

INTRODUCTION

THE SAMBALPUR UNIVERSITY: A PEEP INTO THE PAST

The Sambalpur University Act was passed by the Orissa Legislature on 10th December, 1966 to fulfil the long cherished dream of the people of Western Odisha for establishment of a University. The University started functioning from 1st January, 1967 with Prof. Parsuram Mishra as the first Vice-Chancellor. The University was inaugurated on 4th January, 1967 by Hon'ble Chancellor A.N Khosla. The University started functioning in 1967 in a rented private building at Ainthapali, Sambalpur from 1968-72. In the year 1973 the University was shifted to the present campus named Jyoti Vihar at Burla.

The territorial jurisdiction of the University covers 10 districts and part of Angul District of the state of Odisha namely Sambalpur, Sundargarh, Jharsuguda, Deogarh, Bargarh, Bolangir, Subarnapur, Nuapara, Kalahandi, Boudh and Athmallik Sub-Division of Angul District.

The University at Jyoti Vihar provides Post-Graduate education in forty-two subjects through Twenty-six Post-Graduate Departments. The University Post-Graduate Teaching Departments with their year of establishment in chronological order include:

(1) Political Science & Public Administration	1968
(2) Odia	1968
(3) Physics	1969
(4) Chemistry	1969
(5) Mathematics	1969
(6) School of Life Sciences	1969
(7) History	1969
(8) English	1969
(9) Economics	1971
(10) Lib. & Inf. Science	1975
(11) Statistics	1976
(12) Home Science	1976
(13) Sociology	1976/1991
(14) Anthropology	1976/1991
(15) Earth Sciences (Applied Geology)	1984
(16) Law (LL.M)	1986
(17) Computer Science & Application	1988
(18) Business Administration	1989
(19) Environmental Science	1989
(20) Centre of Regional Art and Culture Studies (For Diploma in Sambalpuri Studies)	1997
(21) School of Performing Arts (Dance & Drama)	2010
(22) Hindi	2010
(23) Biotechnology & Bioinformatics (Self Financing)	2016
(24) Social Work (Self Financing)	2017
(25) Education (Self Financing)	2017
(26) Sanskrit (Self Financing)	2017

The following Post-Graduate Departments of the University offer the following Self-financing Courses as noted against each.

Sl.No.	Department	Course	Year
(1)	Business Admn.	Executive MBA	2004
		MBA Rural Management	2012
		Agri-business Management	2017
(2)	Biotechnology & Bioinformatics	M.Sc. Biotechnology	2016
		M.Sc. Bioinformatics	2016
(3)	Chemistry	M.Sc. Applied Chemistry	2008
(4)	Earth Sciences	M.Tech. Geospatial Technology	2011
(5)	Economics	MBA (Financial Management)	2006
* (6)	Education	* Integrated B.Ed-M.Ed	2017
(7)	Env. Sciences	M.Tech. Env. Science & Engg.	2007
(8)	Home Science	M.Tech. Food Sc. & Tech.	2010
		M.Sc. Food Science	2011
(9)	Life Sciences	M.Sc. Microbiology	2017
(10)	Nano Research Centre	M.Sc. Nanoscience	2017
		M.Tech. Nanotechnology	2017
(11)	Physics	M.Sc. Medical Physics	2017
(12)	Social Work	Master of Social Work	2007
(13)	Sanskrit	M.A Sanskrit	2017

***Subject to approval of the NCTE, Govt. of India**

Besides the courses cited above, the University offers B.Tech (Computer Sc. & Engg., Electronics & Communication Engg, Electrical & Electronics Engg.), M.Sc. (Computer Sc. and Electronics), M.Tech. (Computer Science & Engg., Embedded System Design, Communication System Engg.) and Master of Computer Application (MCA). All these aforesaid courses are run by Sambalpur University Institute of Information Technology (SUIIT), which is an autonomous constituent institute of Sambalpur University. For more details visit: www.suiit.ac.in.

The University Post-Graduate Departments offer one-year study Programme for M.Phil Degree; two-year study programme for the Degrees of M.A / M.Sc / M.Tech / LL.M / Business Administration / Library & Information Science; one-year P.G. Diploma Courses in Sambalpuri Studies, Human Rights Education and six-month certificate course in Human Rights Education and three-year course in Executive M.B.A.

The following Schools of Studies have been created since the session 2008-09:

- (1) School of Bio-social Studies comprising Sociology, Anthropology & Home Science Departments.
- (2) School of Mathematical Sciences comprising Mathematics and Statistics.
- (3) School of Life Sciences comprising Life Science & Microbiology.
- (4) School of Letters comprising Departments of English, Odia & Hindi.
- (5) School of Physics comprising Physics & Nuclear Physics.
- (6) School of Chemistry comprising Chemistry & Applied Chemistry.
- (7) School of Social Science comprising Economics, History and Political Science & Public Administration Departments.

A Nano Research Centre has been established in 2016 in collaboration with the P.G. Departments of Chemistry, Physics, Environmental Science and School of Life Sciences with a view to promote multi-disciplinary research in the university.

Autonomous status has been conferred upon the P.G. Departments of Chemistry, Life Sciences, History, Economics, English, Environmental Science, Mathematics, Statistics, Physics and Biotechnology & Bioinformatics.

There are 09 Post-Graduate Hostels in the University Campus out of which 04 are Ladies Hostels and 05 are Gents Hostels. The University provides several facilities to the boarders in the Hostels like Common Room with T.V, Reading Room with Newspapers and Magazines, Guest Room, First Aid, STD Telephone Booth, Computer with Internet facilities etc. The Central Canteen has been opened near the Hostel Campus for the benefit of students. Besides there are 02 Nationalized Banks, 02 ATM Counters, 01 Post-Office, 01 Health Centre, 01 Auditorium, 01 Police-Out Post, 01 Faculty House and 01 Community Centre in the University Campus for providing services to students/teachers and employees in the Campus.

The establishment of Directorate of Distance and Continuing Education (DDCE), Private Examination Cell (PEC), Nodal Computer Centre, UGC HRDC, Sponsored Research and Industrial Consultancy (SRIC) Cell, Professor Bhubaneswar Behera Central Library and Gymnasium are added features of Sambalpur University.

**JOIN HANDS TO MAKE YOUR
CAMPUS RAGGING FREE**

1. ELIGIBILITY FOR ADMISSION-

Specific eligibility conditions are reflected under each course.

Candidates, who have appeared at the qualifying examinations and the results thereof awaited are also eligible to apply. However, they have to submit the Provisional Certificate and Marksheet of the qualifying examination within ten days after publication of results of Sambalpur University, or on any date during the Entrance Test schedule i.e. from **20.06.2017 to 02.07.2017** whichever is later, otherwise their cases for selection shall not be considered.

2. ONLINE ADMISSION

A. Online filling up of application form shall begin w.e.f. 24.04.2017.

The last date of submission of application online is 08.06.2017 till 5:00 P.M.

- (i) Candidates should logon to the website
<http://www.suniv.ac.in> and click “online admission” or
<http://eadmission.suniv.ac.in>
- (ii) The candidates should download the Prospectus for P.G. Self-financing Courses, 2017-18 and read it carefully before filling up of form online.
- (iii) The candidate should deposit Rs.500/- as processing fee through State Bank Collect. The procedure for depositing the processing fee is as follows:

Procedure for depositing the processing fee of Rs.500/- online using State Bank Collect facility. Fees can be deposited using Debit Card, Credit Card, Net Banking facility of any Bank besides visiting any SBI branch to deposit by cash or cheque drawn on any SBI Branch

Please read the instructions carefully before remitting fees

- ☞ Visit online banking website of SBI by typing <https://www.onlinesbi.com> in the address bar of the browser viz. internet explorer. Once the home page appears click on ‘State Bank Collect’ tab or click on **SBI Collect** tab on online admission page.
- ☞ Accept the disclaimer clause and click on “Proceed”.
- ☞ Select the State of Corporate/Institution as ‘Odisha’.
- ☞ Select type of Corporate/Institution as ‘Educational Institutions’ and click on ‘Go’.
- ☞ Now select Educational Institution Name as ‘SAMBALPUR UNIVERISTY P G COUNCIL’ and click on ‘Submit’.
- ☞ Select the payment category from the drop down as “P.G. Admission 2017-18”.
- ☞ Before filling the challan, read the Payment Details/Structure Document carefully and ascertain the fees amount applicable to you.
- ☞ Fill in the challan with required information as asked for or select from the drop down options wherever available. **Take adequate care while filling in (a) Name (b) Date of Birth & (c) Mobile Number as asked for in the lower part of the screen.** This information is important to reprint the e-Receipt subsequent to any successful payment.
- ☞ Once required data is filled in click on ‘Submit’.
- ☞ The system will ask you to verify the details entered and confirm the transaction in the next page. Verify the details and click on ‘Confirm’.
- ☞ The system will request you to select the desired payment mode from various options. Please note that the bank charges for various payment modes are also displayed which is to be borne by the remitter. **Carefully examine the charges displayed since the charges for different payment mode are different.** Select the desired payment mode.
- ☞ Now the system will guide the remitter through the payment process. Once the payment is completed successfully one e-Receipt is generated containing a **Reference Number** in PDF format. Take a print out. You may also save this optionally for future reference. The e-Receipt can also be regenerated/reprinted afterwards from ‘Payment History’ link of ‘State Bank Collect’.

If 'SBI Branch' is selected as payment mode a Pre Acknowledgement Payment (PAP) form is generated which contains the relevant details for payment at Branch. The payer takes the print out of the PAP Form and visits any SBI branch for payment through **cash or cheque drawn on SBI Branch**. After the payment is successfully processed by the branch, the branch will give an acknowledgment of payment on the PAP Form. Now any time the payer may optionally return to 'State Bank Collect' link in the home page of www.onlinesbi.com for printing the e-receipt from the 'Payment History' link.

- (iv) The candidate should then register himself/ herself (through appropriate link) by providing the following information:
- (a) Name of the course
 - (b) Name of the candidate
 - (c) email ID
 - (d) SB Collect Reference No. (provided by the Bank)
 - (e) SBI Branch Name
 - (f) Password (to be created by the candidate)

The information as above are vital and the candidate should carefully notedown those for future use.

- (v) The candidates can then fillup the form online. After completion of all the fields in the form, the candidates should click the "submit" button. Thereafter a page will be opened with all the information of the candidate that he/she has filled in. The candidate then has to take a printout of this page and sends/submits it to the **Course Coordinator of _____**, _____
(Name of subject) , (Name of the Dept.)
Sambalpur University,
Jyoti Vihar-768019, Sambalpur (ODISHA) along with the following documents latest by **14.06.2017**.
- (a) Two recent passport size colour photographs of the candidate duly attested by a Gazetted Officer.
 - (b) Attested copies of the Mark sheets and Certificates of all examinations starting from H.S.C for determining eligibility.
 - (c) University copy of Bank Challan of Rs.500/- in original towards payment of processing fee.
 - (d) An attested copy of the certificate from CDMO regarding his/her disability for 50% or more (in case of Physically Handicapped Candidates).
 - (e) An attested copy of the Caste Certificate obtained from a Revenue Officer not below the rank of a Deputy Collector or MLA or MP or DWO, in absence of which the candidate will not be eligible to get concession allowed under reserved categories.
 - (f) The undertaking form(s) should be duly filled in and signed by the applicant and his/her father or natural guardian.

The envelope containing the application complete in all respect must be superscribed

"Application for Admission in _____ Self-financing Course" Sambalpur University.
(Subject)

- (g) Application incomplete in any manner shall be rejected.

B. Procedure for downloading the Admit Card

Admit Card will available on the web for eligible candidates from **17.06.2017**. Candidates should login and download the same.

3. ENTRANCE EXAMINATION

Written Test for admission shall not be conducted where the number of applicants are less than the sanctioned strength. In that case only the eligibility criteria shall be considered.

PROGRAMME FOR ENTRANCE EXAMINATION – 2017

Date	9:00 A.M. to 11:00 A.M. (1 st sitting)	11:30 A.M. to 1:30 P.M. (2 nd sitting)	2:00 P.M. to 4:00 P.M. (3 rd sitting)
20.06.2017 (Tuesday)	-	M.Sc. Biotechnology M.Sc. Bioinformatics	-
21.06.2017 (Wednesday)	M.Sc. Applied Chemistry	M.A. Sanskrit	-
23.06.2017 (Friday)	M.Sc. Medical Physics	-	-
24.06.2017 (Saturday)	M.Sc. Microbiology	M.Sc. Nanoscience M.Tech. Nanoscience & Technology	-
27.06.2017 (Tuesday)	M.Tech. in Environmental Science & Engineering	-	M.Tech. Food Science & Technology
29.06.2017 (Thursday)	Agribusiness Management	-	Executive MBA
30.06.2017 (Friday)	MBA (Financial Management)	Integrated B.Ed., M.Ed.	M.Tech. Geospatial Technology
01.07.2017 (Saturday)	Master of Social Work	M.Sc. Food Science & Nutrition	MBA Rural Management

IMPORTANT DATES:

• Filling up of Application form for online admission	From 24.04.2017
• Last date of online submission of application	08.06.2017 upto 5:00 P.M.
• Last date of submission of hard copy of application	14.06.2017
• Downloading of Admit Cards for Entrance Test	From 17.06.2017

4. SELECTION FOR ADMISSION:

Selection will be based on career (30 marks) and written (70 marks). Specific criteria for some courses have been prescribed later under the course features. Wherever specific criteria is not mentioned, formula for calculating career marks (out of 30) for admission shall be as follows:

H.S.C.E.	:	1 st Divn.-6	2 nd Divn.-4.5	3 rd Divn/Pass.-3
+2	:	1 st Divn.-9	2 nd Divn.-7	3 rd Divn/Pass.-5
+3(Honours)	:	$\frac{\text{Marks secured in Honours Subject}}{\text{Maximum Marks in Honours Subject}} \times 15$		
+3(Pass)	:	$\frac{\text{Aggregate Marks secured}}{\text{Maximum Marks}} \times 12$		

N.B. In cases where no division, marks or percentage of marks have been awarded, the division shall be determined on the basis of proportionate marking from the grades awarded for the purpose of career marking.

5. INTIMATION

Intimation to the selected candidates will be sent by Registered Post / Speed Post and will be notified in Departmental Notice Boards.

6. DOCUMENTS REQUIRED FOR ADMISSION

A. Admission to different Self-financing Course will be made by post and not in person. The selected candidates must send the following documents by Registered Post for admission to the Course Coordinators of the concerned Self-financing Courses.

- (i) College Leaving Certificate in original from the Institution last attended;
- (ii) Conduct Certificate in original from the Institution last attended;
- (iii) Original Mark Sheet/Certificates of all examinations starting from H.S.C.E. to last qualifying examination.

(In case of +3 Examination, Mark sheet of First Examination and Final Examination are to be submitted separately, if detailed marks are not provided in the final mark sheet).

- (iv) Migration Certificate in original for candidate from other University.
- (v) Two attested passport size colour photographs
- (vi) Original Income Certificate (In respect of female candidates claiming concession in tuition fee).
- (vii) Original Caste Certificate for SC/ST candidates.
- (viii) Required fees specified in the Intimation Letter.

B. No admission shall be made into any Self-financing Course beyond 21.08.2017

7. ALLOTMENT OF SPECIAL PAPER:

The number of special papers to be offered by a P.G. Department shall be decided by the Teachers' Council of the concerned Department and notified by the Head of the Department before the allotment of special papers, preferably at the time of calling for application from students for such allotment. As far as possible, the number of special papers offered by a Department shall be equally divided among the applicants on the principle of preference and consolidated merit list basing on performance in the written test and viva-voce plus career mark, notwithstanding different categories of reservations.

8. RESERVATION

- (i) 22.5% and 16.25% of seats in each course are reserved for candidates belonging to Scheduled Tribes and Scheduled Castes respectively. The reserved seats are not interchangeable between SCs and STs and the reserved seats lying vacant after 3rd notification shall be dereserved and open to all categories of applicants. No, admission will be made beyond the sanctioned strength in Self-financing Courses.
- (ii) One seat in each department will be reserved for Physically Handicapped candidates. Such candidate is required to produce a certificate from the C.D.M.O. regarding his/her disability for 40%

and above. On the basis of the certificate issued by the C.D.M.O. concerned admission under PH category may be considered by the respective Head of the Department / Course Coordinator.

- (iii) Concessions for the wards of Kashmiri migrants for admission shall be allowed as per the directive of the MHRD, Govt. of India.

9. REQUIREMENT OF ATTENDANCE

A candidate shall be required to attend 75% of lectures, tutorials and practical classes offered during the year. Condoning of attendance may be granted by the Syndicate only to the extent of 15% in exceptional cases. When a candidate has been deputed by College/University to represent the College/University/ State for any activity, the lectures delivered during his/her absence shall not be counted towards the calculation of percentage of attendance, provided the HOD/Course Coordinator certifies to that effect.

10. CONDUCT OF EXAMINATION

Examinations of Self-financing courses will ordinarily be held as per the University Act, Statutes and Regulations.

11. FEES AND SUBSCRIPTION

All fees shall be collected through **SBI Collect**. The following fees are payable at the time of admission in addition to the course fee and other requisite fees prescribed for each course.

- | | |
|---|-----------|
| (i) (a) Tuition fee for Post-Graduate SF Courses in Humanities per annum | Rs.144.00 |
| (b) Tuition fee for certificate course in Human Rights Education for six months | Rs.72.00 |
| (ii) Tuition fee for Post-Graduate SF Courses in Science per annum | Rs.168.00 |
| (iii) a. University Registration | Rs.100.00 |
| b. Enrolment Fee | Rs.100.00 |
| c. Recognition fee for students | Rs. 25.00 |

(For New entrants to Sambalpur University who passed examination from other Universities recognized by the Academic Council of Sambalpur University as equivalent to corresponding examination of the University)

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|--|-----------|
| (iv) Library fee and registration | Rs.100.00 |
| (v) Student Aid Fund | Rs.5.00 |
| (vi) Magazine Fee | Rs.50.00 |
| (vii) Games Fee(Athletic Club) | Rs.50.00 |
| (viii) Medical Fee | Rs.5.00 |
| (ix) Cultural Society Fee | Rs.50.00 |
| (x) Science Society Fee
(Science Students only) | Rs.20.00 |
| (xi) Common Cultural Fund | Rs.10.00 |
| (xii) Students Welfare Fund | Rs.10.00 |
| (xiii) Students' Union Subscription | Rs.50.00 |
| (xiv) D.S.A Fee
(Only for Day Scholar Students) | Rs.10.00 |
| (xv) Fee for Wall Magazine | Rs.5.00 |
| (xvi) Fee for Pioneer | Rs.5.00 |
| (xvii) Fee for Sports | Rs.50.00 |

(xviii) Fee for Horizon	Rs.5.00
(xix) Alumni Index	Rs.100.00
(xx) Admission Fee - Equal to One Month Tuition Fee (for new entrants to a course)	
(xxi) Fee for Insurance	Rs.15.00
(Students Safety Insurance Scheme approved by Syndicate)	
(xxii) One time Bus Fee from each student at the time of admission	Rs.75.00
(xxiii) Utility charges for e-gov	Rs.200.00
(xxiv) (a) Advance Bus Fare per Annum for Day Scholars residing at Sambalpur and expected to come by University bus	Rs.3,600.00
(b) For certificate course in Human Rights Education for six months	Rs.1,800.00

Note:

1. The Candidate can seek refund of proportionate amount of bus fare after becoming a boarder.
2. Bus fare for a full Academic session will be realized at the time of admission.

(xxv) Energy charges for boarders for two years	Rs.1800.00
Energy charges for certificate course in Human Rights Education for six months	Rs.450.00
(xxvi) Water Charges for boarders for two years	Rs.240.00
Water Charges for certificate course in Human Rights Education for six months	Rs.60.00
(xxvii) N.C.C.	Rs. 5.00
(xxviii) Red Cross	Rs.10.00
(xxix) NSS	Rs. 10.00
(xxx) One Time Caution Money	Rs.1,000.00

(Caution money is refundable online after completion of course. Therefore, it is mandatory for every student to open a Saving Bank Account in the State Bank of India. If the said amount is not claimed within three years from the date of completion of course the claim for the said amount shall automatically stand forfeited).

Scholarship, stipend, etc. due to be paid to any bonafide student of the University will also be paid online.

(xxxi) The following fees are to be collected from the candidates by the respective Course Coordinator of the Self-financing course at the time of admission.

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|--|-----------|
| (a) Science Laboratory/ Laboratory/ Computer Lab/ Language lab, etc. (per annum) | Rs. 1500 |
| (b) Fee for Maintenance of Abstract of Attendance | Rs. 2.00 |
| (c) Fee for Identity Card | Rs. 5.00 |
| (d) Fee for Seminar Library | Rs. 5.00 |
| (e) Fee for Cultural Activities | Rs. 20.00 |
- (f) Candidates of all categories for admission to the Self-financing courses are to pay Development fee of Rs.2,500/- per semester
- (g) Departments conducting field trip or study tour as a part of their curriculum shall bear the expenditures out of contributions levied on students and the appropriate fees shall be collected from the students as decided by the Teachers Council of the respective Department at the time of admission and / or renewal of admission.

- (h) Candidates for admission to the Arts and Social Science Departments without laboratory are to pay Rs.1000/- and to science Departments and other Departments with laboratory are to pay Rs.1500/- as Infrastructure Development Fund fee.
- (i) Student Seminar fee per semester
(to be spent by the students) Rs.1000.00
- (j) A student shall pay the following examination and examination related fees as prescribed in common guidelines of self-financing courses.
- | | |
|---|----------|
| (a) Examination fee/Semester | Rs.500/- |
| (b) Centre Charge/Semester | Rs.100/- |
| (c) Late deposit of Examination fee
within 15 days of last date of form fill up | Rs.100/- |
| (d) Fee for issue of Grade Sheet
after for each Semester. | Rs. 50/- |
| (e) Fee for issue of provisional
certificate cum grade sheet | Rs.100/- |
| (f) Re-addition Fee/Paper | Rs. 50/- |
| (g) Examination fee for Repeat/
Improvement per theory paper | Rs.250/- |
| (h) Original diploma (after successful completion of 4th Semester exam.
(as per University rule) | |

The autonomous Departments shall collect the fees from the students before each Semester examination. For non-autonomous Departments, the examination related fees shall be deposited by the students in the Central Office at the time of form fill up before each Semester examination.

12. HOSTEL ADMISSION RULES AND RELATED MATTERS

- (i) Hostel accommodation may be provided to students of P.G Programme depending upon availability of seats in the following hostels.
- (a) Brahmaputra, Mahanadi, Bhagirathi and Satadru Hostels are for Gents Students
- (b) Narmada, Silver Jubilee and Pravabati Devi Ladies Hostels and temporary M.Phil. Hostels are for female students only.
- (ii) **RESERVATION**
Reservation in various Hostels for SC and ST candidates is as per Rules, i.e., SC-16.25% and ST-22.5%
- (iii) **ADMISSION**
- (a) Students seeking admission in to the Hostels shall have to apply with two passport size recent colour photographs in the prescribed form available in the P.G. Departments duly forwarded by the Course Coordinator of Self-financing course. The Course Coordinator of Self-financing course will forward the merit list of the prospective boarders to the Warden as soon as the merit list of admission of students in the Department concerned is prepared.
- (b) The students will get an Intimation letter from the Warden for admission in the Hostel wherever required.
- (c) The date of admission in the Hostels during the session will be notified by the Warden.

- (d) **The admission for the hostel is for one academic-session i.e., June to May and for certificate course June to November only.**
- (e) The selected boarders shall have to take admission through the P.G. Central Office by paying the following fee for the session at the Cash Counter, P.G. Central Office. **The boarders of certificate course shall pay the proportionate amount of the following fees only except Hostel Caution Money which will be paid in full i.e. Rs.100/-**
- (f) **(1) SEAT RENT(Except Mahodadhi)**
- | | | |
|------|----------------------|--------------------|
| (i) | Single Seated Room | Rs.168/- per annum |
| (ii) | Multiple Seated Room | Rs.120/- per annum |
- (2)SEAT RENT (Mahodadhi Hostel)**
- | | | |
|------|--------------------|--------------------|
| (i) | Single Seated Room | Rs.800/- per annum |
| (ii) | Double Seated Room | Rs.400/- per annum |

These items and charges are subject to change from time to time. If any boarder can not take admission within the due time, the period of admission can be extended by the Warden, P.G. Hostels once without fine. A fine will be levied for subsequent extensions.

- (g) On submission of the receipt of deposit of fee made in the P.G. Central Office in the respective hostel, the Superintendent shall collect the required prescribed charges of Hostel and allot seat/room in the Hostel. The boarder shall be provided with furniture and other materials for his/her seat/room for the hostel from the resources available.

The fees to be deposited in the hostel are as follows:

- (i) Establishment fee Rs.1000/- per annum
- (ii) Cultural fee Rs.300/- per annum
(This may increase if a hostel so decides)
- (iii) Hostel Caution Money - Rs.100/-
- (iv) Mess charges to be decided by the Hostels.

The charges are subject to change from time to time. A portion of the Hostel and Mess caution money will be deducted at the time of refund.

The amount to be deducted shall be decided by the Hostel Residence Committee If the caution money is not claimed within 3 years from the date of leaving the hostel, the claim for the said amount shall automatically stand forfeited.

If the students of Third Semester or 2nd Year do not deposit their annual fees like establishment, cultural etc. in the hostel office by the end of August, a late fine @ Rs.5/- per day shall be levied maximum upto one month. Otherwise allotment for admission shall be cancelled.

- (h) Research Scholars on completion of their tenure of Fellowship may be allowed to stay in the hostel for only one month on payment of usual charges.
- (i) **MESS:** The boarder shall have to be guided by the Mess Rules to be framed by each hostel.
- (j) **DISCIPLINE:** Boarders are expected to maintain discipline and proper atmosphere of studies in the hostels.

The following acts of indiscipline are strictly prohibited:

1. All kinds of shouting, violence, knocking or /and any other act of undesirable behaviour that is likely to cause disturbance or annoyance to others.
2. **Ragging of all kinds in the hostels or in the University Departments and within or outside the Campus.**

3. Any form of playing music and video system inside the room or the hostel premises causing annoyance and disturbance to others.
4. Maltreating or abusing the hostel employees, mess canteen staff and others.
5. Any meeting not relating to hostel affairs held on the hostel premises without prior permission.
6. Keeping fire arms, weapons and intoxicants of any kind in the hostels.
7. Cooking in the room of the hostels.
8. The use of electric heater, immersion heater, radio, TV and other similar electrical appliances in the room.
9. Keeping the light and fan on when boarders are not inside the rooms.
10. Damaging, misusing and stealing of any hostel property or stealing others belongings.
11. Entertaining female visitor into the room of the boarders in the boys hostels and male visitor into the rooms of the women hostels.
12. Boarders staying outside overnight without permission of the competent authority.
13. Overstaying in Hostels by the boarders without permission of competent authority.
14. Entertaining guest/outsideers in the hostel without written permission of the respective Hostel Superintendent.
15. Leaving Jyoti Vihar without intimating the hostel authority in writing and without taking prior permission.
16. Consumption of alcohol and / or any other intoxicant by a boarder.
17. Sexual harassment of any kind.
18. Sexist or Casteist remark of any kind.

(k) **FINAL CLEARANCE**

- (i) After the completion of theory and practical examinations the boarders shall have to handover the furniture and other materials issued to him/her along with the room key to the hostel authorities within a week.
- (ii) The boarder can then claim a final clearance certificate in the prescribed format from the hostel office and submit the same to the respective H.O.D. / Course Coordinator.
- (iii) There shall be a Hostel Residence Committee (HRC) with Warden, P.G Hostels as the Chairman and all Superintendents and Assistant Superintendents as its members. The Hostel Residence Committee shall look into general administration of the Hostels.

13. PENALTY & PUNISHMENT TO THE STUDENTS INDULGING IN RAGGING INSIDE THE UNIVERSITY / DEPARTMENT / HOSTEL PREMISES.

(i) As per Supreme Court order communicated to University by the University Grants Commission, New Delhi, ragging in any form is strictly prohibited. If any incident of ragging comes to the notice of the authority the accused student will be given an opportunity to explain, and if his/her explanation is not satisfactory, the authority would expel him/her from the institution as well as hostel if he/she is a boarder.

While admitting the students each H.O.D./Course Coordinator shall ensure the submission of an undertaking in the format prescribed in the admission application form signed by both the candidate and his parents (or legal guardian).

14. GENERAL DISCIPLINE

- (i) The students are expected to maintain discipline and proper atmosphere of study in the university campus.
- (ii) The following acts of indiscipline are strictly prohibited:
 - (a) Any act of preventing the teaching and non-teaching staff of the university from discharging their normal duties.
 - (b) Any act of stopping the university vehicles from plying and thereby affecting the functioning of university system.
 - (c) Any act of lockout of the university gate, university office, university P.G. Departments, Library and other such units of the university system.
 - (d) Any act of assembling in a meeting or going in a procession inside the university campus without prior notice to the authority or without availing the usual channels of grievance redressal.
 - (e) Any other agitational activity that will affect the day-to-day running of the university system.
 - (f) Sexual harassment of any kind.
 - (g) Sexist or Casteist remark of any kind.

15. INTERPRETATION

For any interpretation in respect of the provisions of the Prospectus, the decision of the University shall be treated as final.

**GO AHEAD;
REPORT RAGGING**

**ADDITIONAL INFORMATION FOR
ADMISSION
TO
SELF-FINANCING COURSES IN
P.G. DEPARTMENTS
2017-18**

1. M.Sc (BIOTECHNOLOGY)
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS

- 1. Head of the Department:** Prof. P. K. Naik (Mobile No.: 09749268802)
2. Course Coordinator: Dr. A. K. Patel (Mobile No.: 09338686900)
3. Eligibility criteria: Any science graduate such as Biological sciences with allied subjects, Physical, Engineering and Medical sciences or other professional courses with at least 45% of marks in aggregate.
4. Duration of the Course: 2 Years (4 Semesters)
5. Number of seats: 16 (Sixteen)
6. Selection criteria: Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): Marks secured in Honours Subject X 15

Maximum Marks in Honours Subject

+3(Pass) : Agreegate Marks secured X 12

Maximum Marks

(b) Category-II (Other than Science Graduate)

H.S.C.E. 1st 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 100"

75% and above = 15

60% and above but less than 75% = 12

45% and above but less than 60% = 10

All other eligible candidates = 08

- 7. Fee Structure:**
- | | |
|--------------------------|-----------------------------|
| Course Fee: | Rs. 25,000/- (per semester) |
| Development Fee: | Rs. 2,500/- (per semester) |
| Seminar Fee: | Rs. 1,000/- (per semester) |
| Infrastructure Dev. Fee: | Rs. 1,500/- (One time) |
| Students Alumni Fee: | Rs. 500/- (One time) |
- Besides, the candidate admitted to the programme shall pay other fees as per the prospectus at Clause- 11.

8. Core Faculty:

Name of the faculty	Area of specialization
1. Dr. P. K. Naik, Professor	Molecular Biology, Bioinformatics, Drug Development
2. Dr. J. Panigrahi, Reader	Molecular Biology, Plant Genome mapping, Genetic Engg.
3. Dr. A. K. Patel, Reader	Microbiology, Industrial Biotechnology, Bioprocess Engg.
4. Dr. S. Pattnaik, Asst. Prof.	Microbiology, Medical and Pharmaceutical Biotechnology
5. Mr. B. P. Bag, Asst. Prof.	Bioinformatics
6. Dr. B. Behera, Asst. Prof.	Animal Biotechnology, Biochemistry

Besides, the guest faculties from other Universities, Research Institutes across India having expertise in different fields of biotechnology are invited to impart quality teaching at par.

OUTLINE OF COURSE STRUCTURE
M.Sc. BIOTECHNOLOGY (Session: 2017-2019)

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) Plant Biotechnology (B) Animal Biotechnology	3	50
BT-536	(A) Agricultural Biotechnology (B) Clinical Pathology & Diagnostics (C) Environmental Biotechnology (D) Pharmaceutical Biotechnology	3	50
Elective Paper (Any one)			
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

2. M.Sc (BIOINFORMATICS)
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS

- 1. Head of the Department:** Prof. P. K. Naik (Mobile No.: 09749268802)
2. Course Coordinator: Prof. P. K. Naik (Mobile No.: 09749268802)
3. Eligibility criteria: Any science graduate such as Biological sciences with allied subjects, Physical, Engineering and Medical sciences or other professional courses with at least 45% of marks in aggregate.
4. Duration of the Course: 2 Years (4 Semesters)
5. Number of seats: 16 (Sixteen)
6. Selection criteria: Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): Marks secured in Honours Subject X 15
 Maximum Marks in Honours Subject

+3(Pass) : Agreegate Marks secured X 12
 Maximum Marks

(b) Category-II (Other than Science Graduate)

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

Graduation (Marks secured in percentage)

"Total Marks Secured/Maximum Marks X 100"

75% and above = 15

60% and above but less than 75% = 12

45% and above but less than 60% = 10

All other eligible candidates = 08

- 7. Fee Structure:**
- | | |
|--------------------------|-----------------------------|
| Course Fee: | Rs. 25,000/- (per semester) |
| Development Fee: | Rs. 2,500/- (per semester) |
| Seminar Fee: | Rs. 1,000/- (per semester) |
| Infrastructure Dev. Fee: | Rs. 1,500/- (One time) |
| Students Alumni Fee: | Rs. 500/- (One time) |
- Besides, the candidate admitted to the programme shall pay other fees as per the prospectus at Clause- 11.

8. Core Faculty:

Name of the faculty

Area of specialization

- | | |
|---------------------------------|--|
| 1. Dr. P. K. Naik, Professor | Molecular Biology, Bioinformatics, Drug Development |
| 2. Dr. J. Panigrahi, Reader | Molecular Biology, Plant Genome mapping, Genetic Engg. |
| 3. Dr. A. K. Patel, Reader | Microbiology, Industrial Biotechnology, Bioprocess Engg. |
| 4. Dr. S. Pattnaik, Asst. Prof. | Microbiology, Medical and Pharmaceutical Biotechnology |
| 5. Mr. B. P. Bag, Asst. Prof. | Bioinformatics |
| 6. Dr. B. Behera, Asst. Prof. | Animal Biotechnology, Biochemistry |

Besides, the guest faculties from other Universities, Research Institutes across India having expertise in different fields of biotechnology are invited to impart quality teaching at par.

**OUTLINE OF COURSE STRUCTURE
M.Sc. BIOINFORMATICS (Session: 2017-2019)**

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

**SPECIAL FEATURES OF
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS**

(a) About the Department:

The **Department of Biotechnology & Bioinformatics in Sambalpur University** started functioning from December, 2016 as an autonomous department under self financing mode in reference to Syndicate Resolution (No. 111, dated 23.09.2016) and Office Order (No. 9285/Estt-III, dated 07.12.2016), with a mandate of closing the gap existing between curriculum and the market demand. Previously, the M.Sc (Biotechnology) and M.Sc (Bioinformatics) were offering in a self financing mode in the School of Life Sciences since 2002 and 2006, respectively. The department envisions to excel in academics and research in various domains so as to educate students with highest academic standards coupled with modern technical skills. The department has honoured us as one of the best education institutions in the country for doing outstanding research and education due to its strong R&D program, up-to-date educational curricula, modern laboratory infrastructure and highly qualified faculty. The diversity of specializations and research pursuits of the faculty puts the department in a unique advantage of pursuing research in any area of biotechnology contrary to most of the departments or R and D institutes in India. As a result the faculty is engaged in research on diverse fields, which provides an opportunity to M.Sc and M.Phil students to “**Learn While Doing**” – the motto of our education system for producing world-class leaders in science and technology. We aim to strive for excellence.

(b) Special features of the courses:

Presently the department runs M.Sc (Biotechnology), M.Sc (Bioinformatics) and M.Phil (Biotechnology) under self financing mode. In addition, the department runs Ph.D (Biotechnology) and Ph.D (Bioinformatics) under regular mode. The department imparts education to equip students with modern skills compatible to the needs of industry, academia, government and non-government organizations. Keeping in view the interdisciplinary nature of biotechnology and bioinformatics, the curricula have been specially designed with broad knowledge base, encompassing courses from fundamental sciences (biology, mathematics, physics), computer science & engineering, humanities, in addition to core courses in biotechnology and bioinformatics. The department has introduced an innovative system of elective modules to the final year students wherein the students are given a choice of choosing modules to strengthen their knowledge and skill profile in a particular technology. The elective module system complements the theoretical knowledge of students related to their project work. The curriculum has been specially designed to include the prescribed syllabus of CSIR, GATE, BCIL, BINC and ASRB to make the students globally competitive. Project-based learning is an integral part of all curricular programmes.

(c) Infrastructure and Computational facilities:

We at the Sambalpur University have come up with state of the art infrastructure with a vision to produce technologists appropriately trained in biotechnology and bioinformatics, not merely degree holders. The department is equipped with laboratories facilities for (a) molecular biology, (b) plant tissue culture, (c) genomics and DNA fingerprinting, (d) biochemistry, (e) cytogenetics, (f) microbiology and (g) bioinformatic lab with softwares. Moreover, to form a nucleus for promoting excellent quality of research work in related fields, the department desiring to club the expertise, resources and laboratory facilities available by signing MOU with VSS Institute of Medical Sciences & Research, State Pollution Control Board and other leading institutes of the state.

(d) Major equipments in the Department:

The laboratories are enriched with sophisticated instruments such as Gradient thermal cycler, Real time PCR, Gel documentation system, UV-VIS spectrophotometer, ELISA reader, Vertical and Submarine electrophoresis apparatus, Blotting apparatus, Centrifuges, Ultracentrifuge, Lyophilizer, Laminar airflow apparatus, Freezer (-20⁰C), Millipore water purification system, Bioreactors for process optimization, Hybridization unit, Sterizoomic microscope, Phase contrast microscope, DNA sequencing system, plant tissue culture facility, BOD incubator, Digital electronic balance, Fermenter, Spray dryer, Shaker with water bath, Sonicator, etc.

**3. EXECUTIVE MBA PROGRAMME
IN THE P.G. DEPARTMENT OF BUSINESS ADMINISTRATION**

Name of the Course Coordinator : Prof. A.K. Dasmohapatra **Mob. No.9437158107**

1. ELIGIBILITY CRITERIA:

“Any Graduate with two years of work experience after graduation in any registered Govt./ Private /Autonomous Organisation shall be eligible for apply for admission to the I semester of three-year Executive MBA programme, Entrepreneur and self employed person with Own-SSIS, valid License, TIN, PAN etc. with annual sales turn over of Rs.50.00 Lakh or more and professionals such as Doctors, Engineers, Chartered Accountants, Cost Accountants, Company Secretaries, Legal Practitioners with two year experience will also be eligible for admission.”

Candidates on job, seeking admission to the programme, will have to produce NOC from their respective organizations.

2. SELECTION CRITERIA:

Career:30 Written Test:40 Experience:30

EXPERIENCE:

3 marks shall be given for each completed year of experience subject to a maximum of 30 marks i.e 3 marks per year for a maximum of 10 years.

Formula for calculating career marks (out of 30) will be as per the general selection criteria except for +3 which will be as follows:

$$\text{Marks Secured in \%} = \frac{\text{Total Marks secured}}{\text{Maximum Marks}}$$

<u>Percentage of Marks</u>	<u>Weightage</u>
75% or above	15
60% or above but less than 75%	12
45% or above but less than 60%	10
All other eligible candidates	08

3. DURATION OF THE COURSE: 3 YEARS

4. NUMBER OF SEATS: 40 (minimum number to run the programme 20)

5. FEE STRUCTURE:

- a) **Course Fee :** Rs.10,000/- per Semester payable in the begining of each semester.
- b) **Other fee:** Admission fee, Examination fee and Development fee etc. as per Clause 11 of Prospectus.

6. COURSE STRUCTURE

1st Semester		Marks
E-E-101	Management process and Organisation Behaviour	100
E-102	Human Resource Management	100
E-103	Financial Accounting for Managers	100
E-104	Quantitative Methods for Managers	100
E-105	Marketing Management	100

2nd Semester		Marks
E-201	Managerial Economics	100
E-202	Financial Management	100
E-203	Strategic Cost & Management Accounting	100
E-204	Indian Ethos & Values	100
E-205	Management Science	50

3rd Semester		Marks
E-301	Research Methodology	100
E-302	Computers for Management	100
E-303	Three Elective Specialization	100
E-304	Papers from Groups of E-303 to	
E-305	E-305	

4th Semester		Marks
E-401	Business Environment	100
E-402	Production Management	100
E-403	Three Elective Specialization Papers from	100
E-404	Groups of E-403 to E-405	
E-405		

5th Semester		Marks
E-501	Business Policy	100
E-502	Business Legislation	100
E-503	Three Elective Specialization Papers from	100
E-504	Groups of E-503 to E-505	
E-505		

6th Semester		Marks
E-601	Management Information System	100
E-602	Strategic Management	100
E-603	Corporate Governance	100
E-604	Dissertation (Equivalent to two Papers)	200

SPECIALIZATION OFFERED

Floating of an area of specialization will be the exclusive prerogative of the department and the mere mentioning of the areas of specialization in the prospectus does not entitle a candidate the right to press for the opening of an area of specialization of his/her own choice.

ELECTIVE SPECIALISATION PAPERS: All Papers carry 100 Marks each.

Finance

E-303FIN Security Analysis and Portfolio Management

E-304FIN Project Planning and Appraisal Method

E-305FIN Working Capital Management

E403FIN Management Control System

E-404FIN Corporate Taxation

E-405FIN Corporate Restructuring

E-503FIN Financial Derivatives

E-504FIN international Accounting

E-505FIN international Finance

Human Resource Management

- E-303 HRM Industrial Relation
- E-304 HRM Manpower Training and Development
- E-305 HRM Human Resource Development Strategies and System
- E-403 HRM Manpower Development for Technological Change
- E-404 HRM Compensation Management
- E-405 HRM Managing Interpersonal and Group Processes
- E-503 HRM Counseling skills for Managers
- E-504 HRM Cross Culture and Global Management
- E-505 HRM Legal Framework Governing Human Relation

Production

- E-303 PRO Total Quality Management
- E-304 PRO Production Planning and Control
- E-305 PRO Logistic Management -
- E-403 PRO Purchasing and Material Management
- E-404 PRO Applied Operation Research
- E-405 PRO Transportation Management
- E-503 PRO Goal Programming in Management
- E-504 PRO Service Operation Management
- E-505 PRO World Call Manufacturing

System

- E-303 SYS' Derision Support System
- E-304 SYS Business Process Reengineering
- E-3Q5 SY5 System Analysis and Design
- E-403 SYS Database Management

Planning

- E-405 SYS IT Application for Business
- E-503 SYS Security and Control Information System Dissemination
- E-504 SYS Software Engineering Management
- E-505 SYS E-Business

Marketing

- E-303-MAR Consumer Behaviour
- E-304-MAR Advertising Management
- E-305-MAR Sales and Distribution Management
- E-403-MAR Strategic Management
- E404-MAR Marketing of Services
- E-405-MAR Retail Management
- E-503-MAR International Marketing
- E-504-MAR Brand Management
- E-505-MAR Marketing Research

Rural Management

- E-303 RUR Corporative Management
- E-304 RUR Rural Credit Finance
- E-305 RUR Rural Resource and Development
- E4Q3 RUR Rural Industrialization
- E-404 RUR Participatory Development in Rural Areas
- E405 RUR Rural Marketing
- E-503 RUR Waste Land Management
- E-504 RUR Urban Development and Regional Planning
- E-505 RUR Urbanization in India

Small Business and Entrepreneurship Management

- E-303 SBE Government Business Interface
- E-304 SBE Small Business Marketing
- E-305 SBE Financing of Small Business
- E-403 SBE New Enterprises Management
- E-404 SBE Entrepreneurial Development
- E-405 SBE Small Business Environment and Management
- E-503 SBE Innovation and Small Business Management
- E-504 SBE Small Business Investment and Management
- E-505 SBE Small Business & Export Management

Health Care Administration

- E-303 HCA Organization and Management of Hospital
- E-304 HCA Health Care and Social Policy
- E-305 HCA Health System Management
- E-403 HCA Health Care Economics and Finance
- E-404 HCA Environmental Health Management and Safety
- E-405 HCA Health and Hospital Information System
- E-503 HCA Health Communication: Development and
- E-504 HCA Community Health, Epidemiology & Population
- E-505 HCA Support and Utility Services and Risk Management

7. COURSE FACULTY :

1. Prof. (Mrs.) P.Gahan
2. Prof. B.Satpathy
3. Prof. A.K.Das Mohapatra
4. Dr. P.C. Tripathy
5. Dr. T.K. Das
6. Mr. S. Kerketta
7. Dr. D.K. Mahalik
8. Dr. A. Chand
9. Prof. R.P. Das
10. Prof. D.V. Ramana
11. Prof. P.N. Panda
12. Prof. S.S. Rath
13. Mr. P. Dandsana
14. Dr. K. Pradhan
15. Dr. . S. Sahu
16. Mr. N.K. Ojha
17. Mr. D. Chhatopadhyaya
18. Mr. O.P. Mishra
19. Prof. S.P. Mishra
20. Prof. A.K. Sribastab
21. Mr. J. Patjoshi
22. Prof. S. Teki
23. Dr.(Mrs.) M. Pattnaik
24. Ms. A. Samal
25. Dr. S.K. Sahoo
26. Dr. R.K. Mishra

Guest faculties will also be invited.

8. OTHER SPECIAL FEATURES OF THE COURSE AND HOST DEPARTMENT:

The course has been designed to develop Executive by equipping them with managerial tools and techniques so as to make them capable of shouldering higher responsibility and contributing to the organizational growth.

The Department is equipped with highly qualified and experienced faculty with adequate modern infrastructure.

**Join Hands to make your Campus
Ragging Free**

4. MBA (FINANCIAL MANAGEMENT)

(EQUIVALENT TO THE DEGREE OF MASTER IN BUSINESS ADMINISTRATION WITH SPECIALISATION IN FINANCE)

P.G. DEPARTMENT OF ECONOMICS (AUTONOMOUS)

Name of the Course Coordinator : Prof. S.S. Rath

Mob. No.9437126614

1. **ELIGIBILITY CRITERIA** : At least 2nd Class Hons. in B.A/B.Sc./B.Com or Pass Student with 45% in aggregate.
2. **SELECTION CRITERIA** : Career 30%, Written Test 70%. The distribution of career mark is as follows:
- | | | | | |
|--------------------|---|--|---------------------------|------------------------------|
| H.S.C.E. | : | 1 st Divn.-6 | 2 nd Divn.-4.5 | 3 rd Divn/Pass.-3 |
| +2 | : | 1 st Divn.-9 | 2 nd Divn.-7 | 3 rd Divn/Pass.-5 |
| +3(Honours) | : | <u>Marks secured in Honours Subject</u> X 15
Maximum Marks in Honours Subject | | |
| +3(Pass) | : | <u>Agreegate Marks secured</u> X 12
Maximum Marks | | |

3. **DURATION OF THE COURSE** : 2 YEARS

4. **NUMBER OF SEATS** : 32 + 4 sponsored seats (minimum number required to run -20)

5. **FEE STRUCTURE** : Course fee Rs.15,000/- Per Semester in addition to fee prescribed at Clause-11 of the Prospectus.

6. **COURSE STRUCTURE** :

1 ST Semester	Credits
Managerial Concepts & Organisational Behaviour	3
Business Environment	3
Managerial Economics	3
Statistical Analysis	3
Financial & Cost Accounting	3
Marketing Management	2
Financial Management	2
Total	23

2nd Semester	Credits
Accounting for Managerial Decisions	3
Computer Application and Business	3
Financial Institution & Market	3
Corporate Legal Framework	3
Investment Management	4
Security Market Operation	3
Research Methodology and Business Communication	3
Total	22

3rd Semester	Credits
Operational Research	3
Financial Services Marketing	3
International Finance	4
Portfolio Management	3
E-Commerce	3
Corporate Tax Planning & Management	3
Training Report & Presentation	3
Total	22

4th Semester	Credits
Strategic Management	3
Strategic Financial Management	3
Insurance Management	3
Management Information System	3
Multinational Financial Management	3
Derivatives and Risk Management	3
Project Report and Viva-Voce	5
Total	23

7. COURSE FACULTY : Core & Guest Faculty

<p>Economics :</p> <p>1. Dr. S.S. Rath Professor</p> <p>2. Dr. (Mrs.) S. Das Reader</p> <p>3. Dr. R.K. Kumbhar Lecturer</p> <p>4. Dr. (Mrs.) L. Mishra Lecturer</p>	<p>Dept. of Law</p> <p>1. Sri. J. Patjoshi Reader (Retd.)</p>
<p>Dept. of Business Administration</p> <p>1. Dr. A.K. Das Mohapatra Professor</p> <p>2. Dr. P.C. Tripathy Reader</p>	<p>U.C.E., Burla U.C.E, Burla</p> <p>1. Dr. Debadutta Mishra Professor</p> <p>2. Sri H.S. Behera Lecturer</p>
<p>Chartered Accountant</p> <p>1. Sri M. Agrawal C.A.</p>	

8. OTHER SPECIAL FEATURES OF THE COURSE AND HOST DEPARTMENT :

This 2 year Master degree programme is an application oriented Self-financing course based on discipline of Economics and Management, which suits the requirement of students to join private sector, public sector and business houses.

The Course has the sole objective of generating experts in finance, who can handle complex financial problems of enterprises (public as well as private) with personal integrity and social responsibility. The students challenged through readings, case discussion, project formulation and solving complex business problems. The course curriculum covers key financial areas of finance and so designed to foster creative thinking and innovative approach among the students.

The Autonomous Department has the unique distinction in the State of introducing Quantitative Economics & Public Economics in teaching and Research. The Department has a very strong alumni with placement of the products of the Department in various national and international institutions. The Department has been associated with Govt. and other Non-governmental organizations in collaborative and consultancy work.

5. MASTER OF SOCIAL WORK (MSW) IN THE P.G. DEPARTMENT OF SOCIAL WORK

Name of the Course Coordinator : Mr. Suresh Chandra Murmu **Mob. No.09937964151**

1. MINIMUM ELIGIBILITY: Any graduate securing 2nd class (Honours) or 45% of marks in aggregate in case of pass subjects. 5% relaxation in respect of the qualifying marks to be made for in-service candidates.

2. SELECTION CRITERIA: Written Test (70%), Career (30%)

CALCULATION OF CAREER MARKS

H.S.C.E. : 1st Divn.-6 2nd Divn.-4.5 3rd Divn/Pass.-3

+2 : 1st Divn.-9 2nd Divn.-7 3rd Divn/Pass.-5

+3(Honours) : Marks secured in Honours Subject X 15
Maximum Marks in Honours Subject

+3(Pass) : Aggregate Marks secured X 12
Maximum Marks

3. DURATION OF THE COURSE: 2 years (Full-time), Course curriculum involves camp-based field work, observational visits and industrial tours.

4.TOTAL NO. OF SEATS: **32** (For Regular Candidates) **06** (For In-Service Sponsored Candidates In-service candidate has to produce a '**no-objection certificate**' and '**relief order**' from his/her employer at the time of admission, there shall be no relaxation in attendance for in-service candidates) in case of non-availability of suitable in-service candidate the seats will be filled up by the candidates of general category whose names will figure in the merit list.

5. FEE STRUCTURE:

1st Semester

Course Fee: Rs. 12,000/- (for Regular candidates)
Course Fee: Rs. 15,000/- (for In-service candidates)
Development Fee: Rs.2,500/-
Seminar Fee: Rs.1,000/-
Infrastructure Fee: Rs.1500/-
Examination Fee: As per University prescribed fee
University Admission Fee for 2017-18:
As per University prescribed fee

2nd Semester

Course Fee: Rs. 12,000/- (for Regular candidates)
Course Fee: Rs. 15,000/- (for In-service candidates)
Development Fee: Rs.2,500/-
Fieldwork Fee: Rs.3,000/-
Seminar Fee: Rs.1,000/-
Examination Fee: As per University prescribed fee

3rd Semester

Course Fee: Rs. 12,000/- (for Regular candidates)
Course Fee: Rs. 15,000/- (for In-service candidates)
Development Fee: Rs.2,500/-
Fieldwork Fee: Rs.3,000/-
Seminar Fee: Rs.1,000/-
Examination Fee: As per University prescribed fee

4th Semester

Course Fee: Rs. 12,000/- (for Regular candidates)
Course Fee: Rs. 15,000/- (for In-service candidates)
Development Fee: Rs.2,500/-
Seminar Fee: Rs.1,000/-
Examination Fee: As per University prescribed fee

6. COURSE STRUCTURE: Framed along the line of the UGC model course curriculum for MSW (Total: 80 CH)

FIRST SEMESTER			SECOND SEMESTER		
Course No.	Title	CH	Course No.	Title	CH
MSW-411	History and Philosophy of Social Work	4 CH	MSW-421	Social Exclusion and Inclusive Policy	4 CH
MSW-412	Social Problem and Social Development	4 CH	MSW-422	Rehabilitation and Resettlement	4 CH
MSW-413	Social Work Research and Quantitative Analysis	4 CH	MSW-423	Social Work Methods	4 CH
MSW-414	Human Growth and Development	4 CH	MSW-424	Women & Development	4 CH

MSW-415-a	Social Work Practicum –I (Structured Experience Laboratory and Research Methodology Practical)	2 CH	MSW-425 - a	Social Work Practicum –III, (Concurrent field work – Community Placement)	2 CH
MSW-415-b	Social Work Practicum-II (Skill Development Assessment)	2 CH	MSW-425 - b	Social Work Practicum –IV (Learning Social Work through Participatory Approach)	2CH
Non-Credit	IT in Social Sector		Non-Credit Course -I	Community Intervention and Entrepreneurship Development	
Total		20 CH	Total		20 CH

THIRD SEMESTER			FOURTH SEMESTER		
Course No.	Title	CH	Course No.	Title	CH
MSW-511	Ideology and Ethics of Social Work	4 CH	MSW-521	Social Work Administration	4 CH
MSW-512	Social Legislation and labour Welfare	4 CH	MSW-522	Corporate Social Responsibility	4 CH
MSW-513	Vulnerable Children and their Development	4 CH	MSW-523	Poverty Reduction & Livelihood promotion	4 CH
MSW-514	Elective Course (A student has to select any one of the following elective courses) 1. Human Resource Development – I (4 CH) 2. Community Development–I(4 CH)	4 CH	MSW-524	1. Human Resource Development – II (4 CH) 2. Community Development – II (4 CH)	4 CH
MSW-515-a	Social Work Practicum-V (Concurrent Field Work – Agency Placement) (2 CH)	2 CH	MSW-525	Dissertation writing & Viva-Voce	4 CH
MSW-515-b	Social Work Practicum-VI (Micro Level Study on Social Exclusion) (2 CH)	2 CH	Non-Credit - I	Fundamental of Medical Social Work	
Non-Credit	'Disaster Preparedness and Management'		Non-Credit – II	'Block Field Work Placement'	
Total		20 CH	Total		20 CH

SPECIALIZATION OFFERED: (1) Human Resource Development (2) Community Development

7. COURSE FACULTY:

Core Faculty	
Mr. S.C. Murmu	Dr. Ratnawali
Dr. R. Pramanik	Miss. B. Meher
Mr. Madan Biswal	Ms. Swagatika Samal
Guest Faculty	
Prof. P.N. Sahu (Retd.) (Anthropology)	Prof. S. Panda (VSS Medical College, Burla)
Prof. Smita Panda (VSS Medical College, Burla)	Prof. Mamata Giri (VSS Medical College, Burla)
Prof. R.C. Giri (VSS Medical College, Burla)	Mr. J. Patjoshi (Retd.) (Dept. of Law, S.U.)
Dr. Lopamudra Mishra	Prof. B. Panda, (Retd.) (Dept. of Home Science, S.U.)
Prof. S.S. Rath (Dept. of Economics)	Prof. B.K. Mishra, (Retd.) (Dept. of Home Science, S.U.)
Mr. Sumanta Kerketta (Dept. of Business Admin.)	Er. D.K. Mahalik (Dept. of Business Admn., S.U.)
Prof. A.K. DasMohapatra (Dept. of Business Admin.)	Dr. Diptibala Pattnaik, Ex-Joint Director, Health
Prof. Mehul Chauhan, XIDAS, Jabalpur	Mr. Joy Gorge, Secretary, IRCS, Sambalpur Branch
Prof. D.K. Behera (Retd.) (Anthropology)	

8. SPECIAL FEATURES OF THE COURSE AND HOST DEPARTMENT

Sambalpur University launched MSW course from the academic session 2007-08. The course is being handled by a group of experienced faculty from the Post-Graduate Departments of Anthropology, Sociology, Economics, Political Science and Public Administration, Home Science, English, Business Administration and Law, The Department of Anthropology, Sambalpur University coordinates this self-financing course.

Infrastructure Facilities and Other Features

- Well-furnished classrooms, air-conditioned Conference Hall and computer laboratory with 16 computers and internet facility
- Use of LCD projector in class room teaching and transfer of course materials sent to students via internet, Photocopying facility
- Emphasis on capacity building (computer skill, communication skill, project writing and event management)

The Department

- Official headquarters of the International Commission on Children, Youth and Childhood.
- NLMA identified nodal agency for the evaluation of PLC and TLC outcomes.

Local Collaborations

- Dept. of Community Medicine, VSS Medical College, Burla, Sambalpur (Medical Social Work)
- Indian Red Cross Society, Sambalpur Branch
- Patang, New Delhi (NGO): Social action for rural community, Sambalpur (NGO)
- Trilochan Netralaya, Sambalpur
- MASS, Sambalpur

MoU Signed with Overseas Institutions

- Institute for Ethnology, Free University of Berlin, Germany
- Dept. of Anthropology, University of Free State, South Africa
- Universidad Autonoma de NuevoLeon, Mexico
- Aarhus University, Denmark

Workshop/Training Programme Attended by the Students of MSW during 2008-10

- National Seminar on "Human Genomic and Cultural Diversity," during March 2-4, 2009 organized by School of Studies in Anthropology, Pt. Ravi Shankar Shukla University, Raipur. Chattisgarh.
- National workshop "Status of Social Science Research and Teaching in Eastern India," organised jointly by the School of Bio-Social Studies, Sambalpur University and Indian Council of Social Science Research, Eastern Regional Centre, Kolkata during February 17-19, 2009.
- National Seminar on Dynamics of Tribal Development, during January 30-31, 2009 organized by Department Of Anthropology, Andhra University at Andhra University, Vishakapatnam, Andhra Pradesh.
- State-Level Workshop of Voluntary Blood Donors Organization on January 24-25, 2009, organized by Tyaga, Burla at MCL, Burla.
- Humanity and Applied science, on December 7-S, 2008 organized by Institute of Social Research and Applied Anthropology at Bidisa, Midinapur. Youth at Cross Roads, on October 15-16, 2008, organized by St. Aloysius College at Mangalore.
- National Conference and Workshop of Voluntary Blood Donors Organization, on May 10-12, 2008, organized by Tyaga, Burla at MCL, Burla.
- National Assembly And Workshop And Felicitation Ceremony of Voluntary Blood Donors Organizations And Motivators, organized by TYAGA, Orissa on December 25-27, 2009.
- Regional workshop on "Alternative Forms Of Care For The Children Without Parental Care", at Sambalpur on December 18-19, 2009.
- Lets Volunteer For Our Planet organized by VSO INDIA, in association with Bakul Foundation in CYSD, at Bhubaneswar on December 5, 2009. Training on "Forest Rights Act", organised by Vasundhara at CYSD, Bhubaneswar from October 29-31, 2009.
- A Consultation on 'Forest Right Act', at CYSD, Bhubaneswar, organized by Vasundhara, Bhubaneswar, on September 1-2, 2009-
- "AHWAN- A Call For Action: Appreciating Diversity" organized by PATANQ, Sambalpur at Govt. Boys High School, Burla on August 20, 2009.

- Symposia on “Corporate Social Responsibility With Emphasis On Rehabilitation & Resettlement” organized by National Institute of Personal Management, Mahanadi Chapter ,MCL Burla on July 11, 2009.
- Participated in “Social Audit OfNREGS” in West Bengal in June, 2009.
- “Volunteer Fair” organized by VSO India, in association with Bakul Foundation in CYSD, Bhubaneshwer on December 6,2008.

Invited Lectures Delivered by Overseas Scholars in the department

- Professor Marine Carrin, Centre for Anthropology, Toulouse, France, 2008
- Dr. Uwe Skoda, Free University of Berlin, Germany, 2008
- Dr. Christian Strumpell, Free University of Berlin, Germany, 2008
- Dr. Sabastenia Zulie, University of Bonn, Germany, 2008
- Dr. Arun Kumar Acharya, Institute of Social Sciences, Monterrey, Mexico, 2008
- Dr. Lidiya Guzy, Institute for Ethnology, Free University of Berlin, 2007 and 2008
Mr. Ken Snow, VOS, UK, 2008
- Dr. Uwe Skoda, Aarhus University, Denmark,2010
- Dr. Christian Strumpell, Free university of Berlin, Germany2009
- Dr. Lidiya Guzy, institute For Ethnology, Free University of Berlin 2009
- Mr. Ken Snow, VOS, UK, 2009
- Dr. Andey Richards, 2009
- Dr. Peter Berger, 2009
- Ms. Eva Ritchel, 2009
- Prof. Peter Berger, University of Groningen ,Netherland
- Prof. Pablo Flock, University of Tubingen, Germany

Organization of International/National Workshop in Fast Years

- International Workshop: *Culture and Society of Western Orissa* (In collaboration with Institute of Ethnology, Free University of Berlin) 14 students from Free University of Berlin along with their teacher participated in the workshop, January 9-11, 2007.
- National Workshop: *Status of Social Science Research and Teaching in Eastern India*, organized jointly by School of Bio-Social Studies, Sambalpur University and Indian Council of Social Science Research, Eastern Regional Centre, Kolkata during March 17-19,2009.

For further details about the course, contact:

The Coordinator, MSW Program, Department of Social Work, Sambalpur University, Jyoti Vihar-768 019, Sambalpur , Odisha Phone Number: Office: 0663-2432860;
Cell: 9937964151; Email: smurmu10@gmail.com Visit website: www.suniv.ac.in

**6. M.TECH IN ENVIRONMENTAL SCIENCE AND ENGINEERING
IN P.G.DEPARTMENT OF ENVIRONMENTAL SCIENCE (AUTONOMOUS)**

Name of the Course Coordinator : Dr. S.K. Pattanayak Mob. No.9439809787

1. MINIMUM ELIGIBILITY : M.Sc in any Science subject or B.Tech /B.E degree in any professional Course with a minimum of four years education after +2 degree

2. SELECTION CRITERIA : Career -30%,Written- 70% marks with the following distribution

For General M.Sc.Students	First Dvn	Second Dvn	Third Dvn
H.S.C.E	6.0	4.5	3.0
+2	6.0	4.5	3.0
+3 (Hons)	9.0	7.0	5.0
Distinction	1.0	1.0	1.0
M.Sc.	8.0	6.0	4.0
For Professional degree students	First class Hons	First class	Second Class
B.E /B.Tech(after +2)	18	13	8

(When number of application is less than the sanctioned strength, merit list will be prepared based on career mark only)

3. DURATION OF THE COURSE: 2 YEARS

4. NUMBER OF SEATS: 24 (Minimum number to run the course 10)

5. COURSE FEE: Rs.25,000/- per Semester for regular students. Rs.30,000/- per Semester for sponsored students. This is in addition to fee prescribed at Clause 11 of the Prospectus.

6. COURSE STRUCTURE:

FIRST SEMESTER

CORE Course No.	Title of the Course	Credit Hours
ESE 611	Fundamentals of Ecology and Environmental Sciences	3
ESE 612	Environmental Chemistry, Pollution and Control	3
ESE 613	Environmental Policies and Laws	3
ESE 614	Environmental Microbiology	3
ESE 615 A OR	Advanced Applied Statistics, Environmental System Optimization and modeling	3
ESE 615 B OR	Environmental Toxicology	3
ESE 615 C	Industrial Safety and Management	
ESE 616	Laboratory: Environmental Monitoring I	3
ESE 617	Seminar presentation	2
Total Credit hours		20

SECOND SEMESTER

CORE Course No.	Title of the Course	Credit Hours
ESE 621	Instrumental Techniques and application in Environmental Science and Engineering	3
ESE 622	Environmental Impact Assessment, Environmental Audit and Environmental Management Systems	3
ESE 623 A	Air Quality Management	3
ESE 623 B	Remote Sensing and Geological information System	3
ESE 623 C	Hazards Control and Management in Industries	

ESE 624	Laboratory: Environmental Monitoring II	3
ESE 625	Seminar Presentation	2

ELECTIVE COURSE	A student shall select any one paper from ENS 623 and will have the option to choose any one of the following groups of Elective Course consisting of two papers, each of 3CH	
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	GROUP I: Pollution Control and Management in Mining Industry	
ESE 626 A	Environmental aspects of Mining Industries	3
ESE 626 B	Solid and Hazardous Waste Management and land Reclamation	3
	GROUP II: Hydrogeology ,Watershed Management and Waste Water Engineering	
ESE 627 A	Hydrogeology and watershed Management	3
ESE 627 B	Waste water Engineering	3
	GROUP III: Environmental Geology	
ESE 628 A	Environmental Geology and Disaster management	3
ESE 628 B	Remote Sensing and Geological information System	3
	Total Credit hours	20
	GROUP III: Green Technology and Management	
ESE 629 A	Green Technology and Sustainable Development	3
ESE 629B	Soil Pollution and Waste Management	3
	Total Credit hours	20

A candidate shall select any one paper from ESE 623

- At the end of Second Semester, each student shall undergo one month summer training in an Industrial Establishment or Scientific Institution or any other organization and submit a Project Report on the activities for evaluation during third Semester. The student may ,in lieu of summer training , work on a minor project and submit the report for evaluation during the third semester.
- From the beginning of the third Semester, a student shall work on a dissertation under the supervision of a suitable Guide from the P.G. Departments or outside including Scientists and Technocrats from Industries and Corporate Sectors with the approval of the Academic Committee. The dissertation will be evaluated both during Third semester (Interim) and Fourth Semester
- ESE 623 B can only be opted by students who do not belong to Environmental Geology Specialisation

THIRD SEMESTER

Course No.	Title of the Course	Credit Hours
ESE 711	Evaluation of Summer training Report/Minor Project Report	4
ESE 712	Seminar and Viva-Voce on Summer training Report/Minor Project Report	4
ESE 713	Comprehensive Viva-Voce	4
ESE 714	Evaluation of Dissertation(Interim) ,seminar and viva-Voce	8
	Total Credit Hours	20

FOURTH SEMESTER

Course No.	Title of the Course	Credit Hours
ESE 721	Evaluation of Dissertation	12
ESE 722	Seminar on Dissertation	4
ESE 723	Viva-Voce on dissertation	4
	Total Credit Hours	20

Total Credit Hours of the Semesters-80

SPECIALIZATION OFFERED :

1. Pollution Control and Management in Mining Industry
2. Hydrogeology, Watershed Management and Waste Water Engineering
3. Environmental Geology
4. Green Technology and Management

7. COURSE FACULTY : A. Core Faculty

SI No.	Name of the teacher	Qualification	Area of Specialisation	Email address/ Telephone
1.	Prof. S.K.Sahu Professor	M.Sc,M.Phil Ph.D	Soil Biology & Biotechnology, Solid Waste Management, Vermitechnology and Ecotoxicology and Environmental Monitoring	sahusanjat@rediffmail.com sanjatenv@yahoo.com Tel - 91-663-2430654-R 2431033 - O
2.	Dr. S.K. Pattanayak Reader	M.Sc., Ph.D.	Geology and Geochemistry, GIS, Remote Sensing, Basin Studies, EIA and EMP, Disaster Management.	skp.envsu@gmail.com Tel-91-0663-2430855-R 2431033-O 9439809787-M
3.	Dr. M.R. Mahananda Lecturer	M.Sc., M.Tech, M.Phil, Ph.D	Ecotoxicogenomics, Genetic Toxicity, Molecular Mutagenesis, Microbial ecological study, Management of hazardous solid waste, Chemical hazards on reproductive health	malay_env@rediffmail.com Tel-91-06632430316-R 2431033-O M-9337303767
4.	Dr. I. Baitharu	M.Sc., M.Phil. Ph.D.	Metagenomics, Environmental Toxicology, Neurotoxicology, Environmental Biotechnology	iswarbaitharu@suniv.ac.in Tel – 91-0663-24101101 – R 2431033 – O 8763313595 - M

B-Guest Faculty

- | | |
|---------------------------|---|
| 1.Prof.Niranjan Behera | Retd. Professor in Life Sciences ,Sambalpur University |
| 2.Prof.Ashutosh Naik | Retd. Professor in Earth Sciences ,Sambalpur University |
| 3.Prof.B.Behera | Retd. Professor in Chemistry ,Sambalpur University |
| 4.Mr.J.N.Patjoshi (Retd.) | Department of Law Sambalpur University |

Guest faculty from inside and outside the states are regularly invited to impart teaching in M.Tech Programme

C-Contractual Faculty

- 1.Dr.(Mrs.) R. Panda
- 2.Mr. A. Bhadra

8. OTHER SPECIAL FEATURES

a. About the M.Tech. Programme

The M.Tech programme in Environmental Science and Engineering is first of its kind in the state and one of the few in the country and has successfully entered into the fourth year of its existence. It is a four semester UGC approved degree and Sambalpur University approved course. It has course work and research project component. It is a regular course and keeping in view of its usefulness to serving employees the teaching is imparted on all days (except Sunday) during afternoon / evening hours and from 10 to 4 pm on Sunday. The course structure includes advanced modules in Environmental Science and Engineering and has been designed at par with the other premier institutes of the country and keeping the employment opportunity of the students in view. Five M.Tech. students of the first batch of the Department have joined Vedanta Aluminium at Jharsuguda as Environmental Scientists.

b. About the Host Department

The Department of Environmental Sciences in Sambalpur University was approved by the University Grants Commission during seventh plan period and was established in 1989 as the only Post Graduate Department of its kind in the state of Orissa and one of the few in the country. The Department started M.Phil. programme from the academic session 1990-1991 and M.Sc. programme from the session 1994-95. At present the student intake is ten at M.Sc. level and six at M.Phil. level. In addition to this five seats at M.Sc. and two seats at M.Phil. are filled up as self-financing seats. The Department is now highly acclaimed for a programme on M.Tech. in Environmental Science and Engineering on self-financing basis from the session 2007-08. This year there is an intake of twenty students into this programme. Besides these, the Department is running two self-financing courses, namely, P.G. Diploma in Environmental Education and Management (PGDEEM) and P.G. Diploma in Industrial Safety and Health (PGDEEM) through Distance Education mode. Based on its academic excellence, the Department is granted academic autonomy from the session 2006-2007.

The Department offers courses at M.Sc., M.Phil. and M.Tech. levels on various aspects of Environmental Sciences like System Ecology, Population and Community Ecology, Environmental Pollution, Resource Conservation and Management, Instrumental Techniques, Computer application and data analysis, Forest Ecology, Environmental Law and Society, Environmental Toxicology, Soil Biology and Biotechnology, Ecological Monitoring, Soil Pollution and Waste Management, Applications of Remote Sensing and GIS into Environmental Science, Energy Resources, Environmental aspects of Mining Industry, Hydrology & Watershed Management, Waste Water Engineering, EI A and EMP etc. Besides these, Seminar and Summer Training, Term Paper & Dissertation work are also part of the course curricula. The course curricula of the Department have been updated from time to time to imbibe advanced knowledge in different areas of Environmental Science & Technology. To cater to the need of the students, the Department has a seminar library of about 600 books and a dozen of computers with Internet facilities and instruments relating to monitoring of air, water, soil and noise and analysis of biological samples etc.

Over the years the research activities have been carried out by the faculty members in the different areas of pollution monitoring, control and management. The teachers of the department have published a total number of 180 research papers in various national and international journals and 13 authored/edited books. As many as 17 Ph.D., 80 M.Phil, and 200 M.Sc. and 14 M.Tech. Students have been awarded degrees from this Department. The Department has received financial support to the tune of Rs. 60 lakhs in the form of research projects from UGC, New Delhi, UNEP/GEF, INDAL, HiraKud, OPGC, Bhubaneswar, OSPCB, Bhubaneswar, NTPC, Faraka, NTPC, Kaniha, MCL, Sambalpur, ICMR, New Delhi. During 2003-2004, the department received a prestigious FIST grant of Rs. 20 lakhs from the Department of Science and Technology, Government of India to update the infrastructure facility of the Department.

The teachers of the Department are also associated with industries and other agencies in consultancy work on taxo-ecological enumeration of flora and fauna, air and water monitoring, management of organic waste through vermicomposting, fly ash utilization in agriculture, low cost waste water technology, assessment of quality of life of people around Development Projects, ecological enumeration of vegetation and their potential in carbon removal etc. The thrust and focus of the future research plan of the Department is Environmental Technology, Low-Cost Waste Water Treatment, Solid Waste Management, EIA and EMP Studies.

Since its inception, the Department has organised three National Seminars, three Workshops and ten U.G.C. sponsored Refresher Courses. The Department has already organized some national level Seminars viz. i) *Emerging Perspectives on Disaster management* during February 19-20, 2003 in collaboration with the Department of Anthropology, S.U., ii) *Environment and Sustainable Development* during March 17-18, 2007, and iii) *Sustainable Development of Earth Resources: Strategies on Management plan*, during February 13-14, 2010 in collaboration with the Department of Earth Sciences, S.U. The Department is on its way to organise an International Seminar on *Environment, Energy and Development (from Stockholm to Copenhagen and beyond)* during December 2010.

The teachers of the Department are also well recognized in their fields at National and International levels. Prof. P.C. Mishra has been nominated as a fellow of NIE, ZSI and Society of Environmental Sciences and is an Associate Fellow of International Congress of Chemistry and Environment. He is currently the president of Society of Environmental Science, Chief Editor of Indian Journal of Environment and Ecoplanning, Member of the Editorial Board in The International Journal of Chemistry and Environment, Bioscan, Indian Journal of Environmental Science. For his significant research contribution to Environmental Sciences he is felicitated with Prof. M.C. Dash gold medal instituted by ZSI, E.P. Odum Gold Medal by Society of Ecological Communication of India, Charles Darwin Gold Medal by Society of Ecological Communication of India. Prof. S.K. Sahu has also been accredited with young scientist award by Environmental Research Academy in the year 2001 for his significant research in the field of Environmental Sciences. He has been nominated as a Fellow of Zoological Society of India, Society for Sciences and International Society for Ecological Communications. He is currently the Assistant Editor of Journal of Food, Agriculture and Environment published from Finland. . The department has experts in the field of Biology, Chemistry, Environmental pollution and Management, Ecotoxicology, Soil Biology and Biotechnology, as well as Geology and Geochemistry.

A post graduate, MPhil or M.Tech. student or a researcher of the department gets an appropriate training of working together in an inter-disciplinary environment. Many alumni of the Department are well placed in different teaching and research positions in various Government, Semi-Government Institutions, Universities, SPCB, CPCB, National and Multinational organizations in India and abroad. Many students have also opted a career in NGO in Orissa and outside. At present the Department has five Ph.D. scholars with regular fellowship who are pursuing research in different facets of Environmental Science.

For further information, contact:

Dr. S.K. Pattanayak,

***Department of Environmental Science, Sambalpur University, Jyoti Vihar-768019
(e.mail: skp.envsu@gmail.com) Tel-91-0663-2430855(R), 2431033(O), 9439809787(M)***

7. M. Sc. IN APPLIED CHEMISTRY IN THE SCHOOL OF CHEMISTRY (AUTONOMOUS)

Name of the Course Coordinator : Prof.(Mrs.) P.K. Misra

Mob.No.9938333244
9437657878

1. ELIGIBILITY CRITERIA : (i) Hons. in Chemistry with Physics or Mathematics as the Pass subject or (ii) Chemistry/ Industrial Chemistry as a Pass subject with Mathematics and Physics with 45% marks in aggregate, (iii) B. Sc./ B.E./ B. Tech. in Chemical Engineering with minimum 45% in aggregate. There will be a Common Entrance Test for the admission into M. Sc. in Chemistry and Applied Chemistry.

2. SELECTION CRITERIA: As per general selection criteria.

Formula for calculating career mark

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

+3(Honours): $\frac{\text{Marks secured in Honours Subject}}{\text{Maximum Marks in Honours Subject}} \times 15$

+3(Pass) : $\frac{\text{Aggregate Marks secured}}{\text{Maximum Marks}} \times 12$

B.Sc. / B.E. / B.Tech. in Chemical Engineering (Marks Secured in percentage)

“Total Marks Secured / Maximum Marks X 100”

75% and above = 15

60% and above but less than 75% = 12

45% and above but less than 60% = 10

All other eligible candidates = 08

3. DURATION OF THE COURSE: 2 Years

4. NUMBER OF SEATS: 15

5. FEE STRUCTURE:

In addition to fees prescribed in the Prospectus at Clause-11, a candidate shall pay Rs.25,000/- per Semester as Course Fee at the time of admission to each Semester.

6. COURSE STRUCTURE:

COURSE No.	COURSE TITLE	CREDITS
1ST SEMESTER		
ACH-401	GROUP THEORY, SOLID STATE AND NEUCLEAR CHEMISTRY	3
ACH-402	INORGANIC REACTION DYNAMICS	3
ACH-403	STRUCTURE AND REACTIVITY	3
ACH-404	STERIO CHEMISTRY	3
ACH-405	THERMODYNAMICS	3
ACH-406	DYNAMICS	3

ACH-407	INORGANIC GENERAL PRACTICAL	2
ACH-408	PHYSICAL GENERAL PRACTICAL	2
TOTAL		22
2ND SEMESTER		
ACH-411	METAL π - COMPLEXES AND CLUSTERS	3
ACH-412	BIO-INORGANIC CHEMISTRY	3
ACH-413	ORGANIC REACTION MECHANISM- I	3
ACH-414	ORGANIC REACTION MECHANISM- II	3
ACH-415	STATISTICAL THERMODYNAMICS & MO CALCULATION	3
ACH-416	SURFACE CHEMISTRY	3
ACH-417	ORGANIC GENERAL PRACTICAL	2
ACH-418	ANALYTICAL CHEMISTRY PRACTICAL	2
TOTAL		22
3RD SEMESTER		
ACH-501	INDUSTRIAL POLLUTION AND ITS MANAGEMENT	3
ACH-502	INSTRUMENTAL METHODS OF ANALYSIS	3
ACH-503	INDUSTRIAL POLICY AND ENTERPRENEURSHIP	2
ACH-504	PROJECT	16
TOTAL		24
4TH SEMESTER		
ACH-511	COMPUTER APPLICATION IN CHEMISTRY	2
ACH-512	ENERGY MATERIAL BALANCE AND POLYMER CHEMISTRY	2
ACH-513	INDUSTRIAL PROCESSES	2
ACH-514	MEDICINAL CHEMISTRY	3
ACH-515	SURFACTANTS AND DETERGENTS	3
ACH-516	PRACTICAL ON COMPUTER IN CHEMISTRY	3
ACH-517	INDUSTRIAL PRACTICAL	3
ACH-518	REVIEW	2
ACH-519	SEMINAR	2
TOTAL		22

7. COURSE FACULTY : Core faculty of the School of Chemistry and other Guest Faculty.

Prof. (Mrs.) P.K.Misra, M.Sc.,M.Phil, Ph.D., D.Sc	Professor
Prof. P.K.Behera, M.Sc., M.Phil , Ph.D.	Professor & Head
Dr. A.K.Behera, M.Sc.,M.Phil, Ph.D.	Reader
Dr. A.Mohapatra, M.Sc., M.Phil, Ph.D.	Reader
Dr. A. Mishra, M.Sc., Ph.D.	Reader
Dr. S.N. Sahu, M.Sc., M.Tech., Ph.D.	Lecturer
Dr. B.N. Patra, M.Sc., M.Phil., Ph.D.	Lecturer (on lien)
Dr. N.K. Behera, M.Sc., Ph.D.	Lecturer
Dr. R.N. Mahaling, M.Sc., M.Tech., Ph.D.	Lecturer
Ms. L. Mirdha, M.Sc.	Lecturer
Dr. H. Chakraborty, M.Sc., Ph.D.	UGC Asst. Professor
Prof. B.K. Mishra, M.Sc., Ph.D., D.Sc.	Retd. Professor (UGC-BSR Faculty Fellow)

8. M.TECH. IN FOOD SCIENCE & TECHNOLOGY
IN THE CENTRE FOR FOOD SCIENCE & TECHNOLOGY

(IN COLLABORATION WITH SCHOOL OF CHEMISTRY AND SCHOOL OF LIFE SCIENCES)

Name of the Course Coordinator: Prof. S.P. Mishra Mob. No.9437088687

1. MINIMUM ELIGIBILITY: A candidate with a minimum Master Degree in any Science Subject or B.E and B. Tech degree holder in related subjects of four years study after +2 Science, with a minimum of 45% marks are eligible.

2. SELECTION CRITERIA: Career-30 marks, Written test-70 marks, (Total-100 Marks) with the following distribution. (When the number of application is less than the sanctioned strength, merit list will be prepared on the basis of, career marks only.)

For General M.Sc students	First Division	Second	Third
H.S.C.E/ or equivalent	6.0	4.5	3.0
+2 ¹ Or equivalent	6.0	4.5	3.0
+3 Honours	9.0	7.0	5.0
Distinction	1.0	1.0	1.0
M.Sc	8.0	6.0	4.0
For Professional Degree Student	First class Honours	First Class	Second Class
B.E/B.Techafter+2	18	13	8

3. DURATION OF THE COURSE:2 YEARS

4. NUMBER OF SEATS: Annual intake of 20 (including 4 sponsored candidates) with reservation as per rule

5. COURSE FEE: Rs. 25,000/- per Semester for regular Students and Rs 35,000/- per Semester for Sponsored Students. This is in addition to the fee prescribed at clause 11 of the prospectus.

6. COURSE STRUCTURE:

COURSE	TITLE OF THE COURSE	CREDIT HOURS
FIRST SEMESTER		
FST-611	Food Chemistry and Analysis	04
FST-612	Food Microbiology	04
FST-613	Principles of Food processing & Post harvest	04
FST-614	Food Engineering-I (Upstream Processing of	04
FST-615	Practical Related to FST-611 & FST-612	02
FST-616	Practical Related to FST-613 & FST-614	02
	Total Credits	20

SECOND SEMESTER		
FST-621	Fermentation Technology & Food products	04
FST-622	Food Engineering-II (Downstream Processing	04
FST-623	Marketing of food products, Food safety & Food	04
FST-624	Elective Paper (Any One)	04
	Protein Technology of Dairy Products Technology of cereals, pulses and oilseeds Post harvest management of fruits and vegetables Bakery and Confectionary Technology Beverages and Snacks food Technology	
FST-625	Practical Related to FST-621	02
FST-626	Practical Related to FST-622	02
	Total Credits	20

COURSE NO.	TITLE OF THE COURSE	CREDIT HOURS
THIRD SEMESTER		
FST-711	Term Paper	06
FST-712	Industrial Tour Report	06
FST-713	Seminar	03
FST-714	Interim Project Report	05
	Total Credits	20
FOURTH SEMESTER		
FST-721	Project Report and Evaluation	15
FST-722	Project Presentation	03
FST-723	Comprehensive Viva-Voce	02
	Total Credits	20

- * From the beginning of the Third Semester, a student shall select a topic related to the COURSE and write a term paper on the selected topic which will be evaluated at the end of the Third Semester.
- * At the end of Second semester each student shall visit one Industrial Establishment or Scientific Institution or any other course-related organization and submit a report on the activities for evaluation during Third Semester.
- * From the beginning of the Third Semester, a student shall work on a Dissertation under the supervision of a suitable Guide from the P.G. Departments or outside including scientist and technocrats from Industries and Corporate sector with the approval of the Academic Committee. The dissertation will be evaluated both during Third Semester (Interim) and Fourth Semester (Final).

SPECIALISATION OFFERED:

- Protein Technology
- Technology of Dairy Products
- Technology of cereals, pulses and oilseeds
- Post harvest management of fruits and vegetables
- Bakery and Confectionary Technology
- Beverages and Snacks food Technology

7. COURSE FACULTY:

(A) Core Faculty

1. Er. A. Priyadarshini
2. Er. S. Parida
3. Ms. S.P. Jena

(B) Guest Faculty

(a) School of Life Sciences

1. Dr. A.K. Patel
2. Prof. S.P. Mishra
3. Dr.(Mrs.) S. Sahoo

(b) School of Chemistry

1. Prof. B.K. Mishra(Emeritus)
2. Prof.(Mrs.) P. K. Misra
3. Dr. S.N. Sahu

(c) Department of Environmental Science

1. Prof. N. Behera (Emeritus)

Specialization

Food Sc. & Tech.
Food Chemistry
Microbiology

Specialisation

Microbiology
Microbiology
Soil Ecology

Organic Chemistry
Surface Chemistry
Organic Chemistry

Specialization

Microbiology

* Guest Faculty/ Resource Persons from other Departments/ University/ Institutes will be invited from time to time to cover the courses as per the requirement

8. INFRASTRUCTURE AVAILABLE: The **Center for Food Science and Technology** has been established by the University to offer courses on Food Science and Technology and to carry out research in areas of Food Science, Food Technology, Food Processing and Nutrition.

Major Equipments Available: The laboratories are well equipped with sophisticated equipments like Uv Visible spectrophotometer, Millipore water purification system, laminar air flow, Packaging machine, Vacuum rotary evaporator, Hot air oven, Bacteriological Incubator, Freeze Drier, Vacuum concentrator, Flame photometer, Colour flex, Cooling flex, Cooling centrifuge, Orbital shaking Incubator, TLC assembly, Electrophoresis, Deep freeze, Autoclave, Projection microscope, Texture analyzer, Chromatography, Canning unit, Emulsifying machine, Humidity convection oven, Refractometer, Package testing machine etc.

9. SPECIAL FEATURE OF THE COURSE: The new M.Tech. Programme in Food Science & Technology is interdisciplinary in nature. Food Science & Technology is a discipline concerned with all the technical aspects of food, beginning with harvesting / slaughtering, and ending with its packaging and marketing. It incorporates concepts from many different fields including microbiology, chemical engineering, biochemistry, nutrition, marketing, and others. It is an exciting area that applies a blend of basic sciences such as biology, chemistry, and physics with microbiology, biochemistry, mathematics, and engineering to improve the taste, nutrition, and value of the world's food supply. Food scientists extend this knowledge to the development of new food products, packaging, processes, and equipments. Examples of the activities of food scientists include the development of new food products, design of processes to produce these foods, choice of packaging materials, shelf-life studies, and sensory evaluation of the product with trained expert panels or potential consumers, as well as microbiological and chemical testing. M.Tech in Food Science & Technology can successfully prepare students to compete in this market. They will learn innovative technology that has been successful in placing nearly 100 percent of students in careers in product development, research, sales and marketing, quality assurance, production management, analytical and technical services, and regulatory food inspection as well as into higher education or professional programs.

10. CAREER PROSPECT: Food Processing Industry is a very fast emerging industry with good job prospects in India and abroad. Processed and preserved foodstuffs have been instrumental in bringing about a change in the food habits of a large urban populace. From eating merely for subsistence,

people now prefer to supplement their diet with 'value-added food'. Increase in consumption of processed foods is noticeable across various sections of the population and the trend of 'eating out' has grown manifold. In tune with these trends, the market for processed food is growing significantly. The food industry is the fifth largest industry in the country. Currently, it generates employment for about 20 lakhs people and will generate new jobs to the extent of 2.5 lakhs every year. It is estimated that the ratio of various types of jobs available in today's scenario in the country are: i). Factory production: 60%; ii) Research & Development (R&D): 15%; iii). Government laboratories: 3%; iv) Teaching: 2%; v). Other jobs: 20%. The stepping-in of multi-national companies (MNCs) has further increased job prospects and lucrative salary packages in this industry. There is a plethora of opportunities for Food technologists and Food Scientists, mainly in institutions like processing industries, hotels, food industries, quality control, hospitals, packaging industries, distilleries, bakery industries, soft drink factories, product design, pharmaceutical industry, biochemical engineering, spice, cereal and rice mills etc. Some of the exciting opportunities available as a career in Food Science include; new product development and product improvement; food packaging; technical service and sales; food safety; and regulatory food inspection and quality control. Self-employment through establishing startup projects is an important area for the post graduates of food technology. There are several government schemes for establishing small and medium enterprises. Even the Government of India is giving some subsidy and providing loans through nationalized banks to encourage entrepreneurship programmes, which work out to be an easy route to set-up their own business.

11. TRAINING AND PLACEMENT: Till now centre has recommended students for hands on training in both on-campus and off-campus institutions. Twentyseven students have already completed their M.Tech. Research Projects from reputed institutions like IIT, Delhi, CFTRI, Mysore, IICPT, Tanjur, CRRRI, Cuttack and Biotechnological Park Twenty students got placed after their degree which accounts for 74% of the students passed from the centre. The Centre is expecting to excel in training and placement in future.

9. M.Sc. IN FOOD SCIENCE IN THE CENTRE FOR FOOD SCIENCE & TECHNOLOGY

Name of the Course Coordinator: Dr. S.P. Mishra Mob. No.9437088687

1. MINIMUM ELIGIBILITY: Any Science Graduate or any Technical/ Professional Graduate (MBBS, BE, B, Tech, BSc Ag, B.Pharma, B.Sc Home Science, and other related subjects of four years study after +2 Science)of Sambalpur University or of any other University recognized by Sambalpur University as equivalent thereto with a minimum of 45% marks is eligible. Graduates with Home Science Honours/ Pass along with P.G Diploma, Diploma, or Certificate Course in any of the subjects like Food & Nutrition/ Nutrition & Health Education/ Nutrition & Dietetics/ Hospital & Health Management and other related subjects with a minimum of 45% marks at Graduation level are also eligible for admission to M.Sc in Food Science.

2. SELECTION CRITERIA: Career-30 marks, written test-70 marks (Total-100 Marks). When the number of applications is less than the sanctioned strength, merit list will be prepared on the basis of career marks only.

For students who have passed Technical/professional Graduates

Degree	First Division	Second Division	Third Division/Pass
High School	6	4.5	3.0
+2	9	7	5
B.E./B.Tech./B.Sc. Home Sc./ B.Pharm (4 years study after +2)			
First Class Hons or equivalent grade - 75% marks or above			15
First Class or equivalent grade - above 60% marks and below 75%			13
Second Class or equivalent grade - above 50% marks and below 60%			10
Pass or equivalent grade with below 50% marks			07

3. DURATION OF THE COURSE: 2 Years

4. NUMBER OF SEATS: 20 with reservation as per rule.

5. COURSE FEE: Rs. 15,000/- per Semester per Student. This is in addition to the fee prescribed at clause 11 of the prospectus.

6. COURSE STRUCTURE: **Total Course Credits = 80**

Course No.	Title of the Course	Credit Hours
FIRST SEMESTER		
FS-411	Food & Food Products	04
FS-412	Food Microbiology	04
FS-413	Food Chemistry	04
FS-414	Basic concept of Nutrition	04
FS-415	Practical related to 411&412	02
FS-416	Practical related to 413&414	02
	Total Credits	20

SECOND SEMESTER		
FS-421	Food ingredients, additives & nutraceuticals	04
FS-422	Techniques in Food Analysis	04
FS-423	Food safety & Quality control	04
FS-424	Food processing & Preservation	04
FS-425	Practical related to 421&422	02
FS-426	Practical related to 423&424	02
Total Credits		20

THIRD SEMESTER		
FS-511	Food Packaging & post harvest Technology	04
FS-512	Statistical Methods in Food Science	04
FS-513	Food Biotechnology	04
FS-514	Elective paper (ANY ONE)	04
(a)	Beverages & Snacks Technology	
(b)	Diary Technology	
(c)	Food Engineering	
FS 515	Practical related to all theory papers	02
FS 516	Term Paper/ Review paper	02
Total Credits		20
FOURTH SEMESTER		
FS-521	Mid term presentation (Dissertation)	02
FS-522	Final Dissertation & Viva Voce	12+02
FS-523	Seminar	02
FS-524	Industrial tour report	02
Total Credits		20

7. COURSE FACULTY:

(A) Core Faculty

1. Er. A. Priyadarshini
2. Er. S. Parida
3. Ms. S.P. Jena

Specialization

- Food Science & Technology
- Food Chemistry
- Microbiology

(B) Guest Faculty

School of Life Sciences

1. Prof. S.P. Mishra
2. Dr. A.K. Patel
3. Dr. (Mrs.) S. Sahoo

Specialization

- Microbiology
- Microbiology
- Soil Ecology

Department of Chemistry

1. Prof. B.K. Mishra (Emeritus)
2. Prof. (Mrs) P. K. Misra
3. Dr. S.N. Sahu

Specialization

- Organic Chemistry
- Surface Chemistry
- Organic Chemistry

Department of Environmental Sciences

1. Prof. N. Behera (Emeritus)

Specialization

- Microbiology

- 8. INFRASTRUCTURE AVAILABLE:** The **Center for Food Science and Technology** has been established by the University to offer courses on Food Science and Technology and Food Science to carry out research in areas of Food Science, Food Technology and Food Processing. The centre has four laboratories (Food Chemistry lab, Food Analysis lab, Food Engineering lab and Canning Unit lab) funded by MOFPI, Govt. of India, will cater to the requirements of the students of this programme.

- 9. SPECIAL FEATURE OF THE COURSE:** M. Sc. in Food Science programme focuses on the Food Science, an area of increasing importance to Consumers, Government and the Food Industry. This M.Sc programme is interdisciplinary in nature and is a challenging and practical course which demands a good grasp of knowledge in science. The aim of the course is to provide knowledge and understanding of Fundamentals of food and food products, basic concepts of Nutrition, Chemistry of Food Components & Techniques in Food Analysis, Food Microbiology, Food Safety, Quality Control & Packaging, Food Biotechnology & Statistical Methods in Food Science etc.

This programme will enable to develop:

- An understanding of the subjects at the interface between human nutrition and food science.
- An understanding of food constituents in the context of their manufacture and storage, particularly from the standpoints of safety and nutritional attributes.
- One's capacity to undertake research in food science.
- Skills in critical appraisal of data, presentational and interpersonal skills.

- 10. CAREER PROSPECT:** This M.Sc. programme is for those wishing to develop a career in food-related research or the food industry. It is designed to meet the increasing demand for nutrition scientists experienced in human nutritional trials and in the evaluation of physiological, biochemical and molecular basis for effects of diet on human health. As a food nutritionist, one is endowed with the skills and knowledge to improve another's quality of life. Right from providing assistance in planning meals in times of old age, sickness or extreme stress, to advising them with regards to healthy eating-selection. Clientele for food nutritionists are perpetually on the rise as the era of junk food has irrevocably taken on a toll on many lives. Demand for food nutritionists is prevalent in hospitals that require their services for fixing nutritional regimens. Even athletes in physical training camps or mountaineers rely heavily on the instructions of a well qualified nutritionist. Moreover, even restaurants employ candidates with degrees in Food & Nutrition, Food Technology, Nutrition or Food Services Management. Thus nowadays, Food Science & Nutrition is one of the vital and growing fields where one can get endless opportunities if looking to build up a career. Dieticians /Nutritionists/ Food Technologists are required everywhere like hospitals, nursing homes, canteens, health clubs, catering unit of star hotels, government's health departments, food manufacturing companies and even in recreation clubs. Other noble options are to teach the subject in colleges or universities and to work as specialists to practice privately. Moreover, job offers will also come from mass media which prioritize the circulation of important information on healthy life. The main area of a food scientist cum nutritionists' work is Food Service Industry, Institutional Catering, Research and Development and Social Welfare, Health Care field etc. Food service consists of Restaurants and Catering service where nutritionists need to plan the menu and monitor food preparation. Same as Food service, Institutional Catering even requires dietetics professionals to plan, administer and arrange nutritious balanced diets for cafeterias of schools, colleges, offices, factories etc. Apart from that, their work might include evaluation and acquisition of food materials and equipment, checking and receiving inventories of supplies etc. Professionals carrying on such work are recognized as Administrative or Management Nutritionists. Nutritionists involved in Social Welfare activities, often called as Community dietitian or Public Health Nutritionists are mostly attached to government-aided public health divisions to improve the mass food habits and public health. Our post graduates can therefore expect to find themselves in demand from employers and often have to choose from several excellent job offers.

**10. M. TECH. IN GEOSPATIAL TECHNOLOGY
IN THE P.G. DEPARTMENT OF EARTH SCIENCES**

Name of the Course Coordinator : Dr. J.K. Tripathy Mob. No. 9437444750

1. Minimum eligibility: Master degree in any Science subject or Science graduate with P. G. Dip. in Remote Sensing & GIS or B.E / B. Tech degree in any branch with a minimum of 45% marks.

2. Selection criteria: Career 30%, Written Test 70%. The following is the distribution of career marks:

For general M. Sc. Student	First Division	Second Division	Third Division/ Pass
H.S.C. E.	5.0	4.0	3.0
+2	5.0	4.0	3.0
+3 (Hons)	6.0	4.0	2
Distinction	1.0	1.0	1.0
P. G. Diploma in RS & GIS	13.0	10.0	7.0
M. Sc.	13.0	10.0	7.0
For professional degree student	First class Hons	First class	Second class
B. Tech/ B. E. degree holder (after +2)	20.0	15.0	10.0

(When the number of application is less than the sanctioned strength, merit list will be prepared on the basis of career mark only)

3. Duration of the Course: 2 years

4. No. of seats : 16

5. Fee Structure: Rs.20,000/- per Semester for regular students and Rs. 25,000/- per Semester for sponsored students in addition to the fee prescribed at Clause 11 of the admission prospectus.

6. Course Structure:

First year- 1st Semester		
Course No.	Course Name	Credit hours
GT. 411	Basic Principles of Geospatial Technology, Survey, Thematic Mapping and Cartography	4CH
GT. 412	Earth features and phenomena, Earth Resources and Resource Management	4CH
GT. 413	Principles of Aerial Remote Sensing and Photogrammetry	4CH
GT. 414	Satellite, Microwave and thermal infrared Remote Sensing	4CH
GT. 415	Practical on Survey and Cartography, Report on Lab./ Field Visits	2CH
GT. 416	Practical on Aerial Photographs, satellite images, Term paper	2CH

First year- 2nd Semester		
Course No.	Subjects	Credit hours
GT.421	Statistical data analysis and Spatial statistics	4CH
GT.422	Computer Programming and Database Management	4CH
GT.423	Digital Image Processing, Correction and Interpretation	4CH
GT.424	Digital Elevation Modelling and Global Positioning System	4CH
GT.425	Practical on Statistical data analysis, Computer Programming, and Digital image processing	2CH
GT. 426	Report on Field Visits / Seminar	2CH
Second year- 3rd Semester		
Course No.	Subjects	Credit hours
GT.511	Elective (any one of the following)	4 CH
	a. Application of Geographic Information Systems in Geology, Geotechnical Engineering and Engineering Geology	
	b. Application of Geographic Information Systems in Geography, Human settlement, Land use studies and Archeology	
	c. Application of Geographic Information Systems in Environmental studies and Natural Resource Management	
	d. Application of Geographic Information Systems in surface and subsurface water resources, Oceanic studies, Fishery and Meteorology	
	e. Application of Geographic Information Systems in Ecology, Agriculture and Forestry	
GT.512	(Training in a reputed institute on Digital Image Processing,/GIS or GPS) Report on field Training	12 CH
GT.513	Seminar (at least 4)	4 CH
Second year- 4th Semester		
GT.521	Dissertation on any topic on Remote Sensing, Geographical Information System(GIS)/ Global Positioning System (GPS) under the guidance of a faculty of the Dept./ Scientist of a RS- GIS Institute/ Company (*12 CH Dissertation, 4 CH Viva Voce on Dissertation, 4 CH Seminar on Dissertation)	20 CH*

7. Course Faculty:

Core Faculty	
1. Prof. Ashutosh Naik (Retd.) (Dept. of Earth Sciences)	2. Mr. Duryadhan Behera (Dept. of Earth Sciences)
3. Prof. P. C. Mishra (Retd.) (Dept. of Environmental Sciences)	4. Dr. Sanjaya Kumar Pattanayak (Dept. of Environmental Sciences)
5. Prof. Niranjan Behera (Retd.) (School of Life Sciences)	6. Dr. C. Tripathy (Retd.) (Dept. of Statistics)
7. Prof. Biswajit Satapathy (Dept. of Business Administration)	8. Dr. D. K. Mahalik (Dept. of Business Administration)
9. Dr. C. S. Panda (Dept. of Computer Science)	

Visiting Faculty	
1. Prof. Gopal Krushna Panda (Dept. of Geography, Utkal University)	2. Prof. N. Patel (Birla Institute of Technology, Mesra, Ranchi)
3. Prof. P. K. Verma (Dept. of Geology, Vikram Uni., Ujjain)	4. Dr. S. B. Chaudhury (National Remote Sensing Centre, Hyderabad)
5. Dr. Kalicharan Sahoo (Dept. of Marine Sciences, Berhampur University)	6. Dr. Jadish Tripathy (Dept. of Geology, Ravenshaw University)
7. S. N. Mohapatra (Dept. of Geology, Jiwaji University, Gwalior)	8. A. S. Jasrotia (Dept. of Geology, Jammu University, Jammu)
9. Dr. Dipti Ranjan Satapathy IMMT, Bhubaneswar	10. Dr. Rabi Samal Scientist, CDA, Bhubaneswar
11. Dr. B. Mishra, GIS Specialist, OSDMA, Bhubaneswar	12. Dr. Jayanta Kumar Jena Reliance
13. Mr. Ranjan Kumar Mallik, GIS Specialist, Geospatial Solutions	14. Mr. Rajat Satapathy GIS Specialist

8. Other special features

a. About the M.Tech. Programme

Geospatial Technology is the branch of technology that deals with the “georeferenced” ‘spatial data”. Georeferenced means “relating things to the relative position on the earth’s surface”. Thus, Geospatial Technology refers to the technology used for visualization, measurement, and analysis of features or phenomena that occur on the earth.

Geospatial Technology includes three different technologies that are all related to mapping features on the surface of the earth. These three technology systems are RS (Remote Sensing) GIS (Geographical Information Systems) and GPS (global positioning systems).

GT offers cost-effective solutions that tailor to the specific needs of the individual client. The system modules are designed in such a flexible way, that clients with different operation scales find it easy to choose from options of System implementation, tracking devices and GIS data, that can serve their needs as well as fit their budgets.

The M. Tech. in Geospatial Technology is first of its kind in the state. It is a four semester course approved by Sambalpur University. It has theoretical, practical and research project / training component. It is a regular course but keeping the requirements of employed persons pursuing the course, the teaching shall be imparted in the after noon/ evening hours on all working days and from 10.00 AM to 5.00 PM on Sundays and other holidays. Advance topics in the fields of Remote Sensing, Cartography, Digital Image processing, GIS, GPS and DEM have been included to meet the requirements of employers. The admitted students will be sent to leading GIS companies for training/ project work in the second year.

b. About the host Department:

The Dept. of Earth Sciences of Sambalpur University was established with the approval of University Grants Commission in 1984. It is the only Department in the state to offer M. Sc. Applied

Geology and M. Phil. Applied Geology in the state. The Dept. also offers a P. G. Diploma course in Remote Sensing and GIS in Distance Education mode.

Remote Sensing, Digital Image processing and GIS has been taught as an integral part of M. Sc. and M. Phil. Applied Geology courses since the inception of these programmes. Taking into consideration the importance of the subject and job opportunity in the coming years the Dept. decided to offer the Geospatial Technology course for the first time in Odisha. The Dept. has all the basic laboratory facilities needed for the subject. However, there is lot of scope for further upgradation of the facilities in the RS & GIS Laboratories and shall be done as per the requirement of the students.

The Department has organized fourteen National level seminars/ conferences/ workshops and refresher courses since its inception. Those related to RS & GIS are-

1. Workshop on Application of Remote sensing Data (22nd March, 1993)
2. National level workshop on Geospatial Technology for Earth Resources and Environmental Management (17th-18th, February, 2007).
3. Workshop on Remote Sensing Application in Mineral Exploration (13th-14th December, 2010)
4. Refresher course on Remote Sensing and GIS Application (24th January, 2011 - 13th February, 2011)

**11. MBA IN RURAL MANAGEMENT
(P.G. Department of Business Administration)**

Name of the Course Coordinator: Mr. S. Kerketta Mobile- 9437201755

1. ELIGIBILITY CRITERIA: Any graduate with 45% of marks in aggregate. Minimum qualifying marks of 45% shall not be insisted for SC & ST candidates.

2. SELECTION CRITERIA: Career: 30%, Written Test: 70%

H.S.C.	:	1 st Divn.-6	2 nd Divn.-4.5	3 rd Divn.-3
+2	:	1 st Divn.-9	2 nd Divn.-7	3 rd Divn.-5

Graduation / (+3) : (Marks Secured in percentage)

“Total Marks Secured / Maximum Marks X 100”

75% or above	= 15
60% or above but less than 75%	= 12
45% or above but less than 60%	= 10
All other eligible candidates	= 08

3. DURATION OF THE COURSE: Two Year (Four Semester)

4. NUMBER OF SEATS: 40

5. DISTRIBUTION OF SEATS:

Open -30, Industry Sponsored-05, Foreign Participants-05

6. RESERVATIONS: As per University rules, from out of the 30 open seats.

7. FEE STRUCTURE:

Category	Course Fee (Per Semester)	Seminar Fee (Per Year)	Field Work (Per Semester)
Open	Rs.12,000/-	Rs.1000/-	Rs.5000/-
Industry Sponsored	Rs.25,000/-	Rs.1000/-	Rs.5000/-
Foreign Participants	1000 USD	100 USD	200 USD

Beside the course fee a candidate admitted to the programme shall pay other fees as prescribed by the University

8. COURSE STRUCTURE:

Semester-I	Title of the Paper	Credit
R-101	Rural Economy and Development	3
R-102	Rural Livelihood	3
R-103	Rural Society and Societal Analysis	3
R-104	Organizational Behaviour	3
R-105	Communication and Self-Development	3
R-106	Financial Accounting	3
R-107	Social Research Methodology	3
R-108	Field Work Project and Viva-I	4

Semester-II		
R-201	Development Theory and Practices	3
R-202	Women and Child Development	3
R-203	Public Health and Sanitation	3
R-204	Micro Economics for Rural Managers	3
R-205	Quantitative and Statistical Methods	3
R-206	Human Resource Management	3
R-207	Financial Management	3
R-208	Summer Training Report and Viva	4
Semester-III		
R-301	Micro Finance	3
R-302	Social Entrepreneurship	3
R-303	Social Justice and Human Rights	3
R-304	Rural Governance	3
R-305	Project Planning and Management	3
R-306	Management Natural Resources	3
R-307	Disaster Management	3
R-308	Field Work Project and Viva-II	4
Semester-IV		
R-401	Public Policy Analysis	3
R-402	Management of NGOs	3
R-403	Management of Agri Business	3
R-304	Rural Marketing	3
R-405	Strategic Management	3
R-406	Management Information Systems	3
R-407	Legal Environment of Business	3
R-408	Dissertation and Viva	4

9. CORE FACULTY:

Prof. A.K. Das Mohapatra (Dept. of Business Administration, Sambalpur University)

Prof. P. Gahan (Dept. of Business Administration, Sambalpur University)

Prof. B. Satpathy (Dept of Business Administration, Sambalpur University)

Dr. P.C. Tripathy (Dept of Business Administration, Sambalpur University)

Dr. T.K. Das (Dept of Business Administration, Sambalpur University)

Dr. D.K. Mahalik (Dept of Business Administration, Sambalpur University)

Mr. S. Kerketta (Dept of Business Administration, Sambalpur University)

Dr.(Mrs.) M. Pattnaik (Dept of Business Administration, Sambalpur University)

Ms. A. Samal (Dept of Business Administration, Sambalpur University)

Dr. S.K. Sahoo (Dept of Business Administration, Sambalpur University)

Dr. R.K. Mishra (Dept of Business Administration, Sambalpur University)

Guest Faculty

Prof. P.K. Tripathy, Retd. (Dept. of Economics, Sambalpur University)

Prof. S.S. Rath (Dept. of Economics, Sambalpur University)

Dr. S. Das (Dept. of Economics, Sambalpur University)

Mr. B. Mishra, Retd. (Dept. of Economics, Sambalpur University)

Dr. R.K. Kumbhar (Dept. of Economics, Sambalpur University)

Prof. S. Nayak (Dept. of Sociology, Sambalpur University)

Dr. Ratnawali (Dept of Anthropology, Sambalpur University)

Prof. S.K. Sahu (Dept. of Environmental Science, Sambalpur University)

Dr. S.K. Pattanayak (Dept. of Environmental Science, Sambalpur University)

Dr. M.R. Mahananda (Dept. of Environmental Science, Sambalpur University)

Mr. P. Dansana (Dept of Law, Sambalpur University)

Dr. M.K. Sahu (Dept of Law, Sambalpur University)

10. OTHER SPECIAL FEATURES OF THE COURSE AND HOST DEPARTMENT:

The Course has been designed to develop and nurture talents who can steer the cause of social development.

SAY NO TO SEXUAL HARASSMENT

**12. POST GRADUATE COURSE IN AGRI BUSINESS MANAGEMENT
(P.G. DEPARTMENT OF BUSINESS ADMINISTRATION)**

Name of the Course Coordinator: Dr. P.C. Tripathy Mobile No.9438060667

1. ELIGIBILITY CRITERIA: Any Graduate with 45% marks in aggregate. Minimum qualifying marks of 45% shall not be insisted for SC and ST candidates.

2. SELECTION CRITERIA: Career 30%, Written Test 70%

H.S.C.	:	1st Divn.-6	2nd Divn.-4.5	3rd Divn.-3
+2	:	1st Divn.-9	2nd Divn.-7	3rd Divn.-5
Graduation / (+3)	:	(Marks Secured in percentage)		

“Total Marks Secured / Maximum Marks X 100”

75% or above	= 15
60% or above but less than 75%	= 12
45% or above but less than 60%	= 10
All other eligible candidates	= 08

3. DURATION OF THE COURSE: Two Years (Four Semesters)

4. NUMBER OF SEATS: 32

5. RESERVATION : As per the University rules

6. FEE STRUCTURE: Course Fee (Per Semester) Rs.25,000/-, Seminar Fee (Per Year) Rs.1,000/-, Alumni Fee (Per Course) Rs.1,000/-
(to be collected at the time of admission)

7. COURSE STRUCTURE:

	<u>Title of the Paper</u>	Credit	Marks
Semester-I			
ABM-101	Management Practices and Organisational Behaviour	3	100
ABM-102	Managerial Economics	3	100
ABM-103	Quantitative Methods and Operations Research	3	100
ABM-104	Marketing Management	3	100
ABM-105	Business Communication	3	100
ABM-106	Indian Ethos and Values	3	100
ABM-107	Accounting for Managers	3	100
ABM-108	Management Information System	3	100
Semester-II			
ABM-201	Business Law	3	100
ABM-202	Rural Marketing	3	100
ABM-203	Human Resource Management	3	100
ABM-204	Financial Management	3	100
ABM-205	Business Environment	3	100
ABM-206	Production and Operations Management	3	100
ABM-207	Research Methodology	3	100
ABM-208	Entrepreneurship Development	3	100

Semester-III

ABM-301	Agri Economics	3	100
ABM-302	Agri Business and Co-operative Management	3	100
ABM-303	Agri Import and Export Management	3	100
ABM-304	Food Processing and Farm Machinery Management	3	100
ABM-305	Agri Logistics and Supply Chain Management	3	100
ABM-306	Agriculture and Food Retailing	3	100
ABM-307	Micro Finance and Social Entrepreneurship	3	100
ABM-308	Summer Training Project Report and Viva-Voce	3	100

Semester-IV

ABM-401	Business Policy and Strategic Management	3	100
ABM-402	Total Quality Management in Agri Business	3	100
ABM-403	E-Commerce and Agri Business	3	100
ABM-404	Financing of Agri Business	3	100
ABM-405	Derivatives with Commodity Futures	3	100
ABM-406	Agri Technology Management	3	100
ABM-407	Dissertation and Viva-Voce	6	200
	Total =		3200

**13. 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:

Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): $\frac{\text{Marks secured in Honours Subject}}{\text{Maximum Marks in Honours Subject}} \times 15$

+3(Pass) : $\frac{\text{Aggregate Marks secured}}{\text{Maximum Marks}} \times 12$

(b) Category-II (Other than Science Graduate)

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

Graduation (Marks secured in percentage)

"Total Marks Secured/Maximum Marks X 100"

75% and above = 15

60% and above but less than 75% = 12

45% and above but less than 60% = 10

All other eligible candidates = 08

3. DURATION OF THE COURSE: 2 Years

4. NUMBER OF SEATS: 16 (Sixteen)

5. FEE STRUCTURE:

Course Fee: Rs. 25,000/- and Laboratory Development Fee: Rs. 5000/-per semester (Besides the course fee, a candidate admitted to the programme shall pay other fees as prescribed in the prospectus at Clause. 11).

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

7. COURSE FACULTY:

a. Core Faculty:

Sl. No.	Name of The	Area of Specialization
1.	Prof. S. P. Mishra	Forest Ecology, Soil Microbiology and Plant Tissue Culture
2.	Dr. (Mrs) B. Nayak	Algal Biotechnology, Biofertiliser, Biochemistry, Cyano bacterial Technology
3.	Dr. E. Kariali	Plant Stress Physiology, Molecular Biology and Agricultural Biotechnology
4.	Dr. R. K. Behera	Biochemistry, Immunology and Plant Biotechnology
5	Dr. (Mrs.) S. Sahoo	Soil Biotechnology and Microbial Ecology
6	Dr. J. Ratha	Animal Cell Culture & Immunotechnology
7.	Dr. A Patnaik	Environmental Biology & Vermitechnology
8.	Dr. N.J. Ekka	Forest Ecology and Microbial Technology
9.	Dr. S. N. Pradhan	Biochemistry & Environmental Biology

- b. **Guest Faculty:** Guest Faculties from other Universities, Research Institutes across India having expertise in different fields of Microbiology are invited to impart quality teaching through innovative methodology.

8. OTHER SPECIAL FEATURES OF THE COURSE AND THE HOST DEPARTMENT:

(a) Special Feature of the Course:

M.Sc. Microbiology is a two year full time program under self financing mode leading to award of Masters of Sciences (M.Sc.) degree in Microbiology. The program includes four semesters of course work including a project work during which students are provided training to conduct research. The students are offered basic and advanced level courses in Microbial diversity, Microbial physiology, Virology, Immunology, Environmental microbiology, Microbial Infection and Diseases, Molecular Biology, Microbial genetics, Biostatistics, Advanced Instrumentation Techniques, Microbial Genomics and Proteomics, Industrial and food microbiology etc. Moreover, the course content of NET examination has been given due importance. As a part of their curriculum, students deliver seminars on various scientific topics. Second year students work on various projects under the supervision of different faculties and submit a project dissertation at the end of their training.

The two year post graduate programme in M.Sc. Microbiology has a broader scope enabling the candidates to fetch wide variety of career opportunities available in the field of Microbiology in India and abroad. The School of Life Sciences, one of the premier autonomous institutes of the country imparting quality education in advanced biology, is hosting the course by utilizing its human resources and infrastructural facilities. Applications of Microbiology are extensively seen in food processing, agricultural and pharmaceutical industries. Ample job opportunities are available in the field of Research and Development, Government and Private Hospitals, Research Organisations, Food, Beverage, Pharmaceutical and Chemical Industries etc. Besides, candidates after completion of M. Sc degree in Microbiology can find a bright career in the research field as a Scientist or Microbiologist.

(b) About the host Department:

Established in the year 1969 School of Life Sciences of Sambalpur University served as a interdisciplinary school where physical sciences has been conglomerated with biology at the level of higher learning. We believe life sciences as a multi-disciplinary branch of science and want to provide our students with the basics to cope up with the demands of modern research and teaching. Emphasis is given on holistic approach where students are exposed to advanced courses such as Microbiology, Biochemistry, Molecular Biology, Bioinstrumentation, Immunology, Biostatistics, Biophysics, Ecology, Physiology, Bioinformatics, Computer applications and many advanced branches of plant and animal sciences.

The Department also has a rich culture of research and students are actively engaged in different in-house projects as well as they participate in summer training courses in research institutes and industries. Further students are encouraged to present research papers in different national and international seminars and workshops. The department also organizes seminars by renowned scientist from different institute in India to provide opportunity to students to listen to research work as well interact with them. The faculty members are actively engaged in research with support from different national funding agencies and publishing their research papers in journals of international repute. The School is also known for meritorious students who excel in qualifying national level competitive exams like NET, GATE, ICMR, ICAR, DBT etc in large numbers.

(c) Infrastructure facilities available in the department:

The department has state of the art laboratories for (i) Microbiology and Immunology (ii) Molecular Biology and Genetic Engineering (iii) Plant Biotechnology and Genetic Transformation (iv) Biochemistry (v) Cytogenetics (vi) Ecology and Environmental biotechnology and (vii) Central Bioinstrumentation facilities.

(d) Major Equipments available in the department:

All the labs are well equipped with advanced instruments and facilities. In addition to the Central Instrumentation Facility, the Department is equipped with sophisticated instruments viz. PCR Machine, Gradient Thermal cycler, Gel Documentation System, UV-Vis spectrophotometer, ELISA reader, Blotting apparatus, Vertical and Submarine Electrophoresis apparatus, Lyophilizer, Ultracentrifuge, Millipore Water Purification Systems, Phase contrast Microscope, Fluorescence Microscope, High Performance Liquid Chromatography, Gas Chromatography and Atomic Absorption Spectrophotometer, Infrared gas analyzer, Photosynthetic Efficiency Analyser. Further, this facility will be enriched with Real Time PCR, CO₂ Incubator, Animal Tissue Culture Lab, NET house through DST-FIST Programme .

**14. M.Sc. IN MEDICAL PHYSICS
IN THE SCHOOL OF PHYSICS (AUTONOMOUS)**

Name of the Course Coordinator: Prof. D.P. Ojha Mob. No. 9437916232

1. ELIGIBILITY CRITERIA: The candidates should have passed +3 with Honours in Physics with any one or more of the following pass subjects- Chemistry, Mathematics, Statistics, Electronics and Computer Science **OR** Physics as pass subject with any one or more of the following subjects- Chemistry, Mathematics, Statistics, Electronics and Computer Science with 45% mark in aggregate. However, preference will be given to students having Mathematics as a pass or major elective.

2. SELECTION CRITERIA:

Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): Marks secured in Honours Subject X 15
Maximum Marks in Honours Subject

+3(Pass) : Aggregate Marks secured X 12
Maximum Marks

3. DURATION OF THE COURSE: 2 Years

4. NUMBER OF SEATS: 20 (Twenty)

5. FEE STRUCTURE: Rs. 30,000/- per Semester (Beside the course fee a candidate admitted to the programme shall pay other fees as prescribed by the University)

6. COURSE STRUCTURE:

SEMESTER – I

Sl. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MP8101	Electronic Circuits and Microprocessor	3	1	0	4
2	MP8102	Mathematical Physics and Bio Statistics	3	1	0	4
3	MP8103	Non Ionizing Radiation Physics in Medicine	3	1	0	4
4	MP8104	Radiological Physics	3	1	0	4
PRACTICALS						
5	MP8111	Electronics and Instrumentation Laboratory	0	0	6	3
6	MP8112	Engineering Graphics and Workshop Practice	1	1	2	3
TOTAL			13	5	8	22

SEMESTER – II

Sl. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MP8201	Anatomy and Physiology	3	0	0	3
2	MP8202	Numerical Methods and Programming in “C”	3	1	0	4
3	MP8203	Radiation Dosimetry and Treatment Planning	3	1	0	4
4	MP8204	Radiotherapy Equipments	3	0	0	3
5		Elective - I	3	0	0	3
PRACTICALS						
6	MP8211		0	0	6	3
TOTAL			15	2	6	20

SEMESTER – III

Sl. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MP8301	Biomedical Instrumentation	3	1	0	4
2	MP8302	Brachytherapy Physics	3	0	0	3
3	MP8303	Materials for Implant Applications	3	1	0	4
4		Elective -II	3	0	0	3
5		Elective - III	3	0	0	3
PRACTICALS						
6	MP8311	Diagnostic and Therapeutic Laboratory II	0	0	6	3
7	MP8312	Seminar	0	0	2	1
TOTAL			15	2	8	21

SEMESTER – IV

Sl. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1		Elective - IV	3	0	0	3
2		Elective - V	3	0	0	3
PRACTICALS						
3	MP8411	Project Work	0	0	24	12
TOTAL			6	0	24	18

TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE = 81

Sl. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	MP8001	Advanced Clinical Radiation Therapy Physics	3	0	0	3
2	MP8002	Biological Effects of Ionizing Radiation	3	0	0	3
3	MP8003	Biomedical Optical Spectroscopy	3	0	0	3
4	MP8004	Biosensors	3	0	0	3
5	MP8005	Industrial Radiography	3	0	0	3
6	MP8006	Medical Applications of Lasers	3	0	0	3
7	MP8007	Medical Imaging Techniques	3	0	0	3
8	MP8008	Monte Carlo Techniques in Dosimetry	3	0	0	3
9	MP8009	Nanotechnology for Biomedical Applications	3	0	0	3

10	MP8010	Nuclear Medicine	3	0	0	3
11	MP8011	Radiation Hazards Evaluation and Control	3	0	0	3
12	MP8012	Ultrasonics in Medicine	3	0	0	3

7. COURSE FACULTY:

- Prof. T.R. Routray, M.Sc.,M.Phil, Ph.D.
- Prof. D.P. Ojha, M.Sc., Ph.D., FRSC
- Prof. S.N. Nayak, M.Sc., Ph.D.
- Dr. Z. Naik, M.Sc., Ph.D.
- Dr. B. Behera, M.Sc., Ph.D.
- Sri S. Minz, M.Sc.

**15. M.A. IN SANSKRIT
DEPARTMENT OF SANSKRIT**

Name of the Course Coordinator: Dr. M.L. Sharma Mob. No. 9437088599

- 1. ELIGIBILITY CRITERIA:** (i) As per General eligibility criteria,
(ii) Honours in any Humanities or Social Sciences.

1. SELECTION CRITERIA:

Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): Marks secured in Honours Subject X 15
Maximum Marks in Honours Subject

+3(Pass) : Agreegate Marks secured X 12
Maximum Marks

2. DURATION OF THE COURSE: 2 Years

3. NUMBER OF SEATS: 20

8. FEE STRUCTURE: Rs. 20,000/- per Semester (Beside the course fee a candidate admitted to the programme shall pay other fees as prescribed by the University)

4. COURSE STRUCTURE:

SEMESTER - I

Paper No.	Title of the paper	Credit Hours	Marks		
			Univ. Exam	Internal Assessment	Total
SKT-411	Selected Vedic hymns- Rgveda	4CH	80	20	100
SKT-412	Selected Vedic hymns- Atharvaveda	4CH	80	20	100
SKT-413	Selected Upanisad	4CH	80	20	100
SKT-414	Nirukta and Pratiśākhyā	4CH	80	20	100
SKT-415	Vedic History and Thought	4CH	80	20	100

SEMESTER - II

Paper No.	Title of the paper	Credit Hours	Marks		
			Univ. Exam	Internal Assessment	Total
SKT-421	Shastra & Ancient Indian Lit.	4CH	80	20	100
SKT-422	History of Puranas and Upapuranas	4CH	80	20	100
SKT-423	Indian Philosophy	4CH	80	20	100
SKT-424	Grammer	4CH	80	20	100
SKT-425	Philology/Translation and Retranslation.	4CH	80	20	100

SEMESTER - III

Paper No.	Title of the paper	Credit Hours	Marks		
			Univ. Exam	Internal Assessment	Total
SKT-511	Indian Culture	4CH	80	20	100
SKT-512	Contribution of Odisha to Sanskrit Literature & Modern Sanskrit Literature.	4CH	80	20	100
SKT-513	Selected Kavyas	4CH	80	20	100
SKT-514	History of Classical Sanskrit Literature	4CH	80	20	100
SKT-515	Essay in Sanskrit	4CH	80	20	100

SEMESTER - IV

Paper No.	Title of the paper	Credit Hours	Marks		
			Univ. Exam	Internal Assessment	Total
SKT-521	Indian Poetics	4CH	80	20	100
SKT-522	Texts on Dramaturgy	4CH	80	20	100
SKT-523	Texts on Sanskrit Poetics	4CH	80	20	100
SKT-524	Texts on Sanskrit Poetics	4CH	80	20	100
SKT-515	Dissertation or Texts on Modern Sanskrit Literature. 1	4CH	80	20	100

***16. INTEGRATED B.Ed.- M.Ed.
SCHOOL OF EDUCATION**

1. **Name of the Course Coordinator:** Prof. K.C. Pradhan, Mob. No. 9937795055

2. **ELIGIBILITY CRITERIA:** (i) As per General eligibility criteria,
(ii) Honours in any Humanities/Social Sciences/Sciences

3. **SELECTION CRITERIA:**

Career: 30%, Written test: 70%

(a) Category-I (Science Graduate)

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

+3(Honours): $\frac{\text{Marks secured in Honours Subject}}{\text{Maximum Marks in Honours Subject}} \times 15$

+3(Pass) : $\frac{\text{Aggregate Marks secured}}{\text{Maximum Marks}} \times 12$

4. **DURATION OF THE COURSE:** 3 Years

5. **NUMBER OF SEATS:** 50

6. **FEE STRUCTURE:** Rs.25,000/- (per semester) This is in addition to fee prescribed at Clause 11 of the Prospectus.

7. **COURSE STRUCTURE:**

SEMESTER- I, SESSION 2017-2018

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 (2 Weeks)=(72 hours)	PC-1 Introduction to Philosophy of Education	4	30	70	100
Sociology-History- Political Economy of Education (2 Weeks)=(72 hours)	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
Content Cum Pedagogy(any1) 1.Odia 2.English 3.Hindi 4. Sanskrit (4 Weeks)=(144 hours)	CCP-1 Contents cum Pedagogy Elementary School Stage	4	30	70	100
	CCP-2 Contents cum Pedagogy Sec. & Higher Sec. Stage	4	30	70	100
(8 Weeks)=(288 hours)		TOTAL THEORY COURSE	16	120	280

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 (4 Weeks)=(144 hours)	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 (3 Weeks)=(108 hours)	PA-1 Hand on Experience for Curriculum Transaction	2	15	35	50
C.4 Attachment Activity (SA)		2	15	35	50
1.Community work (2 Weeks)=(72 hours)	AA-1 Working With Community	2	15	35	50
(9 Weeks)=(324 hours)	TOTAL PRACTICAL COURSE	08	60	140	200

(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(09 Weeks)=(324 hours)	TOTAL PRACTICAL	08	60	140	200
(17 Weeks)=(612 hours)	THEORY & PRACTICAL	24	180	420	600

SEMESTER- II, SESSION 2017-2018

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 (2 Weeks)=(72 hours)	PC-5 Introduction to Educational Psychology	4	30	70	100
Curriculum and Pedagogy Studies (2 Weeks)=(72 hours)	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 (2 Weeks)=(72 hours)	RTS-1 Introduction to Educational Research	4	30	70	100
Self - Development Skill & ICT (2 Weeks)=(72 hours)	RTS-3 Self Development Skill-Meditation & Yoga, Arts & Crafts and Theatre.	4	30	70	100
(8 Weeks)=(288 hours)	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 (3 Weeks)=(108 hours)	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 (4 Weeks)=(144 hours)	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 (4 Weeks)=(144 hours)	AA-2 Working in In-service& Pre –Service Teacher Preparation context.	2	15	35	50
(11 Weeks)=(396 hours)	TOTAL PRACTICAL COURSE	8	60	120	200

(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(11 Weeks)=(396 hours)	TOTAL PRACTICAL	08	60	140	200
(19 Weeks)=(684 hours)	THEORY & PRACTICAL	24	180	420	600

SEMESTER- III, SESSION 2018-2019

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
A. Core Components		8	60	140	200
A.1 Perspective Courses		8	60	140	200
Philosophy of Education (2 Weeks)=(72 hours)	PC-2 Advanced Study in Philosophy of Education	4	30	70	100
Psychology of Education (2 Weeks)=(72 hours)	PC-6 Advanced Educational Psychology	4	30	70	100
B. Specialization Components		8	60	140	200
B.1 Content Cum Pedagogy of School Subjects		8	60	140	200
Content Cum Pedagogy(any1) 1.Social Science 2.Biological science 3.Mathematics 4. Physical science (4 Weeks)=(144 hours)	CCP-3 Contents cum Pedagogy Elementary School Stage	4	30	70	100
	CCP-4 Contents cum Pedagogy Sec. & Higher Sec. Stage	4	30	70	100
(8 Weeks)=(288 hours)	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 (3 Weeks)=(108 hours)	PA-3 Organization of Work -shops 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 (4 Weeks)=(144 hours)	IA-2 Class Room Observation & focused on Assignment.	4	30	70	100
C.4 Attachment Activity (AA)		2	15	35	50
3. Exposure work other than School. (4 Weeks)=(144 hours)	AA-3 Exposure Curriculum /text book agency, policy making body, state education department relevant to educational practice other than School.	2	15	35	50
(11 Weeks)=(396 hours)	TOTAL PRACTICAL COURSE	8	60	140	200

(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(11 Weeks)=(396 hours)	TOTAL PRACTICAL	08	60	140	200
(19 Weeks)=(684 hours)	THEORY & PRACTICAL	24	180	420	600

SEMESTER- IV, SESSION 2018-2019

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
A. Core Components		16	120	280	400
A.1 Perspective Courses		8	60	140	200
Education Studies (2 Weeks)=(72 hours)	PC-7 Issues in Concerns in Education	4	30	70	100
Curriculum and Pedagogy Studies (2 Weeks)=(72 hours)	PC-10 Curriculum Development	4	30	70	100
A.2 Research, Tools and Self Development (RTS)		8	60	140	200
Research in Education (2 Weeks)=(72 hours)	RTS-2 Advanced Educational Research	4	30	70	100
Self - Development Skill & ICT (2 Weeks)=(72 hours)	RTS-4 Communication Skill- and ICT In Education	4	30	70	100
(8 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400

PART- II	C -Practical Course	Credit	Marks		
			Internal	External	Total
C.1 Research Activity (RA)		4	30	70	100
Dissertation, Viva-voce on Dissertation, Seminar & School Observation (4 Weeks)=(144 hours)	RA-2 Dissertation Work on a Selected Problem	4	30	70	100
C.3 Internship Activity (IA)		4	30	70	100
Class Room Teaching Practice on both School Subjects Practice and Observation & Assignment (4 Weeks)=(144 hours)	IA-3 Class Room Teaching Practice on Subjects-2	4	30	70	100
(8 Weeks)=(288 hours)	TOTAL PRACTICAL COURSE	8	60	140	200

(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(08 Weeks)=(288 hours)	TOTAL PRACTICAL	08	60	140	200
(16 Weeks)=(576 hours)	THEORY & PRACTICAL	24	180	420	600

SEMESTER- V, SESSION 2019-2020

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
A. Core Components		16	120	280	400
A.1 Perspective Courses		8	60	140	200
Sociology-History-Political Economy of Education (2 Weeks)=(72 hours)	PC-4 Historical, Political and Economic Perspectives of Education.	4	30	70	100
Education Studies (2 Weeks)=(72 hours)	PC-8 Contemporary Concerns in Education	4	30	70	100
A.3. Teacher Education Courses (TEC)		8	60	140	200
Teacher Education (4 Weeks)=(144 hours)	TEC-1 Perspectives in Teacher Education	4	30	70	100
	TEC-2 Issues, Challenges and Research in Teacher Education	4	30	70	100
(8 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400

PART- II	C -Practical Course	Credit	Marks		
			Internal	External	Total
C.1 Research Activity (RA)		4	30	70	100
Dissertation, Viva-voce on Dissertation, Seminar & School Observation (4 Weeks)=(144 hours)	RA-3 Academic Writing & Presentation Professional Seminar	4	30	70	100
C.2 Practicum Activity (PA)		2	15	35	50
Workshops, Seminars, Projects and Curriculum Transaction (3 Weeks)=(108 hours)	PA-4 Project development for Curriculum Transaction	2	15	35	50
C.4 Attachment Activity (AA)		2	15	35	50
4. Thematic/focused area work. (4 Weeks)=(144 hours)	AA-4 Working in a field situation related to the thematic or focus area	2	15	35	50
(11 Weeks)=(396 hours)	TOTAL PRACTICAL COURSE	8	60	140	200

(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(11 Weeks)=(396 hours)	TOTAL PRACTICAL	08	60	140	200
(19 Weeks)=(684 hours)	THEORY & PRACTICAL	24	180	420	600

SEMESTER- VI, SESSION 2019-2020

PART- I	A & B -Theory Course	Credit	Marks		
			Internal	External	Total
B.2 Selected Thematic Areas (any two)		8	60	140	200
1. Curricullum Pedagogy & Assessment 2. Economic & Planning in Education 3. Elementary Education 4. Secondary & Higher Secondary Education 5. Higher Education (4 Weeks)=(144 hours)	STA-1 Specialization 1 Elementary, Sec. & Higher Sec School Stage	4	30	70	100
	STA -2 Specialization 2 Elementary, Sec. & Higher Sec School Stage	4	30	70	100
B.3 Elective Course Areas(any two)		8	60	140	200
1. Study of Policies in Education 2. Educational Administration & Management 3. Gender study In Education 4. Inclusive Education 5. Educational Technology & ICT (4 Weeks)=(144 hours)	ECA-1 Specialization 1 Elementary, Sec. & Higher Sec School Stage	4	30	70	100
	ECA -2 Specialization 2 Elementary, Sec. & Higher Sec School Stage	4	30	70	100
(8 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400

PART- II	C -Practical Course	Credit	Marks		
			Internal	External	Total
C.1 Research Activity (RA)		4	30	70	100
Dissertation, Viva-voce on Dissertation, Seminar & School Observation (5 Weeks)=(180 hours)	RA-4 Dissertation Submission	4	30	70	100
C.3 Internship Activity (IA)		4	30	70	100
Class Room Teaching Practice on both School Subjects Practice and Observation & Assignment (4 Weeks)=(144 hours)	IA-4 Final Teaching on both the School Subjects	4	30	70	100
(9 Weeks)=(324 hours)	TOTAL PRACTICAL COURSE	8	60	140	200
(08 Weeks)=(288 hours)	TOTAL THEORY COURSE	16	120	280	400
(09 Weeks)=(324 hours)	TOTAL PRACTICAL	08	60	140	200
(17 Weeks)=(612 hours)	THEORY & PRACTICAL	24	180	420	600

17. M.SC. IN NANO SCIENCE

1. **Name of the Course Coordinator: Dr. A. Mishra Mob.No. 9438044602**
2. **Name of the Deputy Coordinator: Dr. R.N. Mahaling Mob No. 9583595424**
3. **ELIGIBILITY CRITERIA:** (i) Any science graduate with 45% marks in aggregate.
4. **SELECTION CRITERIA:** Career 30%, Written Test 70%.

Category I: Science Graduates

Degree	1 st Division	2 nd Division	3 rd Division	Distinction
HSCE	6	4.5	3	
+2	9	7	5	
+3 (Hons)	13	10	-	2
+3 (Pass)	7	-	-	2

(When the number of application is less than the sanctioned strength, merit list will be prepared on the basis of career mark only)

5. **DURATION OF THE COURSE: 2 Years**
6. **NUMBER OF SEATS: 15**
7. **FEE STRUCTURE:**
In addition to fees prescribed in the Prospectus at Clause-11, a candidate shall pay Rs. 30,000/- per Semester as Course Fee at the time of admission to each Semester.
8. **COURSE FACULTY: Faculty of the School of Chemistry/Physics/Biotechnology/ Environmental Science and other Guest Faculty.**
9. **COURSE STRUCTURE:**

COURSE No.	1 st SEMESTER	CREDITS
	COURSE	
NS-601	Introduction to Nanoscience and Nanotechnology	4
NS-602	Surface, Colloid and Interface Science	4
NS-603	Introduction to Advance Biology	4
NS-604	Nanoscience and Environment	4
NS-605	Application of Computational Methods	3
NS-606	Synthesis of Nanomaterials	3
	Total	22

PROSPECTUS (SELF-FINANCING) 2017-18

2nd SEMESTER		
NS-607	Nanotechnology in Energy Conversion and Storage	4
NS-608	Nanosensors and Devices	4
NS-609	Nanostructured Materials and Processing	4
NS-610	Nanomaterials Synthesis and Characterization Techniques	4
NS-611	Nanomaterial Lab	2
NS-612	Seminar	2
	TOTAL	20
3rd SEMESTER		
NS-701	Project Work	20
NS-702	Literature Review	10
	TOTAL	30
4th SEMESTER		
NS-703	Supramolecular Chemistry and Biology	4
NS-704	Nanostructures in Biological Systems	4
NS-705	Carbon Nanostructures & Functionalization	4
NS-706	Organic and Inorganic Nanomaterials	4
NS-707	Comprehensive Viva	2
	TOTAL	18

18. M.TECH IN NANO SCIENCE & TECHNOLOGY

1. **Name of the Course Coordinator: Dr. A. Mishra Mob.No. 9438044602**
2. **Name of the Deputy Coordinator: Dr. R.N. Mahaling Mob No. 9583595424**
3. **ELIGIBILITY CRITERIA:** (i) B.E./B.Tech. (Any Specialization), M.Sc. (Physics/ Chemistry/ Material Science/Applied Chemistry/ Biochemistry/ Biotechnology/ Life Science/Environmental Science), with 45% marks in aggregate, (ii) B.E./B. Tech, with minimum 45% in aggregate.
4. **SELECTION CRITERIA:** Career 30%, Written Test 70%.

For General M.Sc.Students	First Dvn	Second Dvn	Third Dvn
H.S.C.E	6.0	4.5	3.0
+2	6.0	4.5	3.0
+3 (Hons)	9.0	7.0	5.0
Distinction	1.0	1.0	1.0
M.Sc.	8.0	6.0	4.0
For Professional degree students	First class Hons	First class	Second Class
B.E /B.Tech(after +2)	18	13	8

(When the number of application is less than the sanctioned strength, merit list will be prepared on the basis of career mark only)

5. **DURATION OF THE COURSE:** 2 Years
6. **NUMBER OF SEATS:** 15
7. **FEE STRUCTURE:** In addition to fees prescribed in the Prospectus at Clause-11, a candidate shall pay Rs. 30,000/- per Semester as Course Fee at the time of admission to each Semester.
8. **COURSE FACULTY:** Faculty of the School of Chemistry/ Physics/ Biotechnology/ Environmental Science and other Guest Faculty.
9. **COURSE STRUCTURE:**

	1 st SEMESTER	
COURSE No.	COURSE	CREDITS
NST-601	Introduction to Nanoscience and Nanotechnology	4
NST-602	Surface, Colloid and Interface Science	4
NST-603	Introduction to Advance Biology	4
NST-604	Nanoscience and Environment	4
NST-605	Application of Computational Methods	3
NST-606	Synthesis of Nanomaterials	3
	Total	22

2nd SEMESTER		
NST-607	Nanotechnology in Energy Conversion and Storage	4
NST-608	Nanosensors and Devices	4
NST-609	Nanostructured Materials and Processing	4
NST-610	Nanomaterials Synthesis and Characterization Techniques	4
NST-611	Nanomaterial Lab	2
NST-612	Seminar	2
	TOTAL	20
3rd SEMESTER		
NST-701	Mechanical Processing and Properties of Nanomaterials	4
NST-702	Nanostructures in Biological Systems	4
NST-703	Advanced Nanomaterials	3
NST-704	Research Methodology	4
NST-705	Product Design, Management Techniques and Entrepreneurship	3
	TOTAL	18
4th SEMESTER		
NST-706	Project Work	18
NST-707	Literature Review	10
NST-708	Comprehensive Viva	02
	TOTAL	30

**TEACHERS OF THE P.G. DEPARTMENTS
SAMBALPUR UNIVERSITY**

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Prof. A.K. Das Mohapatra, M.Com,M.Phil,LL.B, Ph.D.,FDPM(IIM-A)	Professor
Dr. P.C. Tripathy, M.Com.,M.Phil, M.B.A., Ph.D.	Reader & Head
Dr. T.K. Das, M.A.,M.Phil, Ph.D.	Reader
Dr. D.K. Mahalik, B.E., M.B.A. , Ph.D.	Reader
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Dr. H. Chakraborty, M.Sc., Ph.D.	UGC Asst. Professor
Prof. B.K. Mishra, M.Sc., Ph.D., D.Sc.	Retd. Professor (UGC-BSR Faculty Fellow)

Telephone No.(Office)

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P.G. Dip. in RS&GIS
Dr.(Mrs.) N. Mahanta, M.Sc., M.Phil., Ph.D.,
P.G. Dip. in RS&GIS

2430325
Professor & Head
Reader

Asst. Professor
Asst. Professor

ECONOMICS

Prof. S.S.Rath, M.A., Ph.D.
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2431548
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Asst. Professor
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2431033
Professor & Head
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2432258
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Dr. J. Ratha, M.Sc., Ph.D., B.Ed.
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Dr. S.N. Pradhan, M.Sc., M.Phil., Ph.D.
Dr. N.J. Ekka, M.Sc., M.Phil. Ph.D.
Prof.(Mrs.) B. Biswal, M.Sc., Ph.D., D.Sc.

2431879
Professor
Reader
Reader & Head
Reader
Lecturer
Lecturer
Asst. Professor
Asst. Professor
Asst. Professor
Retd. Professor (CSIR
Emeritus Scientist)

Telephone No.(Office)

PHYSICS

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Sri S. Minz, M.Sc.
Prof. P. Nayak, M.Sc., Ph.D.

2431719

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Professor & Head
Professor
Asst. Professor
Asst. Professor
Asst. Professor
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Emeritus Scientist)

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Shri S.C. Murmu, M.A., M.Phil.

H.O.D.

Asst. Professor & Coordinator

NANO RESEARCH CENTRE

Chairman, P.G. Council
Dr. A. Mishra, M.Sc., Ph.D.

Head

Coordinator

DON'T 'RAG' ALSO DON'T BE A MUTE WITNESS TO 'RAGGING'

What is Ragging?

Any act resulting in :

- * Mental/Physical/Sexual abuse
- * Verbal abuse
- * Indecent behaviour
- * Criminal intimidation/
Wrongful restraint
- * Undermining human dignity
- * Financial exploitation/
Extortion
- * Use of force

Each of the above is a criminal offence

A student indulging in ragging can be :

- * **Expelled from the institution**
- * **Banned from the mess/hostel**
- * **His/her scholarship can be withdrawn**
- * **Debarred from examinations**
- * **Denied admission to any institution**
- * **Prosecuted for criminal action**
- * **Institutions have been asked to file FIR with local police against those who RAG/ABET ragging.**

RAGGING IN ANY FORM IS PUNISHABLE