab.		CL	0	3	0	2
MC 555	Minor Project		PW				4
						Total Credit:	**26**

Semester – VI

Code	Course Title	Category	L	P	T	Credits
MC 561	Project Work	PW	-	-	-	16
MC 562	Comprehensive Viva – Voce	CV	-	-	-	6
					Total Credit:	**22**

SEMESTER WISE CREDIT DISTRIBUTION							
Semester	I	II	III	IV	V	VI	TOTAL
Total Credit	22	25	24	26	26	22	145

N.B.

Seminar-I/Seminar-II: Students will choose two different topics from latest technological development / research in CSE or in allied field present in two successive seminars respectively. They will submit synopsis for each presentation in an approved format on the day of presentation.

Project work and Comprehensive Viva-Voce will be as per Academic & Examination Guidelines of SUIIT.

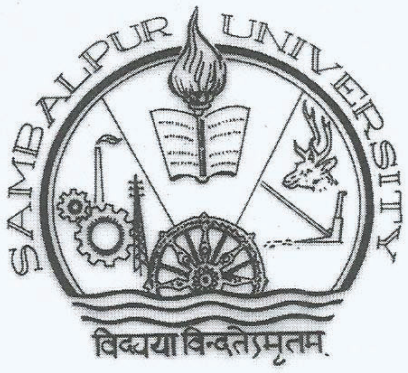
Student will attend a compulsory internship (minimum of 45 days) in any reputed industry or academic institute after fourth semester.

Sushree s. Pradhan

Course Structure

Master of Computer Applications (MCA)

(Two Years)



(Effective from the academic Session 2020-2021)

Department of Computer Science & Engineering and Applications

Sambalpur University Institute of Information Technology (SUIIT)

Sambalpur University, Jyoti Vihar-768019, Burla

Course Structure
Masters of Computer Applications

Semester – I						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 511	Mathematical Foundations of Computer Science	CC	4	0	0	3
MC 512	Database Management Systems	CC	4	0	0	3
MC 513	Programming and Data Structures	CC	3	0	1	3
MC 514	Operating Systems	CC	4	0	0	3
MC 515	Computer Systems Architecture	CC	4	0	0	3
MC 517	Programming and Data Structures Lab.	CL	0	3	0	2
MC 518	Database Management Systems Lab.	CL	0	3	0	2
MC 519	Communicative English Lab.	CL	0	2	0	2
					Total Credit:	**21**

Semester – II						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 521	Software Engineering	CC	4	0	0	3
MC 522	Object Oriented Programming using Java	CC	3	0	1	3
MC 523	Design and Analysis of Algorithms	CC	3	0	1	3
MC 524	Data Communication and Computer Networks	CC	4	0	0	3
MC 525	Theory of Computation	CC	3	0	0	3
MC 527	Object Oriented Programming using Java Lab.	CL	0	3	0	2
MC 528	Design and Analysis of Algorithms Lab.	CL	0	3	0	2
MC 529	UML Lab.	CL	0	2	0	2
MC 530	Financial Accounting (MOOCs-1)		3	0	0	3
					Total Credit:	**24**

Semester – III						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 531	Information and Cyber Security	CC	4	0	0	3
MC 532	Artificial Intelligence	CC	4	0	1	3
MC 533	Web Technology	CC	4	0	0	3
MC 535	Elective-I 1. Machine Learning 2. Soft Computing 3. Mobile Computing 4. Computer Graphics 5. Simulation and Modeling 6. Compiler Design	CC	3	0	0	3
MC 536	Elective-II 1. Data warehousing and Data Mining 2. Cloud Computing 3. Big Data Analytics 4. Wireless Sensor Networks 5. Advanced Databases 6. Management Support Systems	CC	3	0	0	3
MC 537	Open Source Lab	CL	0	3	0	2
MC 538	Web Technology Lab	CL	0	3	0	2
MC539	Technical Seminar	TS	0	2	0	2
MC 540	Soft Skills and Personality Development (MOOCs-2)		3	0	0	3

					Total Credit:	**24**
Semester – IV						
Code	**Course Title**	**Category**	**L**	**P**	**T**	**Credits**
MC 561	Project Work	PW				12
MC562	MOOCs-3 (Decision Support Systems for Managers)	MOC	4	0	0	4
MC563	MOOCs-4(Data Science for Engineers)		3	0	0	3
MC 564	Comprehensive Viva – Voce	CV				6
					Total Credit:	**25**

SEMESTER WISE CREDIT DISTRIBUTION					
Semester	**I**	**II**	**III**	**IV**	**TOTAL**
Total Credit	**21**	**24**	**24**	**25**	**94**

N.B.

- **A student will be eligible to get MCA degree only if he/she completes the course work including the MOOCs courses recommended by the department.**
- **The students can register for these courses through SWAYAM (Govt. of India) directly as per the courses offering in Odd/Even Semesters by them.**
- **SWAYAM will 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 Computer Science and Application 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.