

दक्षिण बिहार केन्द्रीय विश्वविद्यालय

(संसद के अधिनियम द्वारा स्थापित)

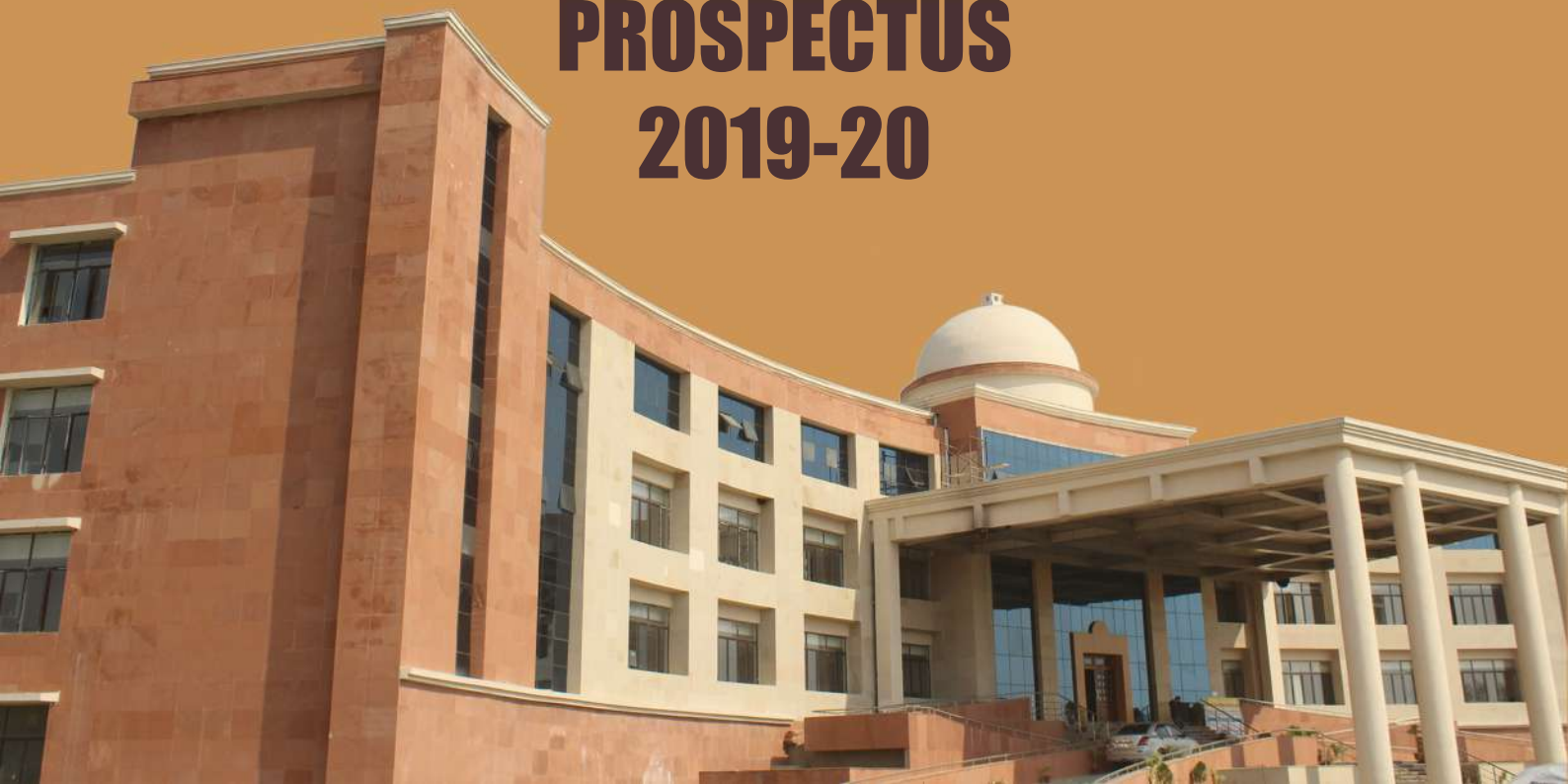
CENTRAL UNIVERSITY OF SOUTH BIHAR

[Established by an Act of Parliament]

(Accredited with Grade 'A' by NAAC)



PROSPECTUS 2019-20



Central University of South Bihar

Schedule of Central University Common Entrance Test (CUCET)-2019

Sr. No.	Activity	Date
1.	Commencement of Online Registration	March 13 th , 2019
2.	Closing Date of Online Registration	April 13 th , 2019
3.	Last date to accept the fee	April 13 th , 2019
4.	Date of Admit Card Upload	May 10 th , 2019
5.	Examination Date	May 25 th & 26 th , 2019
6.	Answer Key Upload	May 27 th , 2019
7.	Grievances, if any upto	May 27 th - 29 th , 2019
8.	Corrected Answer Key	June 05 th , 2019
9.	Result Declaration	June 21 st , 2019

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Central University of South Bihar

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FROM THE DESK OF VICE-CHANCELLOR



Constant growth is inevitable for development of an academic institution. Central University of South Bihar till eight years of coming into being was constrained to attain its natural growth due to functioning from temporary rented premises. The Year 2018 proved to be a remarkable year in the history of Central University of South Bihar as from this year the University started offering of academic programmes from its own permanent campus. Functioning from own campus gave us the opportunity to accelerate the growth of the University in terms of number of programmes offered by the University and to ensure the world class infrastructural facilities. In the last academic year five new postgraduate programmes namely M.Sc. in Chemistry, M.Sc. in Physics, M.A. in History M.A. in Social Work and M. Com were launched. This year the University has succeeded to get sanction for three new Departments namely Department of Pharmacy, Department of Geology and Department of Physical Education. The University plans to activate these new departments in session 2019-20.

The last year also witnessed a lot of efforts made on the front of academic reforms as number of ordinances and regulations related to award of various degree programme, hostel manual, alumni association were framed or updated to administer the functioning of the University in a better way.

The University is committed to ensure inclusive access for students without any discrimination in terms of caste, colour, religion or region. This University embarks on new innovative courses that are highly relevant in modern economic scenario. Besides allowing flexibility in choices of courses under the Choice Based Credit System (CBCS), the University provides optimum learning through a very transparent system of continuous assessment and exposure to intensive laboratory based training and internship in related fields. The highly qualified faculty, many of them having exposure of foreign University, ensures delivery at the frontiers of new knowledge. The students have the opportunity of enriching their learning experience through a free access to Wi-Fi and very rich library with access to more than 31,000 books and 8,000 online journals of high repute. The University assures full support to all its students to realize their potentials to the fullest.

While releasing this prospectus, I invite all the potential students for seeking admission to this Central University, which is the first of its kind in the State of Bihar. The University looks forward to welcome highly motivated students, who will crack the All India CUCET-2019 and seek admission in our University.

With best wishes.

(Prof. H.C.S. Rathore)



CENTRAL UNIVERSITY OF SOUTH BIHAR: AT A GLANCE

The Central University of South Bihar (CUSB) is one amongst the sixteen Central Universities established in 2009 by Central Universities Act, 2009 (section 25 of 2009) of Parliament. The campus of the University is spread over about 300 acres of land located at Gaya-Panchanpur Road, about 15 kms. from Gaya railway station.



As stated in Section 5 of the Act, the objective of the University shall be: "... to disseminate and advance knowledge by providing instructional and research facilities in such branches of learning as it may deem fit; to make special provisions for integrated courses in humanities, social sciences, and technology in its educational programmes; to take appropriate measures for promoting innovations in teaching-learning process and inter-disciplinary studies and research; to educate and train manpower for the development of the country; to establish linkages with industries for the promotion of science and technology; and to pay special attention to the improvement of the social and economic conditions and welfare of the people, their intellectual, academic and cultural development."

The University started its academic journey in 2009 from the premises of BIT Patna campus by launching of a Master's programme in Development Studies and gradually added new master level courses in the year 2010-11, 2011-12, 2012-13 covering a range of Basic and Applied Sciences and Humanities. In the year 2013-14 the University started Integrated Undergraduate programmes in Education and Law and also launched Integrated M.Phil-Ph.D Programmes in selected Departments / Centres. At present a total of 04 Undergraduate, 18 Postgraduate and 12 M.Phil-Ph.D programmes are being offered by 18 Departments / Centres established under the approved 14 Schools. From academic year 2016-17 Ph.D. programmes in all Centres/Departments were introduced in accordance with the UGC (Minimum Standard and Procedure for Award of M.Phil/Ph.D Degree) Regulations, 2016.



With its world class faculty, high teacher-student ratio and unparalleled lab facilities in the state of Bihar, the University offers Choice Based Credit System (CBCS) with total internal evaluation of students' performance. Conducive and research oriented environment with multidisciplinary approach, innovative pedagogies, promising infrastructural facilities and effective students' support system to nurture the students' personality holistically and to prepare them for future are its main features. A good number of our students have qualified JRF/NET, GATE and GRE, and secured significant places in industry and institutes of international repute, and have also won accolades in various fields.

SALIENT FEATURES OF ACADEMIC CURRICULUM

- 1. Semester System:** Semester system is followed for all academic programmes to enlarge curricular space and encourage accelerated learning opportunities. This system further enhances ability to accommodate diverse choices that dynamic and motivated students may like to have. As per the requirements of the academic programmes, decisions regarding student-faculty contact hours during a semester, developing the credit system determining the quantum of learning, time-distribution on class room work, elements of participatory teaching-learning process, field-work, lab-work, workshop, seminar, excursion, internship and other curricular works are taken by the academic bodies of the University. The University provides the opportunity for summer Internship in various programmes keeping in view of the important role of practice based learning and to gain experience in their field.
- 2. Choice Based Credit System (CBCS):** CBCS has some unique features like enhanced learning opportunities, ability to match student's scholastic needs and aspirations, horizontal intra and inter School/Department mobility of students, inter-institutional transferability of students, improvement in educational quality and excellence, flexibility for working students to complete the programme over an extended period of time, and innovation and comparability of educational programmes across the country. CBCS facilitates the students to have vertical integration of knowledge and holistic development.
- 3. Evaluation System:** Continuous Internal Evaluation is the central feature of the evaluation system of this University. The teacher who offers the course is the best person to assess the performance of his students. Appropriate mechanisms have been devised to ensure transparency and accountability in internal assessments and End-semester evaluations.



4. **Infrastructure and Ambience:** All appropriate steps are taken to create and maintain infrastructure for quality teaching and research as per requirements. The University has digitalized library, modern labs, and smart class rooms, separate hostels for boys and girls and facilities for sports and cultural activities.
5. **Faculty Members:** The University has sanctioned strength of 214 faculty members that include highly qualified eminent personalities as its senior faculties. About 95 percent faculty members are Ph.D. / D.Lit. degree holders and have postdoctoral experiences at established laboratories in India and abroad. Coming from different states of the country they form a truly pluralistic group of academics.
6. **Governance :** Central University of South Bihar has been following a decentralized and participative system of governance to achieve the mandate stated in the Act and Statutes of the University. Faculty members are involved in decision-making as members of various committees and academic bodies. The University has the Court as its apex body, the Executive Council, the Academic Council and the Finance Committee as Statutory Bodies. The Board of Studies (BoS) is an important body of a Department in matter of curriculum development. Each Department has a Departmental Committee. Academic proposals are initiated at the Department and School level and approved by the Academic Council. University has a Planning and Development Board for the preparation of future Plans. There is a Building & Works Committee which oversees Campus Development Project.
7. **E-Governance:** The University has put its effort towards the use of E-Governance tools as bringing effectiveness into university administration to promote transparency and efficiency in administration, improve service quality to students and other stake holders and to provide better service in terms of time, governance more efficiently and more effectively.
7. **Central Universities Common Entrance Test (CUCET) 2019:** Admission to the programmes are made through a national level entrance test that is organized jointly by Central Universities together. CUCET is conducted throughout India at different centres for admission to the various programmes offered.
8. **Admission and National Character:** Having a transparent admission process and conducting the admission test on an all India basis the University has succeeded to maintain a National Character on All India Basis.



9. **Scholarships:** All research scholars get UGC scholarship. Besides, the University has several types of scholarship schemes of its own.
10. **Student Support System:** Students are facilitated with a support system in multiple forms such as computing lab, library, hostels, transportation, health care etc. There are various forums and committees such as Psychological Counselling Forum, Grievance Redressal Cell, SC/ST/OBC/ Minority Cell, Anti-discrimination Cell, and Anti-ragging Committee to help students.
11. **Students' Achievement:** The University has a good track record of students qualifying for UGC-CSIR, GATE, GRE and other national and international examinations and winning awards in various educational events and other competitions. Students have been placed in many organizations of national repute, also through campus selection.
12. **Quality Management:** The Internal Quality Assurance Cell (IQAC) is established to ensure progressive improvement in efficiency of the University functioning.
13. **NAAC Ranking:** The University has been awarded with Grade 'A' in 2016 by NAAC.



**ACADEMIC PROGRAMMES, INTAKE AND ELIGIBILITY CRITERIA**

S.N.	Programme	Intake	Eligibility
1	Four-Year Integrated BA.BEd	50	10+2 or equivalent examination in any stream from any recognized Board/ University with at least 50% marks for General / OBC and 45% marks for SC / ST candidate.
2	Four-Year Integrated BSc.BEd	50	10+2 or equivalent examination in Science stream from any recognized Board/ University with at least 50% marks for General /OBC and 45% marks for SC / ST candidate.
3	Five-Year Integrated BA.LLB (Hons.)	120	10+2 or equivalent examination in any stream from any recognized Board/ University with at least 45% marks for General /OBC and 40% marks for SC / ST candidate.
4	M.A. in Journalism & Mass Communication	35	Bachelor's Degree in any discipline from recognised University with a minimum of 55% marks for General / OBC candidates and 50% marks for SC/ST candidates.
5	M.A./M.Sc. in Psychology	35	Bachelor's Degree with Psychology/ Human Sciences/ Social Sciences/ Life Sciences/Medical Science/ Engineering with a minimum of 50% marks from any recognised University for General / OBC candidates and 45% marks for SC/ST candidates.
6	M.A. in English	35	Bachelor's Degree in any discipline having English as a compulsory subject (Hons./ Pass/General) with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST category candidates from any recognised University.
7	M.A. in Hindi	35	Bachelor's Degree in any discipline from any recognised University with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates.
8	M.A. in Sociology	35	Bachelor's Degree in any subject from any recognised University with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates.
9	M.A. in Social Work	35	Bachelor's Degree in any subject from any recognised University with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates.
10	M.A. in Development Studies	35	Bachelor's Degree in any discipline with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates from any recognised University.
11	M.A. in Political Science & International Relations	35	Bachelor's Degree in any discipline from any recognised University with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates.
12	M.A. in Economics	35	Bachelor's Degree from a recognised university having Economics/Commerce/Statistics/ Mathematics as a subject (Hons./General) with a minimum of 45% marks for General / OBC candidates and 40% marks for SC/ST candidates.
13	M.Sc. in Biotechnology	35	Bachelor's degree in Biotechnology or any branch of Biological Science (Microbiology/ Biochemistry/ Bioscience/ Environmental Science/ Biomedical etc.) or B.Sc. (Hons) in Zoology/Botany/Chemistry or B.Sc. / Integrated B.Sc. B.Ed. of three year duration with any of the two subject among Zoology, Botany & Chemistry in 3rd year with a minimum of 55% marks for General / OBC candidates and 50% marks for SC/ST candidates from any recognised University.



14	M.Sc. in Bioinformatics	35	Bachelor's degree in Biological Sciences / Agricultural Science / Pharmaceutical Science/Veterinary Science/ Medical Science / Mathematics/ Physics/Chemistry /Computer Science/Information Technology or Integrated B.Sc. B.Ed. with 55% marks for General/OBC candidates and 50% marks for SC/ST candidates from any recognised University.
15	M.Sc. in Life Science	35	Bachelor's degree in any branch of Biological Sciences (Botany/ Zoology/ Microbiology/ Biochemistry/ Bioscience/ Biotechnology/ Environmental Science/ Agricultural Science/ Biomedical) or Integrated B.Sc B.Ed. with a minimum of 55 % marks for General/OBC candidates and 50% marks for SC/ST candidates.
16	M.Sc. in Environmental Science	35	B.Sc. in any basic science subjects such as Zoology/ Botany/ Physics/ Chemistry/ Life Sciences/ Geology/ Agricultural Science/ Environmental Science/ Ecology/ Biological Science/ Natural Resource Management/ Water Resource Management or Integrated B.Sc. B.Ed. with a minimum of 55 % marks for General/OBC candidates and 50% marks for SC/ST candidates from any recognised University.
17	M.Sc. in Computer Science	35	Bachelor's Degree from any recognised University in Science (CS/IT/Electronics with Mathematics) / BCA with a minimum of 55% marks for General /OBC candidates and 50% marks for SC/ST candidates and having Mathematics as a subject at 10+2 level.
18	M.Sc. / M.A. in Mathematics	35	Bachelor's Degree from any recognised University in Mathematics/ Statistics but should have studied Mathematics as a subject in all the 3 years with a minimum of 55% marks for General / OBC candidates and 50% marks for SC/ ST candidates.
19	M.Sc. in Statistics	35	Bachelor's (New UGC) Hons. Degree from any recognised University with Statistics/Bachelor's Degree with Statistics/ Mathematics /Computer Science but must have studied both Mathematics and Statistics as subjects for at least 2 years /4 Semester with a minimum of 50 % marks for General / OBC candidates and 45% marks for SC/ST candidates in the qualifying degree.
20	M.Sc. in Physics	35	B.Sc. with Physics or Integrated B.Sc. B.Ed with a minimum of 55 % marks for General / OBC candidates and 50% marks for SC/ST candidates from any recognised University.
21	M.Sc. in Chemistry	35	B.Sc. degree or its equivalent with Chemistry as one of the main subject or Integrated B.Sc. B.Ed. from a recognized University with minimum of 50% of marks or equivalent grade in aggregate or in Honours for General /OBC and 45% or equivalent grade for SC/ST candidates
22	M.A. in History	35	Bachelor's Degree in any discipline from recognized university with minimum of 50% marks for General / OBC candidates and 45% marks for SC/ ST candidates.
23	LL.M.	30	Passed with 50% marks in the final examination of Bachelor's Degree in Law, approved by the Bar Council of India, conducted by a University/ College duly recognized by the UGC.
24	M.Com.	35	Bachelor's in Commerce from any recognised University with a minimum of 50% marks for General / OBC candidates and 45% marks for SC/ST candidates.
25	M.Ed.	50	B.Ed. or Four Year Integrated B.A B.Ed/B.Sc. B.Ed. Degree from any recognised University/institution with atleast 50% marks or equivalent grade for General/OBC category and 45% marks for SC/ST candidates.



S.N.	Programme	Intake	Eligibility
26	Ph.D in Bio-Informatics @	29 (UR-15, OBC-7, SC-5, ST-2)	Master's Degree from any recognised University in Biological Sciences/Agricultural Science/Pharmaceutical Science/Veterinary Science/Medical Science/Physical Science/Chemical Science/Computer Science/IT with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates. Candidates having Master Degree in any of the above discipline with specialisation in Bio-Informatics or having Master's Degree in Bio-Informatics will be given preference.
27	Ph.D in Biotechnology @	17 (UR-6, OBC-6, SC-3, ST-2)	Master's Degree from any recognised University in Biotechnology / Pharmaceuticals Science/Medical Science/Agricultural Science/Chemistry/Physics/any branch of Biological Science (Microbiology/Biochemistry/ Molecular Biology/ Bioscience/ Environmental Science/Zoology/Botany/Biomedical) with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer)/Differently abled candidates.
28	Ph.D in Life Science @	11 (UR-6, OBC-2, SC-2, ST-1)	Master's Degree from any recognised University in any branch of Biological Sciences (Botany/ Zoology/ Microbiology/ Biochemistry/ Biosciences/ Biotechnology/ Environmental Science/ Biomedical/ Bioinformatic/ Agricultural Science/Plant Science) with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer)/Differently abled candidates.
29	Ph.D. in Environmental Science @	12 (UR-6, OBC-3, SC-2, ST-1)	M.Sc. in Chemistry/Physics/Biological Science/Life Science/Zoology/Botany/Geology/Marine Biology/Oceanography / Agricultural Science/Environmental Science/Ecology/ Natural Resource Management/Water Resource Management and other allied subjects with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
30	Ph.D. in Mathematics @	15 (UR-7, OBC-5, SC-2, ST-1)	Master's Degree in Mathematics from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer)/Differently abled candidates.
31	Ph.D. in Statistics @	6 (UR-3, OBC-2, SC-1)	Master's Degree in Statistics from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer)/Differently abled candidates.
32	Ph.D. in Computer Science @	5 (UR-2, OBC-2, SC-1)	M.Tech/M.Phil. in the area of Computer Science or Equivalent with a minimum of 55 % in aggregate or its equivalent Grade B in UGC 7 point scale from any recognised University. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer)/Differently abled candidates.



33	Ph.D. in Chemistry @	8(UR-5, OBC-2, SC-1)	M.Sc. Degree or its equivalent in Chemistry/applied Chemistry or allied subjects (including biochemistry, medicinal chemistry, industrial chemistry, nanoscience, environmental science) from a recognized University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
34	Ph.D. in Physics @	8 (UR-5, OBC-2, SC-1)	M.Sc. Degree in Physics from a recognized University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
35	Ph.D in Psychology @	7 (UR-3, OBC-2, SC-1, ST-1)	Master's Degree in Psychology with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
36	Ph.D in Clinical Psychology @	3 (UR-1, OBC-1, SC-1)	Master's Degree in Psychology and M.Phil in Clinical Psychology from an Institute/University recognised by Rehabilitation Council of India, with 55% in each in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC (Non creamy layer) / Differently abled candidates.
37	Ph.D. in English @	6 (UR-3, OBC-2, SC-1)	M.A. in English (Literature / Linguistics) from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
38	Ph.D. in Hindi @	14 (UR-7, OBC-3, SC-3, ST-1)	M.A. in Hindi from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
39	Ph.D. in Communication & Media Studies @	13 (UR-7, OBC-3, SC-2, ST-1)	M.A./M.Sc. in Mass Communication or Journalism or Advertising and Public Relations with 55% in aggregate or its equivalent Grade B in UGC 7 point scale from any recognised University. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
40	Ph.D. in Development Studies @	9 (UR-5, OBC-2, SC-1, ST-1)	Master Degree in any Social Science discipline from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
41	Ph.D. in Economics @	13(UR-6, OBC-3, SC-3, ST-1)	M.A./M.Sc. in Economics/Applied Economics /Business Economics/Financial Economics/Development Economics/ Development Studies with 55% in aggregate or its equivalent Grade B in UGC 7 point scale from any recognised University. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.



42	Ph.D. in Political Science & International Relations @	13 (UR-6, OBC-3, SC-3, ST-1)	Master's Degree in any discipline with 55% in aggregate or its equivalent Grade B in UGC 7 point scale from any recognised University. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
43	Ph.D. in Sociology @	17 (UR-7, OBC-5, SC-3, ST-2)	Master's Degree in any discipline with 55% in aggregate or its equivalent Grade B in UGC 7 point scale from any recognised University. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
44	Ph.D in Education @	36 (UR-17, OBC-9, SC-7, ST-3)	M.Ed./ M.A. (Education) from any recognized University with 55% marks or equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.
45	Ph.D. in Law @	15 (UR-7, OBC-5, SC-2, ST-1)	LL.M from any recognised University with 55% in aggregate or its equivalent Grade B in UGC 7 point scale. A Relaxation of 5% of marks from 55 to 50% or equivalent relaxation of Grade for SC/ST/OBC(Non creamy layer)/Differently abled candidates.

@ A candidates who is qualified in a national level test such as National Eligibility Test (NET-JRF), NET-LS (without fellowship), Graduate Aptitude Test for Engineering (GATE), State Level Eligibility Test (SLET) accredited by UGC/Central or State Government are exempted from appearing in the CUCET 2019 Entrance Test for admission to the Ph. D. Programme. However, such candidates have to apply for the programme on CUCET portal and pay the requisite fees and appear for interview for admission.

ज्ञान सेवा विमुक्तये



FACILITIES

Library

Central University of South Bihar has developed a well-equipped Central Library to cater to the information requirements of students and faculty for their academic accomplishments. The library has built a collection of more than 31,000 books to support academic curricula, teaching and research in various science and social science subjects including encyclopedias, Handbooks, miscellaneous Reports, dissertations, bound volume journals, Newspapers and its archives etc. All the books are barcoded and are organized on shelves using Dewey Decimal Classification Scheme (DDCS). An Online Public Access Catalogue (OPAC) of library books along with a Digital Library is made available for reader on every computer in the University premises.



Journals and Databases

The library subscribes to 108 quality print journals and magazines of renowned publishers from across the world and more than 8,000 online journals. Access of National Digital Library and e-PG Pathshala in the University are available, being a member of UGC-INFONET Digital Library Consortium now merged in e-ShodhSindhu: Consortium for Higher Education Electronic Resources, more than 4000 e-journals are available to the library from Annual



Reviews, Economic and Political Weekly, Oxford University Press, Project Muse, Springer Link 1700 Collection and Natural Journals, Taylor and Francis. The library also subscribes to various e-journals packages i.e. SCC Online (Platinum Plus Edition), Hein Online Academic Core Collection, WestLaw India, AIR Online Institutional Version, IEEE (ASPP) from IEEE and Digital Library Package from ACM, Royal Society of Chemistry Journals (RSC), American Physical Society, Emerald 312 title Collection, Wiley Blackwell, EWPRF India Time Series, ProwessIQ (CMIE), SIAM Journals, Cambridge University Press and Sage Education Journals. Besides, the library also subscribes to many online databases i.e. ISID database, World E-Book Library (WeB), South Asia Archive (SAA), Manupatra -(full text database for Law), AIR Supreme Court Database, AIR High Court Database, Criminal Law Journal Database, India stat –a statistical database for Development Studies, JSTOR -full-text database mainly for Social Sciences.

Library Services

The library is open from 9:00 am to 6:00 pm on all working days and Saturdays. Library services include circulation (issue/return) of books, Inter-Library Loan through DELNET, New Delhi, Current Awareness Service (CAS) for books and journals, photocopy etc. Using OPAC, users can search for availability of books in library, current status of books, due date of return, reserve/hold book, etc. Access to all electronic information resources is available for students, faculty and officials on their computer within the university premises through intranet using <http://10.0.4.211:8081> . Recently, access to these resources has been extended through Virtual Private Network (VPN). Faculty members can access online resources from anywhere. This facility is proposed to be extended, in near future, to students as well.

Common Computer Lab

Computer system facilitates a common computational resource for the academic programmes as well as computing resources in the University. The computer lab provides a central computing facility to the students, teachers and staff of the University for their assignments, projects, dissertation and research related works. In the computer lab, printing and scanning facilities are provided.



Internet & Intranet

Internet connectivity is provided under the scheme of National Mission on Education through Information and Communication Technology (NME-ICT) project of Government of India. All computers are connected through 1 GBPS Internet connectivity. The Intranet network, consisting of gigabyte Ethernet and OFC backbone provides connectivity to departments, library, classrooms and administration. World class networking product of CISCO has been installed in campus network to provide stable and hassle free computing. All class rooms are equipped with smart class room devices with Internet access.

Wi-Fi Facility

Students can avail Wi-Fi facility at our campus. CUSB has dedicated internet leased line connected to all buildings throughout the campus. Students, Research Scholar and faculty members are free to access the Wi-Fi internet.

Resources

At present, there are over 500 high performance computers in the University. All computers are equipped with latest operating system and application software to cater to the academic needs. Computers are protected by firewall and reliable antivirus software against computer virus, malware and unauthorized access. University has licensed copies of software such as SPSS, MATLAB, MINITAB, Adobe Creative Suite, QuarkXPress, KOHA, Windows Server 2008R, and Red Hat etc. The University has powerful online UPS to protect the computer and other sensitive devices from power fluctuation and surge.



Website & E-mail Facility

A fully functional website of the university has been developed. It is maintained and updated regularly. URL of website is www.cub.ac.in or www.cusb.ac.in. The University has a powerful e-mail system with group mail IDs of students and faculty members.

Accommodation

Two well-furnished and aesthetically designed separate hostels for girls and boys have been constructed within campus of the University with a view to provide best possible facilities to the students. For leisure and recreation, both indoor and outdoor sports facilities are made available in the hostels. Allotments of accommodation in Hostels are made in according with the norms, procedure and administration stipulated in the “Rules and Regulations Governing Hostel Administration and Residency” approved by the Statutory Bodies of the University.



ज्ञानं सत्त्वं विमुक्तये

Health Centre

The University is having a health centre in the campus with a view to provide treatment for general ailments under the supervision of resident doctors.

Vidyarthi Mediclaim Policy

Vidyarthi Mediclaim for students is a unique policy of National Insurance Company designed to provide health and personal accident cover to the students. All the students of the Central University of South Bihar are insured under this scheme whereby they are eligible for cashless treatment in authorized hospitals as well as for reimbursement of cost of treatment (IPD) in other hospitals within the limit of Rs. 50,000.



Scholarships Schemes

A number of scholarship schemes, as given below, are available for deserving and needy students:

Merit Scholarship to CUCET/ Semester Toppers

The University offers performance based Merit Scholarship to CUCET/ semester toppers under each programme in the University. Merit Scholarship @ Rs. 1,000 pm is awarded subject to minimum 75% class attendance in the following semester.

Merit-cum-Means Scholarship

The University encourages and supports the meritorious students who are in need of financial assistance to pursue their studies smoothly through Merit-cum-Means Scholarship. The scholarship is awarded in the form of waiver of tuition fee up to 20% of students in each programme

Earn While You Learn (EWYL) Scheme

EWYL is a unique scheme of the University aimed to encourage and support students to make them self-reliant and also develop better cooperation and leadership skills. Under the scheme, a student with relevant qualification/experience may be assigned a task for a maximum of 10 hours per week. This includes assistance in library, computer lab, laboratory, faculty, centre/department, office, placement section and other specific requirements.

Attendance Based Merit Scholarship

An innovative scheme to increase classroom attendance is available for the students. Students achieving 100% attendance during a semester are provided book(s) of their choice/need or reimbursed up to Rs. 1,000 at once.

Psychological Counselling and Guidance Services

Like physical health, mental health determines efficiency and productivity. Mental health is critically important for teaching-learning process, creativity, and congenial environment in academic institutions. The University adopts a forward looking approach and institutes psychological counselling and guidance services for students, faculty and employees. Innovative programmes like 'Crises Intervention Programmes' and 'Community Mental Health Programme' are planned to be developed. To facilitate learning, the motto of 'Learning Together' is encouraged and practiced.



Career Counselling and Placement Cell

The University has a Career Counselling and Placement Cell which takes care of the campus placements and job opportunities for the students enrolled in various courses under different Centres / Departments. Some of the key responsibilities of the Career Counselling and Placement Cell are:

1. To organise the job-oriented awareness related workshops time-to-time for the university students.
2. To provide placement training to students with sessions on Resume / CV writing, conducting mock interviews, group discussion, etc.
3. To invite the experts from corporate organisation for interactive sessions, lectures on soft skills and providing placement training to the students.
4. To disseminate the job opportunities related information in the concerned centres / departments.
5. To organise job fairs / career related fairs for the job seekers in the university premises.

Student Welfare

The University has an office of Dean Students' Welfare who is responsible to look after the general welfare of students outside classrooms, which contribute to the growth and development of their personality. Various activities and initiatives with respect to the following are coordinated by this office, viz. -

1. organizing educational tours, excursions and sports activities;
2. promoting social and cultural activities among students;
3. organization of student bodies in the University;
4. student-teacher relationship;
5. facilitating financial aid to needy students, securing of fellowships or scholarships, students' concession for travel etc.;
6. health and medical services to students;
7. student counselling;
8. special arrangement to be provided, if any, to women students, and differently abled students;
9. liaisoning between University administration and students;
10. providing student with information related to infrastructural facilities;
11. liaisoning with alumni association

Anti-Ragging Cell

Following the UGC regulations 2009 on curbing the menace of ragging in higher educational institutions, ragging in all its forms has been totally banned in the entire University including its departments/centres all its premises (academic, residential, sports, canteen etc.), whether located within the campus or outside and in all means of transportation of students. CUSB takes strict victimization, attendance, charging of fees, conducting of examinations, harassment etc.



Educational Tours

For educational tours organized as per the course requirements, the University may provide financial assistance, if required, to students in the form of one-time to and fro non-AC sleeper class rail fair by the shortest route. For routes not connected by railways, travel assistance equal to the actual bus fare may be provided.

Sports

The Sports activities in the University are coordinated by Sports Committee constituted to organize various sports events throughout the year. The University provides sports schedule in the academic calendar, which is distributed to all the students at the beginning of the academic year. University Sports Committee conducts various sports activities for both boys and girls throughout the academic year.





Cultural Activities

The University has a Cultural Committee coordinated by a Chairperson. The Committee organizes various cultural activities and events throughout the year which provides a platform to the students and which helps the students to identify their hidden talent and to develop themselves in the desired fields. The University has established a CUSB heritage club to nurture the creativity of each individual with an underlying intention of getting a closer look at our rich heritage and inculcating a sense of pride.



Grievance Redressal Cell

The University has a well-developed mechanism to redress the grievances of the students about academic and non-academic matters.

SC/ST/OBC Minority Cell

The University is committed to provide assistance to the SC/ST and minority students through SC/ST/OBC Minority Cell. The major purposes are to implement and monitor the reservation policy and address the problems of the students and to bring them at par with the main stream students by providing them teachers with expertise and specialization in the subjects where they lack.



Equal Opportunity Cell

With the purpose to eliminate discrimination and create awareness about it, as per UGC guidelines, the University has constituted an Equal Opportunity Cell headed by an Anti-Discrimination Officer of the rank of Professor.

Women Task Force

The University has constituted a Task Force for Women to provide security and protection to the women on the University campus and the hostels and to ensure safe working and learning environment to enable them to conduct their professional and academic activities.

SPARSH

The University has set up Sensitization, Prevention and Redressal of Sexual Harassment (SPARSH) for the prevention of sexual harassment in the University under UGC (Promotion of Equity in Higher Educational Institutions) Regulations 2012. SPARSH provides campus environment free of gender-based discrimination, sexual harassment and other acts of gender-based violence and creates awareness about it.

Proctorial Board

The University has a Proctorial Board which ensures to maintain discipline on the campus and cordial atmosphere amongst students through observation of general conduct of the students.

Extension activities outreach programme

Unnat Bharat Abhiyaan

Universities are the centres of higher learning and they serve as catalysts for social development and change. Unnat Bharat Abhiyaan, launched by the government, is an important initiative to revitalize and develop the rural India through the support of institutions of higher learning. The University is located in one of the backward regions and it is our responsibility to bridge the gap between rich and poor, rural and urban and bring transformation in the rural development of the region. University has adopted a few villages near Panchanpur and it is looking into the key issues like education, health and sanitation, entrepreneurship and agriculture. It aims to uplift the nearby villages and make them self-sufficient.

Legal Aid Clinic

The importance of Legal Aid and Awareness Campaigns as a mechanism for social progress is something that has been repeatedly stressed upon by the Government of India. In the backdrop of poverty and inequality, legal aid is an effective way towards attainment of the ideals of 'Social,



Economic and Political' Justice that are enshrined in our Constitution under the Directive Principles of State Policy. Imparting legal awareness is the first step towards ensuring prompt and effective access to justice. Keeping this in mind, the Bar Council of India mandated all law colleges and universities in India to establish and run legal aid centres or clinics. The idea was to fulfil certain standards of legal education, but more importantly, it was also aimed at engaging the students in serving their community by promoting legal awareness through these legal aid clinics and programmes. The entire purpose of setting up nationwide collegiate clinics is to acclimatize several thousand law students of the nation to the problems faced by the masses ignorant about their rights and remedies under the law. Under the School of Law and Governance, CUSB Legal Aid Clinic is one successful beacon. The clinic functions by organising legal literacy camps, seminars, legal counselling, public speaking, poster making, street plays and liaisoning with Legal Services Authorities and through various other communicable mediums.

Blood Donation Camp

The University organizes Voluntary Blood Donation Camps with the help of Red Cross Society regularly on the University campus. The students, faculty and non-teaching staff participate in these indoor blood donation camps.

Study Circle

The Students Study Circle, "Renaissance", is set up by the University. The motive of the study circle is to enlighten students and spread knowledge about the specific events through organizing seminars, debate competitions and other similar kinds of activity within the University campus.

Smile Group

SMILE is a voluntary social service group mostly initiated by the students. The aim of this initiative is to research into the problems of the under-privileged children and inspire them and to solve their problems by motivating them with the cooperation of parents, teachers and society. The members visit schools and students catchment areas on selected days, and donate stationary and other pertinent study items, interact with the children and study their cases and encourage them to involve in curricular and co-curricular activities.

CUSB Honesty Shop

The real test of the character only happens after passing the test of temptation, on the same pattern, an innovative initiative has been taken by opening of a Honesty Shop. The aim behind this initiative is to develop life skills among students. Stationary items like Pencil, copy, pen,



sharpener, rubber, copy, scale, staplers, cardboard, colors, whiteners etc. have been kept in this honesty shop. There is neither a shopkeeper nor any keeper/camera of the shop. The values of each item are written. Students pay for the material they need or buy and keep the prescribed amount in the cash box kept there. It is known that in the rapidly changing times, ethical values are being violated. This shop has been started to inculcate moral and ethical values and to teach the lesson of honesty to the students.

CUSB Book World

An initiative taken by Students & teachers based on the idea of *Reading, Sharing* and *Donating* of Books. This initiative is an attempt to promote the culture of learning and reflection from different facets of our social life through reading sessions, discussions and deliberations thereof. These efforts are also designed to facilitate those students who have a desire to study books but may not be in a position to buy books and enjoy fruitful readings. Book World is running successfully for more than two years and also has been acknowledged by Indian Sociological Society in its e-newsletters.





ADMISSION POLICY

1. No candidate shall be eligible to register for a fulltime programme of study if s/he is already registered for any full-time programme of study in this University or any other University/Institution or is in full time employment.
2. To decide policy matters on admission and to oversee the admission process, there is the 'University Admission Teaching and Evaluation Committee (UATEC)'. The Admission Committee governed by UATEC takes appropriate steps for admission in various programmes.
3. The UGC guidelines and Government of India directives regarding reservations in admission are followed.
4. Every year before the commencement of the Entrance Test, the information is advertised well in advance both in print and electronic media. The final merit list shall be prepared from CUCET-2019. The admission is given based on the merit list and following the reservation policy.
5. The fee structure for different programmes is decided by the Academic Council on the recommendation of UATEC.
6. In the event of withdrawing admission by a student, the issue of cancellation of admission and refund of tuition / hostel fee, etc. to the student are decided in the light of the UGC & MHRD directives and University policy in this regard.
7. Important dates related to the admission are announced by the University. The University holds the right to cancel the application and admission of any candidate for wrongful submission of facts pertaining to qualification, reservation and/or any other matters.
8. Any complaint or grievance regarding the admission may be made in writing to the University Admission Committee.

Reservation in Admissions: The Central University of South Bihar follows the reservation policy in admissions as per provisions contained in the Central Educational Institutions (Reservation in admission) Act, 2006 and as amended in 2012 and time to time.



General Information for Admission / Entrance Test

1. Students shall be admitted to the respective programmes as per the Admission Policy of the University. Regular updates are available on the University website. All eligible candidates must report themselves for the admission test to the respective test centre(s) on their own and according to the schedule.
2. Admission to the programmes in this University shall be subject to fulfilling the stipulated eligibility conditions. It is the applicant's responsibility to ensure that s/he fulfils the eligibility criteria for a particular programme as mentioned in the admission notification.
3. The applicant must have appeared in the final examination. Applicants awaiting result in the qualifying examination may also apply. However, their admission shall be subject to acquiring minimum eligibility marks in the qualifying examination and they may be allowed to seek admission only on production of their final year marksheet.
4. High School level knowledge of Mathematics, Computer literacy and good communication skills in English language are desirable for all the programmes.
5. Short-listed candidates based on entrance test scores, will be called for counselling and admission.
6. Details of online/offline counselling will be uploaded on the University website after declaration of CUCET-2019 results.
7. Candidates expelled from any other Board/ Institute/University or dismissed from Government service on disciplinary grounds and those who are known to have been involved in acts of crime and gross indiscipline or misconduct shall not be eligible for admission. The University may approach the police for verification in this regard. After the admission, if anybody is found guilty in this regard, s/he shall have to quit the university.
8. Central University of South Bihar reserves the right to launch or drop any academic programme at any stage.
9. Medium of the Entrance Test is English, except for M.A/Ph.D. in Hindi.
10. If a student is not in a position to provide any of the requisite documents/certificates at the time of admission, he shall be considered as provisionally admitted. Last date of submission of any of the pending documents/certificates is 30th September, 2019 failing which the admission of the student shall be liable to be cancelled.



NOTES:

1. The Prospectus 2019-20 supersedes earlier Prospectus/ Brochure and the contents of this and previous Prospectus/ Brochure cannot be produced for any legal purpose. All disputes, however, shall be subject to Patna High Court Jurisdiction only.
2. The contents of the Prospectus may be changed /modified as per administrative decision in future. Course contents may be revised as per decisions of the Academic Council/other bodies of this University.
3. **Payment of Fee:** - The finally selected candidates shall be required to pay fee as prescribed as **Appendix '1'**. In case, any student fails to deposit fee within the stipulated period, his/her admission shall stand cancelled and other candidates from the waiting list will be considered for admission purely on merit basis. Changes in fee structure will be subject to administrative decision of the University.
4. All admitted students shall have to submit Migration/Transfer Certificate from their respective Universities/ Boards positively before 30th September, 2019.
5. Refund of security deposit shall be made by the University only after the declaration of final result of the programme. In case, a student fails to complete the programme within stipulated time, the security deposit shall be refunded as per rules.
6. Regulations regarding admission and teaching-cum-evaluation as prescribed in the relevant Ordinance and also announced from time to time by the University are to be strictly followed by the students.
7. Students are advised to regularly pay attention to the notice boards, displayed at different places pertaining to academic matters.
8. As per the Supreme Court orders, ragging of any kind is banned within and outside the premises of this University. Any student found guilty of ragging and /or abetting ragging is liable to be punished appropriately as per rules of the University/UGC guidelines.
9. Students are expected to maintain excellent conduct inside and outside the University as well as in the hostels. They will be provided a copy of the University rules at the time of admission. Breach of University rules may result in disciplinary action including expulsion from the University, and the University reserves the right to make changes in the rules at any point of time, which will be notified to the students for their compliance.



MODEL ORDINANCE AND REGULATIONS GOVERNING MASTER OF <NAME OF THE DISCIPLINE/ PROGRAMME> DEGREE PROGRAMME OF CENTRAL UNIVERSITY OF SOUTH BIHAR UNDER CHOICE BASED CREDIT SYSTEM

(Effective from Academic Session 2018-19)

Under the powers conferred by The Central Universities Act, 2009- section 28(1) (b)], as amended, Central University of South Bihar, hereby, institutes the four semester Post Graduate Degree Programme for the Award of Master of <Name of the Programme> Degree by the Department of <Name of the Department> under the School of <Name of the School> of the University under the choice based credit system. The following ordinance for governing admission, course of study, examinations and other matters relating to <Name of the Programme> Degree under Department of <Name of the Department> of the Central University of South Bihar are hereby laid to come in force w.e.f. the Academic Session 2018-19 onwards till further amended.

1. Definitions of Key Words:

- 1.1 **‘Choice-Based Credit System (CBCS)’:** The CBCS provides choice for the students to select course from the prescribed courses (Elective or Soft-skill courses). It provides a ‘cafeteria’ approach in which the students can take courses of their choice, learn at their own pace, study additional courses and acquire more than the minimum required credits, and adopt an inter-disciplinary approach to learning.
- 1.2 **‘Academic Year’:** Two consecutive (one odd + one even) semesters shall constitute one academic year.
- 1.3 **‘Course’:** Course, usually referred to as paper having specific title and code number, is a component of a Programme. It consists of a list of topics /points /concepts /theories /principles etc. which a student has to learn and master during the Programme of study. Each Course generally shall be of 04 credits. Each course should define the learning objectives/ learning outcomes. A course may be designed to be delivered through lectures/tutorials/laboratory work/field work/outreach activities/project work/vocational training/viva/seminars/ term papers/assignments /presentations / self-study work etc., or a combination of some of these.
- 1.4 **‘Course Teacher’:** The course teacher generally will be the teacher who has primarily conceived the course, developed its contents, taken up the responsibility of teaching it and evaluating the performance of the students in that course.
- 1.5 **‘Credit’:** A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.
- 1.6 **‘Credit Point’:** It is the product of the grade point and the number of credits for a course.
- 1.7 **‘Grade Point’:** It is a numerical weight allotted to each letter grade on a 10-point scale.
- 1.8 **‘Letter Grade’:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F. A letter grade is assigned to a student on the basis of evaluation of her/his performance in a course on a ten point scale.



- 1.9 **‘Programme’**: An educational Programme leading to the award of a Degree, Diploma or Certificate.
- 1.10 **‘Credit-Based Semester System (CBSS)’**: Under the CBSS, the requirement for awarding a degree or diploma or certificate is prescribed in terms of number of credits to be completed by the students.
- 1.11 **‘Semester’**: Each Semester shall consist of 15-18 weeks of academic work equivalent to 90 actual teaching days. The odd semester may be scheduled from July to December and even semester from January to June. The credit-based semester system provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching.
- 1.12 **‘Semester Grade- Point Average (SGPA)’**: It is a measure of performance of the work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.
- 1.13 **‘Cumulative Grade Point Average (CGPA)’**: It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It shall be expressed up to two decimal places.
- 1.14 **‘Transcript’/ ‘Grade Card’ ‘or Certificate’**: Based on the grades earned, a grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (code, title, number of credits, grade and/or marks secured) along with SGPA of that semester.
- 1.15 **‘The University’**: ‘The University’ in this Ordinance means the Central University of South Bihar.

2. Admission and Other General Provisions:

- 2.1 The Programme of study leading to <Name of the Programme> Degree of Central University of South Bihar shall be of two year (Four Semesters) duration which may be completed in a maximum duration of four years (Eight Semesters).
- 2.2 The intake to the <Name of the Programme> Programme shall be as decided by the UATEC/Academic Council of the University from time to time.
- 2.3 The admission to the <Name of the Programme> Programme shall be governed by the provisions as laid down by the UATEC/Academic Council of the University from time to time.
- 2.4 Reservation of seats for admission in M.Ed. Programme shall be as per reservation policy of Government of India and as notified by GoI/UGC from time to time.
- 2.5 In accordance with the Reservation Rules of GoI for admission in Central Higher Educational Institutions, reservations of seats in M.Ed. Programme are as follows :



S. No.	Category	Reservation
1	SC Candidates	15 % of the intake
2	ST Candidates	7.5% of the intake
3	OBC Candidates	27% of the intake
4	<i>Divyang</i> Candidates	5% of the intake (<i>on horizontal reservation basis</i>)
5	Dependents/Wards of Defence Personnel /Kashmiri Migrants/ NCC Cadets	As per the GOI rules

- (a) The candidates seeking admission under the above categories shall be required to fulfill the prescribed eligibility condition of admission of the programme and shall submit requisite documents in support of their claim, as prescribed by the GOI from time to time.
- (b) The SC/ ST/OBC candidates must enclose attested copy of the latest caste certificate as per GOI norms along with their Admission Form/Enrolment form stating that the candidate belongs to SC/ST/OBC Category.

The following are empowered to issue SC/ST/OBC Certificates:

- (i) District magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Addl. Deputy Commissioner/Deputy Collector /Ist Class Stipendiary Magistrate/City Magistrate/Sub Divisional magistrate/ Taluka Magistrate/ Executive Magistrate /Extra Assistant Commissioner.
- (ii) Chief Presidency Magistrate/ Addl. Chief Presidency Magistrate/ Presidency Magistrate.
- (iii) Revenue Officer not below the rank of Tehsildar.
- (iv) Sub - Divisional Officer of the area where the candidate and/or his family normally resides.
- (v) Administrator/Secretary to the Administrator/ Development Officer (Lakshadweep Islands).
- (vi) Candidate must note that certificate from any other person/authority shall not be accepted generally.
- (c) 5% seats on horizontal reservation basis shall be reserved for *Divyang* Candidates (Benchmark Category) and shall be further sub-divided into different categories of *Divyans* as per the GOI rules.

A candidate applying under *Divyang* category must attach a certificate by CMO, District Hospital. However, she/he shall be considered under *Divyang* category only after verification from the University Medical Board, if necessary.



- (d) Vacant seats reserved for SC/ST/OBC candidates, if any, may be filled up as per the GOI/UGC rules. In case in any one of the two categories of candidates viz., SC/ST, the required number of candidates for admission is not available (i.e., the list of respective category has been exhausted), then candidates belonging to the other category (SC or ST as the case may be, if available), shall be called for admission in order of merit so as to make up the deficiency in the required number in any of the aforesaid two categories. This provision shall be applicable to candidates belonging to SC & ST categories only.
- (e) If sufficient number of candidates are not available in OBC category (i.e., OBC category list has been exhausted), such vacant seats shall be transferred to the general category.
- 2.6 Mere appearance in the admission test shall not entitle a candidate to be considered for admission to the Programme unless she/he fulfills the eligibility conditions. Applicants must fully satisfy themselves about their eligibility before filling the application form.
- 2.7 Provisional admission shall be offered to the candidates in order of merit list and the availability of seat in the Programme on the date of admission.
- 2.8 In case there is more than one candidate securing equal ranks as obtained by the last candidate in order of merit in the list of candidates to be called for admission, the following *inter-se* ranking rules of the University shall be applicable.
- In case the candidates have equal/tie ranks then the marks obtained in the qualifying examination shall be the deciding factor and if, that is also same or result of both the candidates is not declared, then a senior candidate on the basis of date of birth shall be given preference. However, in a case of tie rank, if the result of qualifying examination of one candidate is declared then she/he will be given preference, provided she/he fulfills other eligibility conditions. In case of any dispute the decision of the Chairman, UATEC shall be final.*
- 2.9 If the result of the qualifying examination is not declared by a university/board till the date of admission, the mark-sheet of the qualifying examination by a candidate can be submitted on or before 30th September of the admission year. In exceptional cases, further extension may be given by the Competent Authority on cogent reason(s). However, it may be noted that this clause cannot be extended to the candidate(s) whose result is being withheld or not declared by the university/board due to some specific reasons particularly related to the candidate(s). Furthermore, if the result of qualifying examination is not declared by a university/board in general then the aggregate percentage of marks/grades of the completed semesters/years of the qualifying examination (e.g. _____ years/____ semesters of _____ in case of admission in _____) must be not less than the required percentage of marks/grades in the qualifying examination.
- 2.10 At the time of reporting for admission, the candidates are required to be present in person and bring the documents in original as well as a set of photocopy duly attested as notified by the Admission Committee/Controller of Examinations (CoE) from time to time.



- 2.11 A candidate provisionally selected for admission shall be required to fill the prescribed form, submit the required documents, collect her/his admit card or any other equivalent document for admission to the Programme from the office of the Department/School/University after paying the fees on or before a date fixed for the purpose, otherwise the offer made to her/him will automatically stand cancelled.
- 2.12 In case any provisionally selected candidate fails to deposit the fee by the date prescribed, her/his provisional admission shall be cancelled and the seat thus falling vacant shall be offered to the next candidate in order of merit under the specified category.
- 2.13 Notwithstanding anything contained in this ordinance, a candidate who is qualified under the foregoing ordinance for admission to the University, and who is a student of some other Indian University/Institution, shall not be admitted to the University without the production of a Leaving or Transfer Certificate and/or Migration Certificate (as the case may be) issued by the last college/university attended and certifying to the satisfactory conduct of the student mentioning the highest examination she/he has passed. However, in certain cases if the candidates are not in position to submit the Transfer Certificate and/or Migration Certificate and the character certificate at the time of admission, they should submit the same as early as possible, but not later than 30th September of the year of admission in <Name of the Programme> failing which the University reserves the right to cancel their admission. In exceptional cases, further extension may be given by the Competent Authority on cogent reason(s). However, it may be noted that this clause cannot be extended to the candidate(s) whose result is being withheld or not declared by the university/board due to some specific reasons particularly related to the candidate(s).
- 2.14 A waitlisted candidate shall be offered admission strictly on the basis of ranking, provided there is a vacancy in the Programme. Such waitlisted candidates shall have to deposit their fees latest by the date fixed by the Admission Committee/Competent Authority.
- 2.15 The candidates enjoying employed status and selected for admission to <Name of the Programme> Programme in the University, are required to produce Leave Sanction /Relieving Order at the time of Admission/Registration from their employer for the duration of the Programme permitting them to pursue their studies at the University, failing which the offer of admission may stand withdrawn. In case of any dispute the decision of the competent authority shall be final.
- 2.16 The admission of any candidate is liable to be cancelled without giving any further notice forthwith or at any time during the period of the concerned Programme of Study, if it is detected that the candidate has /had produced fake / forged certificate(s) /document(s), indulged in any act of misconduct/indiscipline and has /had concealed any other relevant information at the time of admission.
- 2.17 The admission of the candidate to the <Name of the Programme> Programme shall be subject to such ordinances, rules and regulations as may be framed from time to time by the University.



- 2.18 Foreign students shall be admitted as per the rules of the University.
- 2.18 Only the High Court of Patna shall have jurisdiction in case of any dispute relating to the provisional admission in the Programme.

3. Eligibility Conditions

The eligibility conditions for admission into the <Name of the Programme> Degree Programme shall be as follows:

<As prescribed>

However, the eligibility conditions for admission into <Name of the Programme> Programme and intake of the Programme shall be decided by the University Admission, Teaching and Evaluation Committee (UATEC) from time to time.

4. Medium of Instruction of the Programme:

The medium of instruction and examination shall be English/Hindi for <Name of the Programme> Programme.

5. Programme Fee:

- 5.1 The semester-wise fee structure of <Name of the Programme> Programme is given below:
- 5.2 The mode and schedule of payment of fees shall be decided by the university from time to time.
- 5.3 The fee structure of <Name of the Programme> Programme under Department of <Name of the Department> may be changed by the University prospectively. Such changed fee structure shall be declared in the admission notification of the concerned academic session.

6. Conduct of the Programme:

- 6.1 To qualify for the <Name of the Programme> Degree, a candidate must earn <Number of Credits> credits as contained in the Programme structure/Syllabus of <Name of the Programme> Degree as annexed with this ordinance. This Programme structure/Syllabus is subject to update/change/modify from time to time as prescribed by the Board of Studies (BoS) of the Department and need not to follow the procedure prescribed for updating the ordinances.
- 6.2 A student of the <Name of the Programme> Programme shall not be permitted to seek admission concurrently to any other equivalent or higher degree or diploma examination in this University or any other University, subject to rules/regulations of UGC or equivalent body in this regard and adoption of the same by the University.
- 6.3 The maximum period allowed to complete the <Name of the Programme> Programme will be four years (Eight Semesters).
- 6.4 The Department shall offer courses as per its schedule and available resources and can decide to offer or not to offer a particular course in a particular semester. To earn additional or lesser credits in a semester from the Department than the



prescribed in the syllabus and to earn credits from other Departments/Schools shall be the sole responsibility of the student. S/he has to choose the courses in such a way that it becomes feasible for her/him to earn the credits.

7. Type of Courses:

The <Name of the Programme> Programme of the University has three types of courses, viz., Core courses, Elective courses, and Self-study/Skill-based courses.

7.1 Core courses:

7.1.1. The core courses are those courses whose knowledge is deemed essential for the students registered for the <Name of the Programme> Programme. Where feasible and necessary, two or more Programmes (like, degree, diploma and certificate etc.) may prescribe one or more common core courses.

7.1.2 All the core courses prescribed for <Name of the Programme> Degree Programme offered by the Department of <Name of the Department> under the School of <Name of the School> shall be mandatory for all the students registered in the <Name of the Programme> Programme.

7.1.3 A core course of the Programme may be an elective course for any other Programme.

7.2 Elective courses:

7.2.1 The elective courses can be chosen from a pool of courses (papers). These courses are intended to:

- allow the student to specialize in one or more branches of the broad subject area;
- help the student to acquire knowledge and skills in a related area that may have applications in the broad subject area;
- help the student to bridge any gap in the curriculum and enable acquisition of essential skills (e.g. statistical, computational, language or communication skills etc.); and
- help the student to pursue an area of interest.

7.2.2 Along with the elective courses prescribed for the <Name of the Programme> Degree Programme offered by the Department of <Name of the Department>, a student has to register herself/himself in different elective courses in such a way that she/he ensures earning of minimum eight credits as elective from the other Departments/Schools.

7.2.3 The student may also choose additional elective courses offered by the University to enable her/him to acquire extra credits from the discipline, or across the disciplines. However, up to only 16 credit courses with best grades completed from the other Departments/Schools shall be considered for calculating CGPA of the Programme of study.

7.3 Self-study/Skill-based Courses:

The self-study/skill-based courses are optional, not mandatory. Being non-credit courses, the performance of students in these courses shall be indicated either as “satisfactory” or as “unsatisfactory”, instead of the Letter Grade and this shall not be counted for the computation of SGPA/CGPA. These courses may also be taken



by a student from other Departments/Schools.

Moreover, if the BoS of the Department feels that the Programme of study of <Name of the Programme> requires certain academic backgrounds to pursue the Programme effectively, it may recommend some course(s) without credit(s) to meet the purpose as compulsory part of the syllabus.

Note: A course (Core/Elective/Self-study/Skill-based) may also be offered by the department in the form of a Dissertation, Project work, Practical training, Field work or Internship/Seminar etc.

8. Mobility Options and Credit Transfers:

The students shall be permitted to opt inter-disciplinary and horizontal mobility and can take courses of their choice, learn at their paces, enroll for additional courses, acquire more than the required credits, and adopt an interdisciplinary approach to learning, subject to the provisions made in this ordinance.

- 8.1. A student may be allowed to take course/courses of any other University/Organization/Institution, the courses of whom are duly accredited by the Department of <Name of the Department >/School of <Name of the School > under MoU or otherwise and approved by the Academic Council. (Note: The Department <Name of the Department >//School of <Name of the Department >/ shall try to ensure accreditation of relevant courses of other Universities/Organizations/Institutions including MOOCs and increase the choice basket of <Name of the Programme >/ Programme).
- 8.2. A student availing inter-university mobility shall continue to be a bonafide-student of the University where she/he initially got admission and in case she/he earns credits from a different university, the credits so earned shall be transferred to her/his parent University.
- 8.3. It shall be the responsibility of the student to assess the feasibility and practicality of vertical mobility (across universities), as it doesn't entitle a student to be exempted or relaxed from any of the requisites (sessional, attendance, assignments, end-semester examinations and Programme duration etc.) for the completion of the Programme.
- 8.4. The mobility option should not be interpreted as inter-university migration.
- 8.5. The mobility across the disciplines is also subject to availability of desired elective course, faculty, infrastructure and number of students (as fixed by the University/Department from time to time) opting for that elective course.
- 8.6. The mobility shall be permissible from the Regular Mode Programme to the Regular Mode Programme of learning only, and cannot be replaced by Open/Distance/Online Programme.
- 8.7. A student of some other University shall in any case be admitted only at the beginning of the particular Programme/Course which she/he proposes to take in the University subject to the fulfillment of other conditions.

9. Credits:

A credit defines the quantum of contents/syllabus prescribed for a course and determines



the number of hours of instruction required per week. Thus, in each course, credits are assigned on the basis of the number of lectures/tutorials/laboratory work/field work and other forms of learning required for completing the contents in 15-18 week schedule. 2 hours of laboratory work/field work is generally considered equivalent to 1 hour of lecture.

- (i) 1 credit = 1 hour of instruction per week (1 credit course = 15 contact hours of instruction per semester)
- (ii) 4 credits = 4 hours of instruction per week (4 credit course = 60 contact hours of instruction per Semester)
- (iii) 1 credit = 1 hour of tutorial per week (1 credit course = 15 contact hours of instruction per semester)
- (iv) 1 credit = 2 hours of laboratory work/field work per week (1 credit course = 30 hours of laboratory work/field)

Number(s) of credit(s) assigned to a particular course are mentioned in the detailed syllabus of the courses.

10. Course Coding:

Each course offered by the Department of <Name of the Department> is identified by a unique course code comprising of twelve letters/numbers indicating Programme/level of Programme (first two letters in uppercase), Discipline/Subject (Next three letters in uppercase), Semester (next digit ranging from 1 to 4), Course Number (next three digits starting from 001 for each semester), Nature of Course for the Programme (next letter in uppercase i.e. C = Core Course; E = Elective Course, S = Self-study/Skill course), total number of credits for the course (next two digits starting from 00), respectively.

For example, the course code for second core course of the <Name of the Programme> Programme in the Third semester in the Department carrying 4 credits shall be <eg. MSCSC3002C04>.

Every time when a new course is prepared by the BoS of the Department (merely changing minor content and not the course title shall also be considered as a new course) it shall be assigned a new course code.

However, the University may decide a different course codification pattern for any Programme in future as per the demand of the situation.

11. Duration of the Programme:

The minimum duration for completion of <Name of the Programme> Programme shall be four consecutive semesters (two odd and two even semesters). *The maximum period for completion shall be eight semesters.*

Provided that (i) a semester or a year may be declared by the Controller of Examinations as a zero semester or a zero year for a student if she/he could not continue with the academic work during that period due to terminal illness and hospitalization of longer duration, or due to accepting a scholarship/fellowship,



with due permission of the University, subject to the fulfillment of requirements laid down in this respect by the rules or regulations of the University. Such a zero semester/year shall not be counted for calculation of the duration of the Programme in the case of such a student.

(ii) Hostel and other related facilities shall not be given to a student after completion of minimum duration, i.e., four semesters required for <Name of the Programme> Programme.

12. Student Mentor:

The Department shall appoint a Mentor for each student from amongst the faculty members of the Department. All faculty members of the Department shall function as Student Mentors and shall generally have more or less equal number of students. The Student Mentor shall advise the student in choosing courses and render all possible support and guidance to her/him.

13. Course Registration:

13.1. The registration for courses shall be the sole responsibility of the student. No student shall be allowed to do a course without registration, and no student shall be entitled to any credits in the course, unless she/he has been registered for the course by the scheduled date fixed by the Department/School/University.

13.2. Every student has to register in each semester (in consultation with her/his Student Mentor) for the courses she/he intends to undergo in that semester by applying in the prescribed proforma in triplicate (one copy each for student, for the student's file to be maintained in the departmental office and for the office of the Controller of Examinations), duly signed by her/him, the Student Mentor, the concerned Course Teacher and finally approved by the Head/In charge of the Department of <Name of the Department >, within the deadline notified for the purpose by the Department/School/University.

13.3. Registration done in different courses within the stipulated period of time by a student shall not ordinarily be permitted to be changed. However, in exceptional cases, a student may be allowed by the Head/In charge of the Department of <Name of the Department > to add a course, substitute a course for another course of the same type (elective or self-study/skill-based) or withdraw from a course, for valid reasons by applying on prescribed proforma (in triplicate as mentioned above in 13.2) with the consent of the Student Mentor not later than one week from the last date of course registration in a particular semester. Further, withdrawal from a course shall be permitted only if the courses registered after the withdrawal shall enable the student to earn a minimum of 20 credits. This duly approved change/withdrawal shall be notified by the office of the Department of <Name of the Department> to all concerns like Controller of Examinations, both the Course Teachers etc.

13.4. A student shall register for a minimum of 20 credits and can register for a maximum of 32 credits in a semester unless specified otherwise by the University for a Programme of study.

13.5. If a student registers herself/himself for more elective courses than the prescribed in the Programme, while calculating the Cumulative Grade Point Average (CGPA), only the prescribed number of elective courses for the Programme of study shall be included in the descending order of the grades obtained by her/him



ensuring the presence of minimum 8 and maximum 16 credits from the electives of other Departments/Schools.

- 13.6. A student shall have the option to choose an elective course from other Departments/Schools irrespective of the semester in which the course is offered remaining other conditions same subject to the condition that the course is being offered by the particular Department in that semester. For example, a student of third Semester can opt a course of other Department offered in the first/third semester provided the course is being offered by the particular Department.

14. **Examination and Promotion:**

- (A) The examination of all the courses required for the <Name of the Programme> degree shall be internal in nature and generally consisting of Continuous Internal Assessment and End-Semester Examination. For the preparation of final grade in a particular course, the Continuous Internal Assessment (Formative in nature) and the End-Semester Examination (Summative in nature) shall have the weightage of 30% and 70%, respectively.
- (B) Each course, irrespective of credits assigned to it, shall be evaluated out of 100 points. These points should not be confused with traditional system of marks. The points obtained by a student in a course are indicator of percentage of marks and not the raw marks. Since, the University has adopted the system of grading, hence, the marks shall not be reflected in a grade sheet of a student. However, for wider uses, and if required, the students or the prospective employer or end user may take the following reference for calculating maximum marks and obtained marks for a Programme/Course:

For Maximum Marks –

- 1 Credit Course = 25 marks course
2 Credit Course = 50 marks course
3 Credit Course = 75 marks course
4 Credit Course = 100 marks course
and so on.

For obtained marks –

The obtained points may be converted into marks by taking them as percentage of marks. For example:

- (i) If a student has obtained 80 points in a 4 Credit Course, then it may be converted as: *80 marks out of 100.*
- (ii) If a student has obtained 80 points in a 2 Credit Course, then it may be converted as: *40 marks out of 50.*
- (iii) If a student has obtained 80 points in a 1 Credit Course, then it may be converted as: *20 marks out of 25.*

In such course(s), where direct numerical grades are awarded in place of points, these numerical grades shall be converted into marks by using the following formula:

$$\text{Points in the Course} = \text{Numerical grade in the Course} \times 10$$



However, any change may be recommended in this pattern by the UATEC, from time to time.

14.1. Continuous Internal Assessment:

- 14.1.1 The Continuous Internal Assessment of the students' learning and performance shall be carried out by the Course Teacher(s). Considering the nature of the course, the teacher(s) shall decide the mode of Continuous Internal Assessment, which may include one or more assessment tools, such as student's class performance, assignments, class tests, take-home tests, term paper(s), presentations, oral-quizzes, case studies and laboratory work etc.
- 14.1.2 Each Course Teacher shall design the Continuous Internal Assessment system for the course she/he offers with the approval of the Departmental Committee (DC). This approved design of Continuous Internal Assessment shall be announced to the students of the respective courses at the beginning of each semester by the concerned teacher.
- 14.1.3 Generally, each course shall be taught by one teacher only, who shall maintain all the records related to attendance, teaching and assessment in a systematic manner. In an exceptionally rare case, if a teacher is assisted in teaching by other teacher, the teacher (in-charge of the course) shall be responsible for coordinating teaching and assessment, including award of final grade.
- 14.1.4 In case a student fails to appear in any Continuous Internal Assessment, it will be taken care by the concerned Course Teacher at her/his level.

14.2. End-Semester Examination:

- 14.2.1 Generally, End-Semester theory question paper shall include a limited number of very short answer type questions followed by short and long questions covering the entire syllabus in such a way that the question paper ensures assessing students' knowledge, understanding, application and analysis-synthesis/reflection of the subject. Thus, a standard model format of the End-Semester Examination paper consisting of 70 points shall be as under –
- Section-A: 15 very short questions of 02 points each = 30 points
(Short specific questions covering the entire syllabus to be given which should be answered in approximately 50 words by the examinee).
- Section-B: 04 short questions of 05 points each = 20 points
(05 short questions to be given out of which 04 questions are to be attempted in approximately 200 words by the examinee).
- Section-C: 02 long questions of 10 points each = 20 points
(03 long questions to be given out of which 02 questions are to be attempted in approximately 500 words by the examinee).

However, a different format of the End-Semester question paper for some particular course (e.g., project, dissertation or laboratory/field work etc.) may be prescribed by the Board of Studies (BoS) of the Department which shall come into force only after the approval of the competent authority of the University.

- 14.2.2 The duration of the End-Semester theory examination generally shall be of three hours.



- 14.2.3 The DC shall appoint one or more team(s), as per the need, of preferably three faculty members in each team for moderation of question papers of End-Semester Examinations and communicate the same to the Controller of Examinations. The task of moderation shall be organized by the Controller of Examinations.

The paper setter and the moderator(s) shall ensure and certify that question paper is comprehensive to cover all important topics/themes/course and fit for assessing the mastery of the entire course. They shall also ensure and certify that not more than 10% questions from the previous year question paper have been repeated.

- 14.3 In exceptional cases, depending upon the nature of a particular course, a totally different mode of assessment and evaluation may be prescribed by the BoS of the Department for the course, which shall come into force only after the approval of the competent authority of the University. However, it must be reflected in the detailed syllabus of the course and be available to the students at the beginning of the semester.

- 14.4 Any partial or complete change in the system of examination (Assessment & Evaluation) may be recommended by the UATEC which shall be implemented only after the approval of the competent authority.

- 14.5 A student is required to secure a minimum of 'P' grade in the Continuous Internal Assessment and in the End-Semester Examination, taking together, in a course.

14.6 Making Evaluated Answer-scripts Available to the Students:

- 14.6.1 All the examination answer-scripts shall be made available to the students after evaluation by the respective teachers as per the schedule decided by the concerned teachers or the University. In case of the End-Semester Examination, the evaluated answer scripts shall be made available to the students within 7 days of the last examination for the semester. Thereafter, within a week, all the answer books along with the statement of marks shall be sent by the concerned teacher through her/his Department to the Office of the Controller of Examinations for declaration of the results.

- 14.6.2 If a student is not satisfied with the evaluation of her/his answer script, s/he must submit a written objection to the concerned Head of the Department (offering the course) within 8 days from the last examination for the semester. Such complaint shall be looked after by a panel of three faculty members, including the concerned teacher, to be nominated by the concerned Head of the Department, whose decision shall be final. The revised points, if any, shall be submitted by the panel to the concerned Head of Department who shall further submit it to the Controller of Examinations. This complete process of grievance redressal by the panel and the further submission of marks by the Head of Department, generally, should not take more than 7 days from the date of receipt of the grievance. However, in case of any controversy, the matter shall be referred to the Vice-Chancellor for final decision and action.

- 14.6.3 Once evaluated answer books are submitted to the Controller of Examinations, there shall be no re-evaluation/re-totaling thereafter.



14.7 Letter Grades and Grade Points:

An absolute grading system shall be adopted to grade the students.

- 14.7.1. Under the absolute grading system, points shall be converted to grades based on pre-determined class intervals.
- 14.7.2. In the End-Semester theory or practical examinations, the examiner shall award the points and these points after adding the points of Continuous Internal Assessment shall be further converted into Grades/Grade points in accordance with the provisions of this ordinance.
- 14.7.3. Detail Grade Sheet issued by the Controller of Examinations office at the end of the semester shall carry points /percentage and equivalent grades (numerical and letter) both.
- 14.7.4. The 10-point Grading System, with the Letter Grades as given under shall be followed:

Letter Grade	Numerical Grade Point	Class Interval (in %)
O (Outstanding)	10	Above 90 and \leq 100
A+ (Excellent)	9	Above 80 and \leq 90
A (Very Good)	8	Above 70 and \leq 80
B+ (Good)	7	Above 60 and \leq 70
B (Above Average)	6	Above 50 and \leq 60
C (Average)	5	Above 45 and \leq 50
P (Pass)	4.5	40 to 45
F (Fail)	0	< 40
Ab (Absent)	0	Absent

Note:

- (i) F= Fail, and the students graded with 'F' in a Programme or Course shall be required to re-appear in the examination.
- (ii) The minimum qualifying points for a course shall be 40% (i.e., Letter Grade 'P'/ Numerical Grade 4.5).
- (iii) The students shall have to qualify in the Continuous Internal Assessment and the End-Semester examinations taking together.
- (iv) Before awarding numerical grade to the points obtained in a course, only the total of Continuous Internal Assessment and End-Semester Examination shall be rounded off to remove the decimal point. Thus, no separate rounding off shall be done of the points obtained in different components of Continuous Internal Assessment and End-Semester Examination.
- (v) There shall be rounding off of SGPA/CGPA up to two decimal points.
- (vi) The SGPA/CGPA obtained by a student shall be out of a maximum of 10 points.
- (vii) In order to be eligible for the award of the <Name of the Programme>



Degree of the University, a student must obtain CGPA of <as prescribed> at the end of the Programme.

- (viii) Provided that the student who is otherwise eligible for the award of the <Name of the Programme> Degree but has secured a CGPA of less than 4.50 at the end of the minimum permissible period of semesters may be allowed by the Department to reappear or repeat as the case may be the same course(s) or other courses of the same type in lieu thereof in the extra semesters provided in Clause 11 related to the duration of Programme.
- (ix) The Cumulative Grade Point Average (CGPA) obtained by a student shall be classified into the following division/Class:

CGPA	Class/ Division
Above 9	Outstanding
Above 8 to 9	First Class (With Distinction)
6 to 8	First Class
5.5 to < 6	High-Second Class
5 to < 5.5	Second Class
4.5 to < 5	Third Class

14.8. Re-appear in the End-Semester Examination:

- 14.8.1 Once a student has fulfilled the attendance requirements in a course as per the provisions mentioned in this ordinance but has failed to score minimum grade required to qualify the Course or failed to appear in the End-Semester Examination of the course, may be allowed to re-appear in the End-Semester Examination, in such course, in the extra semesters provided under the Clause 11 on duration of Programme.
- 14.8.2. Such student may avail the chance to re-appear only within the maximum duration of the Programme. The re-appearance shall be permitted only in the End-Semester Examination of the concerned course(s) and the marks obtained by the student in the Continuous Internal Assessment conducted earlier for the particular course(s) shall be carried forward to be added with the marks obtained by her/him in the latest End-Semester Examination of the respective course(s).
- 14.8.3. The re-appear examination of even semesters shall be conducted along with the End-Semester Examinations of even semesters. Similarly, the re-appear examinations of odd semesters shall be conducted along with the End-Semester Examinations of odd semesters.
- 14.8.4. The re-appear examination shall be based on the syllabi of the course in force at the time of initial registration to the course.



14.8.5 A student who is re-appearing for the End-Semester Examination as per the clause 14.8.1 above; can re-appear in the subsequent semester(s), whenever the examination of a particular course is held, on payment of Rs. 2000/- (may be revised time to time by the University) per course in addition to the prescribed semester fee of the semester in which she/he has been promoted/provisionally promoted, if applicable, within the maximum permissible duration for the Programme.

14.8.6 A student who has got the Migration/Transfer Certificate issued from the University shall not be allowed to re-appear in the End-Semester Examination.

14.9 Re-appear in the End-Semester Examination for Improvement of Grade(s):

14.9.1 If a student wishes to improve her/his grade(s) in any course (s), s/he can re-appear in the End-Semester Examination in the subsequent odd/even semester(s), whenever the examination of the particular course(s) is held, on payment of Rs. 2000/- (may be revised time to time by the University) per course in addition to the prescribed semester fee of the semester in which she/he has been promoted/provisionally promoted, if applicable, within the maximum permissible duration for the Programme of study of the student.

14.9.2 A student may improve her/his points/grade by reappearing in the End-Semester Examination of a course as per the provisions of reappearing mentioned above. In such cases points obtained by the student in the Continuous Internal Assessment of the particular course shall be carried forward to the subsequent End-Semester Examination of the course. However, in such case, the points/grades obtained on the basis of latest appeared End-Semester Examination shall be considered for calculation of final CGPA of the Programme.

14.9.3 The re-appear examination of a course for improvement of grade shall be based on the syllabi of the course in force at the time of initial registration to the course.

14.9.4 A student who has got the Migration/Transfer Certificate issued from the University shall not be allowed to re-appear in any examination for improvement of grade.

14.10 Repeating course(s):

14.10.1 A student having attendance shortage in any course may repeat the course by taking re-admission in that course in subsequent odd/even semester(s), whenever the course is being offered, within the maximum permissible duration of the Programme.

14.10.2 If a student repeats a course she/he has to fulfill all the desired requirements afresh including attendance, Continuous Internal Assessment and the End-Semester Examination. In such case the course content shall be based on the syllabi of the course in force at the time of repeat of the course. However, at the time of repeating, if the same course is not being offered by the Department due to any reason, the student may choose any other course of similar nature and credits from the available courses on recommendation of the Mentor and approval of the concerned Head of Department.



- 14.10.3 If a student repeats a course, she/he has to submit a fee of Rs. 3000/- (may be revised time to time by the University) per course in addition to the prescribed semester fee of the semester in which she/he has been promoted/provisionally promoted, if applicable.

14.11 Promotion Rules:

- 14.11.1 A student shall be declared as **‘Promoted’** to the next semester when s/he earns 'P' Grade or above in the last concluded semester examination, maintaining the spirit and pattern of semester system and covering the mandatory components, such as Continuous Internal Assessment and End-Semester Examinations in all the courses for which s/he was registered till date.
- 14.11.2 A student shall be **‘Provisionally Promoted’** to the next semester if she/he secures less than 'P' grade in **maximum three courses** out of the total courses registered by her/him till date.
- 14.11.3 A student shall be deemed as **‘Failed’** in a semester when she/he gets below 'P' Grade in **more than three courses** or does not appear in the End-Semester Examination of **more than three courses**, after fulfilling the attendance requirements as per this ordinance, out of the total courses registered by her/him till date. In such case(s), a student has to re-appear in the End-Semester Examination of the course(s) in subsequent odd/even semester(s) within the maximum permissible duration of the Programme on payment of Rs. 2000/- (may be revised time to time by the University) per course. Since, such student does not need to attend the classes of the course(s) again; the marks of Continuous Internal Assessment obtained by her/him in the course(s) earlier shall be carried forward to be added with the marks obtained by her/him in the latest End-Semester Examination of the respective course(s).
- 14.11.4 A student shall also be deemed as **‘Failed’** in a semester when she/he failed to appear in the End-Semester Examinations of more than three courses due to the attendance criteria mentioned in 18.4 of this ordinance. Such student has to repeat the courses in the subsequent odd/even semester(s), whenever the courses are being offered, within the maximum permissible duration of the Programme, on payment of the prescribed fees as per the clause 14.10.3.
- 14.11.5 Under no circumstances, any student shall be permitted to register in a new course if she/he is having less than 'P' Grade in more than three courses.
- 14.11.6 A student shall be declared to have passed the Programme of study and award of the degree if she/he has secured the required credits with at least 'P' grade.
- 14.11.7 The re-examination of End-Semester Examination of the failed or provisionally promoted students shall be as per the clauses/sub-clauses under 14.8 above. However, only in a case where a student of final semester (within the minimum prescribed duration of the Programme) fails to appear or to achieve 'P' grade in maximum three courses including all backlogs after the result declaration of final semester, the Department may ask the concerned course Teacher(s) to



conduct re-examination of End-Semester Examinations of such course(s) within a month from commencement of the next semester relaxing the condition of odd/even semester as given in 14.8.3 the student shall have to pay a fee of Rs. 2000/- per course.

14.11.8 If a candidate is repeating a course in an academic session, whatever may be the reason, it shall not be counted in the total number of seats and shall not affect the fresh intake of the <Name of the Programme> Programme in that academic session.

14.12 **Minimum Credit Requirements:**

For a two-year <Name of the Programme> Degree Programme, the credit requirements shall be <number of credits> credits, including core and elective courses as prescribed in the detailed syllabus attached with this ordinance and regulations. A minimum of 8 credits and maximum of 16 credits shall be in the form of elective courses from the core/elective courses offered by other Department(s).

15. **Computation of SGPA and CGPA:**

The University shall follow the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

15.1. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student in a particular semester and sum of the number of credits of all the courses undergone by a student in that semester, i.e.,

$$SGPA (S_i) = \frac{\sum (C_i \times G_i)}{\sum C_i}$$

Where, C_i is the number of credits of the i^{th} course and G_i is the grade point scored by the student in the i^{th} course.

15.2. The CGPA is also calculated in the same manner taking into account all the considerable courses as per the provision laid down in this ordinance out of the total courses undergone by a student over all the semesters of a Programme, i.e.,

$$CGPA = \frac{\sum (C_i \times G_i)}{\sum C_i}$$

Where, C_i is the number of credits of the i^{th} course (which is to be considered for the award of the PG Degree) and G_i is the grade point scored by the student in the i^{th} course.

15.3. The SGPA and CGPA shall be rounded off to 2 decimal points.

15.4. Since, the calculation of CGPA is not based on all the courses undergone by the student, rather it is governed by other provisions laid down in this ordinance like, clause 7.2.3, 13.5 etc., the CGPA may differ from the corresponding calculations based on SGPA only.

**16. Illustration of Computation of SGPA and CGPA:****16.1. Illustration for computing SGPA:**

Course	Credit	Grade Letter	Grade Point	Credit Point
Course I	3	A	8	3 x 8 = 24
Course II	4	B+	7	4 x 7 = 28
Course III	3	B	6	3 x 6 = 18
Course IV	3	O	10	3 x 10 = 30
	Total credits for the semester = 13			Total Credit points Earned = 100

Thus, SGPA = $100/13 = 7.69$

16.2 Illustrations for computing CGPA:

Courses Considered for the Award of the Degree	Completed in the month (Year)	Credit	Grade Letter	Grade Point	Credit Point
Course I	Dec 2018	4	A	8	4 x 8 = 32
Course II	Dec 2018	4	B+	7	4 x 7 = 28
Course III	June 2019	4	B	6	4 x 6 = 24
Course IV	June 2020	4	O	10	4 x 10 = 40
		Total credits for the semester = 16			Total Credit points earned = 124

Thus, CGPA = $124/16 = 7.75$

Note: Formula to calculate percentage from CGPA/SGPA = CGPA or SGPA x 10; and formula to calculate percentage to CGPA or SGPA = Percentage/10,

e.g., In case of example mentioned in Table 16.2, the percentage of CGPA = $7.75 \times 10 = 77.50\%$

16.3. Transcript (Format): Based on the above, letter grades, grade points, and the SGPA, the Transcripts/Detail Grades Certificates (DGCs) shall be issued to the candidates for each semester and a consolidated transcript on completion of the Programme indicating the performance in all the courses considered for calculating the CGPA. Along with the CGPA, the percentage of marks obtained in the Programme shall be reflected in this consolidated transcript on the basis of the CGPA. However, this system may be changed by the University at any point of time without prior notice to the stakeholders as per the need.

17. Removal of Student Name from the Programme:

The name of a student falling under any one of the following categories shall automatically stand removed from the rolls of the University:

- (a) A student who has failed to fulfill the minimum grade point requirements



- prescribed for the Programme during the maximum duration of the Programme.
- (b) A student who has already exhausted the maximum duration allowed for completion of the Programme and has not fulfilled the requirements for the award of the degree.
 - (c) A student who is found to be involved in misconduct, forgery, indiscipline or any other objectionable conduct, upon recommendation of the Disciplinary Committee/ Proctorial Board or any other procedure deemed fit by the University.
 - (d) A student who has failed to attend the classes as stipulated under the clause of attendance requirements in this ordinance.

18. Attendance Rules:

- 18.1 A student is required to attend 100% of the classes held in a course in the specific semester in order to be eligible to appear in the End-semester examination of that particular course.
- 18.2 Waiving of attendance-deficit up to a maximum of 25% is permissible to accommodate following situations:
 - (a) Representing the University in any inter-collegiate, inter-University, local, national or international events;
 - (b) Participating in an activity of the University with prior permission of the Competent Authority;
 - (c) Participation in NCC/NSC/NSS Camps duly supported by certificate.
 - (d) Participation in Educational Excursions, which form a part of teaching in any subject, conducted on working days duly certified by the concern Course Teacher/ Head of Department /Dean; and
 - (e) to cover all unforeseen reasons like illness, hospitalization, personal engagements elsewhere or other personal reasons which compel a student to absent herself/himself from attending the classes.
- 18.3 Hence, it shall be mandatory/compulsory to every student to have attendance in 75% classes held in particular course. No waiver, for whatsoever reason, shall be given. Accordingly, no application requesting waiver below 75% attendance shall be entertained by the University. However, a further relaxation up to 10% or the days spent (whichever is lesser) on the basis of situations mentioned under a, b, c and d of Clause 18.2 above (not on the basis of e of Clause 18.2) may be considered by the Vice-Chancellor on the recommendation of the Head/In charge of the Department. In any other situation no appeal can be made for this purpose even to the Vice-Chancellor.
- 18.4 A student, however, shall not be allowed to appear in the End-Semester Examination of the courses which are not covered under above mentioned clauses 18.1, 18.2 and 18.3. Such a student shall be permitted to repeat the courses in the subsequent odd/even semester(s), whenever the courses are being offered, within the maximum permissible duration of the Programme, on payment of the prescribed fees as per the clause 14.10.3. However, in the first semester, for repeating the courses, it shall be mandatory for a student to have minimum 40% attendance in aggregate (taken together all the courses registered by her/him in the semester). If a student does not put in at least 40% of aggregate attendance in the first semester, she/he shall have to leave the Programme without claiming refund of any fees, and her/his admission shall be treated as cancelled.
- 18.5 The attendance of a newly admitted candidate shall be counted from the date of her/his admission/registration or date of beginning of classes, whichever is later.



In the case of promoted candidates, attendance shall be counted from the date on which respective class begins. However, if a new student is admitted late after the commencement of the classes, s/he must get herself/himself registered in the desired courses following the due procedure within 5 working days after the admission failing which her/his attendance shall be counted after 5 working days from the date of admission.

- 18.6 In a case of changed registration as per the clause 13.3 of this ordinance the total classes held for calculating percentage of attendance in the newly registered course for a particular student shall be counted from the fresh registration in that particular course.
- 18.7 Monthly records of attendance of students in each of the courses taught by a teacher is to be prepared and submitted by the concerned teacher to the Office of the Head/In charge of the Department (HoD) and the Controller of Examinations' (CoE) office by the 10th day of the next month after displaying it to the students in the course and taking their signatures. The teacher will keep the original record of attendance with her/him and submit it finally to both the offices with her/his remarks regarding the eligibility of a student for appearing in the end semester examination within three working days after the last class or teaching day in the semester, whichever is later. Any failure in compliance in this matter must be informed by the concerned teacher to the Head of Department and the Controller of Examinations with justification.
- 18.8 There shall be an Attendance Monitoring Committee in the Department under the Chairmanship of the Head or her/his nominee for proper monitoring of attendance records and taking suitable action(s) as per the requirements.

19. Programme Structure:

The <Name of the Programme> Programme shall be of two year duration divided into four semesters. A student is required to earn at least 96 credits within the stipulated time as per the details given in <Annexure--->.

(ANNEXURE WILL CONTAIN THE FOLLOWING ALONG WITH THE DETAILED SYLLABUS)

The Courses and Credit Load (In the provided format along with specific scheme of examination, if any):

20. Power to Relax and Amendments

- 20.1 All the above clauses are subject to the amendments, as and when required, as per the decisions pertaining to rules, regulations and norms of the University Statutory Bodies and other Regulatory Bodies etc. (e.g., NCTE/BCI), from time to time.
- 20.1.1 Notwithstanding what is contained in the foregoing clauses of this ordinance, the Academic Council may, in exceptional circumstances consider at its discretion and for reasons to be recorded, relax any of the provisions except those prescribing CGPA requirements.



21. Notwithstanding anything stated in this ordinance, for any unforeseen issues arising, and not covered by this ordinance, or in the event of differences of interpretation, the Vice-Chancellor may take a decision, after obtaining the opinion/advice, if required, of UATEC. The decision of the Vice-Chancellor shall be final.



**SCHOOLS, DEPARTMENTS AND ACADEMIC PROGRAMMES****1. SCHOOL OF MATHEMATICS, STATISTICS & COMPUTER SCIENCE**

Mathematics, Statistics and Computer Science have played a very important role in building up modern civilization by perfecting all sciences. The vision of the School is to provide quality education and to undertake and support the interdisciplinary research through interaction between Mathematics, Statistics and Computer Science and also with other domains of knowledge. It consists of three departments namely, the Department of Mathematics, the Department of Statistics and the Department of Computer Science. Setting a novel trend in interdisciplinary studies, the three departments under the School are not only educating and training their respective students but also helping other disciplines in their regular as well as special courses by providing relevant skill to solve academic and technical issues.

1.1 Department of Mathematics

The Department of Mathematics (DMTH) was started with the objective of producing trained manpower for undertaking research and teaching in Mathematics and allied branches of basic and applied sciences. The Department is committed to impart high quality education in Mathematics and currently offers a Master's Programme, a Ph.D. Programme and a 4-year Integrated B.Sc.-B.Ed. degree Programme with Mathematics as one of the courses. The Department also supports other departments by offering core and advanced courses in Mathematics. The department has a computer laboratory and all necessary computation facility needed for Mathematics.

1.1.1 Ph.D in Mathematics: Department of Mathematics is currently offering Ph.D. in Mathematics.

List of Courses in Ph.D. Mathematics

Course Code	Course Title	Credits
MTH 901	Research Methodology	4
MTH 902	Tools and Techniques of Research	4
MTH 903	Preparation and Presentation of Research Proposal	4
	Total Credits	12

**1.1.2. M.Sc. / M.A. in Mathematics**

The two-year (four semesters) postgraduate programme aimed to train the student in all the basic fields of Mathematics so as to develop in him/her skill for creative thinking, understanding fundamental concepts of the subject, problem solving and for achieving professional competence in Mathematics. The courses have been designed in such a way that the student will be able to learn the subject in a systematic and methodical manner under the able guidance of the faculty and general environment of the university. There are numerous avenues available to the student after the successful completion of the course. With the wide spectrum of elective courses in the 3rd and 4th semesters a student can opt for a career in research/ teaching/industry. The Programme has following features:

- I. A balanced blend of foundational, core and specialized courses.
- II. Ample scope for enhanced interactive teaching in view of the relatively small student teacher ratio.
- III. Extensive choice of elective courses enabling the student to specialize in various existing and emerging streams of Pure and Applied Mathematics.
- IV. Option to choose some of the open elective courses offered by sister departments such as Statistics and Computer Science.

List of Courses in M.Sc. /M.A. Mathematics (96 Credits)

Course Code	Course Title	Credits
Semester – I		
MSMTH1001C04	Real Analysis	4
MSMTH1002C04	Linear Algebra	4
MSMTH1003C04	Discrete Mathematics	4
MSMTH1004C04	Ordinary Differential Equations and Laplace Transformation	4
MSMTH1005C04	Operation Research	4
	Elective (Out of the Department of Mathematics)	4
Semester – II		
MSMTH2001C04	Complex Analysis	4
MSMTH2002C04	Algebra-I	4
MSMTH2003C04	Topology	4
MSMTH2004C04	Measure and Integration	4
	Elective (Out of the Department of Mathematics)	4
	Elective (from the Department of Mathematics)	4
Semester – III		
MSMTH3001C04	Functional Analysis	4
MSMTH3002C04	Algebra-II	4
MSMTH3003C04	Partial Differential Equation and Fourier Analysis	4
MSMTH3004C04	Numerical Analysis	4
MSMTH3005C04	Project (Part-I)	6
	Project Seminar	2
Semester – IV		
MSMTH4001C04	Project (Part-II)	6
	Project Viva	2
MSMTH4002C04	Probability and Statistics	4
	Elective (from the Department of Mathematics)	4
	Elective (from the Department of Mathematics)	4
	Swayam Course/Elective out of the school	4
Total Credits		96



Elective Basket		
Course Code	Course Title	Credits
Semester – II		
MSMTH2001E04	Mechanics	4
MSMTH2002E04	Calculus of Variations and Integral Equations	4
MSMTH2003E04	Differential Geometry	4
MSMTH2004E04	Graph Theory	4
MSMTH2005E04	Number Theory	4
Semester – IV		
MSMTH4001E04	Fluid Mechanics	4
MSMTH4002E04	Formal Languages and Automata Theory	4
MSMTH4003E04	Numerical Solutions to PDE	4
MSMTH4004E04	Group Theory	4
MSMTH4005E04	Commutative Algebra	4
MSMTH4006E04	Algebraic Number Theory	4
MSMTH4007E04	Introduction to Finite Fields and Coding Theory	4
MSMTH4008E04	Lie Algebra	4
MSMTH4009E04	Operator Theory	4
MSMTH4010E04	Representation Theory Finite Groups	4
MSMTH4011E04	Algebraic Geometry	4
MSMTH4012E04	Spectral Graph Theory	4
MSMTH4013E04	Wavelet Analysis	4
MSMTH4014E04	Mathematical Cryptography	4
SWAYAM Courses		
Course Code	Course Title	
MSMTH40015E04	Probability and Stochastic for Finance	
MSMTH40016E04	Partial Differential Equations for Engineers Solution by Spare	
MSMTH40017E04	Application of Molecular Geometry & Group Theory	
Skill Based/Self-Study Courses (Non-Credit)		
Course Code	Course Title	Credits
MSMTH40018E04	LATEX	Non-credit
MSMTH40019E04	MAT LAB	Non-credit

1.2 Department of Statistics

The Department of Statistics established in 2010, is committed to provide a vibrant and creative learning environment to students willing to make a career in the field of core and interdisciplinary statistics. The academic activities of the Department emphasize deep understanding of fundamental concepts and development of the analytical ability to solve real-life problems. It also encourages students to engage in extra-curricular and co-curricular activities, essential for development, nurturing of team spirit and developing organizational skills.



Classroom teaching of the Department is supported by the continuous evaluation system which is followed to assess the progress of the students. There is a well-equipped computer laboratory with high speed Internet connection and the software's that include Minitab, SPSS, R, MATLAB to work with. There are as many as 50 computer terminals to facilitate the computational requirements. After successful completion of the course, the students can move forward for a career in research / teaching / industry.

1.2.1 Ph.D. in Statistics: The Department of Statistics is currently offering Ph.D. with diverse field of specialization including Bayesian Inference/Modelling and Computations, Survey Sampling Theory and Methods, Demography, Multivariate Techniques, etc.

List of Courses in PhD. Statistics

Course Code	Course Title	Credits
STS 901	Research Methodology	4
STS 902	Tools and Techniques of Research	4
STS 903	Preparation and Presentation of Research Proposal	4
Total Credits		12

1.2.2 M.Sc. in Statistics

The two-year (four semesters) Post-Graduate programme aims at imparting training students in theoretical and applied aspects of Statistics with due emphasis on the computational aspects. The students undergoing the programme are trained in fields like Demography, Statistical Quality Control, Business Analytics, Bayesian Statistics, Survey Sampling, Multivariate Analysis, etc. A student undergoing this programme may also opt for electives offered by the sister departments namely, Department of Mathematics, Department of Computer Science, etc. depending upon his/her interest and aptitude.

List of Courses in M.Sc. Statistics (96 Credits)

Course Code	Course Title	Credits
Semester - I		
MSSTS1001C04	Real Analysis and Linear Algebra	4
MSSTS1002C04	Distribution Theory and Nonparametric Statistics (Open to other Departments of the School of Mathematics, Statistics & Computer Science)	4
MSSTS1003C04	Survey Sampling and National Development Statistics	4
MSSTS1004C04	Statistical Computing	4
MSSTS1005C04	Lab-I	4
MSCSC****/ MSMTH****	Elective-I (from other Departments of the School of Mathematics, Statistics & Computer Science)	4
Total Credits		24



Semester - II		
MSSTS2001C04	Linear Models and Regression Analysis (Open to other Departments of the School of Mathematics, Statistics & Computer Science)	4
MSSTS2002C04	Measure Theory and Probability	4
MSSTS2003C04	Statistical Inference	4
MSSTS2004C04	Lab – II	4
MSSTS2005E04/ MSSTS2006E04	Elective - II	4
MSCSC****/ MSMTH****	Elective - III (from other Departments of the School of Mathematics, Statistics & Computer Science)	4
Total Credits		24
Semester – III		
MSSTS3001C04	Multivariate Analysis	4
MSSTS3002C04	Project (Questionnaire Preparation and Data Collection)	4
MSSTS3003C04	Lab-III	4
MSSTS3004E04 - MSSTS3008E04	Elective - IV	4
	Elective - V	4
	Elective - VI	4
Total Credits		24
Semester - IV		
MSSTS4001C04	Project (Analysis and Report Writing)	4
MSSTS4002C04	Lab-IV	4
MSSTS4003E04 -	Elective - VII	4
	Elective - VIII	4
MSSTS4007E04	Elective -IX	4
MSSTS4008E04 - MSSTS4010E04	Elective- X (SWAYAM)	4
Total Credits :-		24
Grand Total:-		96

Semester-I Elective Basket Open to the Department of Statistics

Course Code	Course Title	Credit
By the Dept. of Mathematics		
MSMTH1005C04	Operations Research	4
By the Dept. of Computer Science *		
MSCSC1051E04	Programming in C	4
MSCSC1052E04	Introduction to IT	4
MSCSC1053E04	Fundamentals of Computer	4
MSCSC1054 E04	Data Structure and Algorithm	4

**Semester-II Elective Basket Open to the Department of Statistics**

Course Code	Course Title	Credit
By the Dept. of Statistics		
MSSTS2005E04	Business Analytics-I	4
MSSTS2006E04	Survival Analysis	4
By the Dept. of Computer Science *		
MSCSC2052E04	Introduction to Data Base	4
MSCSC2053E04	Modeling and Simulation	4
MSCSC2054E04	Image Processing	4
MSCSC2055E04	Artificial Intelligence	4
MSCSC2056E04	Design and Analysis of Algorithm	4

* Likely to vary list of courses

Semester-III Elective Basket Open to the Department of Statistics

Course Code	Course Title	Credit
By the Dept. of Statistics		
MSSTS3004E04	Stochastic Processes	4
MSSTS3005E04	Bayesian Inference	4
MSSTS3006E04	Business Analytics-II	4
MSSTS3007E04	Nonlinear Models	4
MSSTS3008E04	Spatial Data Analysis	4

Semester-IV Elective Basket Open to the Department of Statistics

Course Code	Course Title	Credit
MSSTS4003E04	Design of Experiments	4
MSSTS4004E04	Categorical and Directional Data Analysis	4
MSSTS4005E04	Time Series and Forecasting	4
MSSTS4006E04	Statistical Processes and Quality Control	4
MSSTS4007E04	Demography	4

Semester-IV SWAYAM Courses - Elective Basket Open to Department Statistics

Course Code	Course Title	Credit
MSSTS4008E04	Distribution Free Methods	4
MSSTS4009E04	Econometric Analysis	4
MSSTS4010E04	Probability and Stochastic for Finance	4

Elective Basket Open to the Dept. of Mathematics and the Dept. Of Computer Science

Course Code	Course Title	Credit
Semester-I		
MSSTS1002C04	Distribution Theory and Nonparametric Statistics	4
MSSTS-****	Computer Intensive Statistical Methods-I **	4
Semester-II		
MSSTS2001C04	Linear Models and Regression Analysis	4
MSSTS-****	Computer Intensive Statistical Methods-I I **	4

**Elective Basket Open to other Schools**

Course Code	Course Title	Credit
Semester-II		
MSSTS-****	Organizing and Visualizing Data *	4

**** Open to all other Departments.**

List of Skill Based/Self Study Courses³ (Non-Credit)

Course Code	Course Title	Credit
MSSTS-****	Latex	Non-credit
MSSTS-****	R-programming	Non-credit
MSSTS-****	Computer Based Data Graphing	Non-credit

1. The field survey under paper entitled Project in Semesters III & IV shall be conducted in villages.
2. One of the SWAYAM course (Statistics)- Distribution Free Methods, Econometric Analysis, and Probability and Stochastic for Finance, may be opted by students as the Elective-X during Semester-IV.
3. The skill based/Self-study courses-Latex, R-programming and Computer Based Data Graphing have been designed to enhance students' skills in scientific typing and computer based statistical analysis and presentation.

1.3 Department of Computer Science

The Department of Computer Science is currently offering Ph.D. and M.Sc. in Computer Science. It aims at developing high quality workforce in technical education and research in the area of Computer Science and Information Technology for future Nation building. The department also offers several attractive training and workshop programmes along with industry tie up according to the market need.

1.3.1 Ph.D in Computer Science: Department of Computer Science is currently offering Ph.D. in Computer Science.

List of Courses in Ph.D. Computer Science

Course Code	Course Title	Credit
CSC 901	Research Methodology	4
CSC 902	Tools and Techniques of Research	4
CSC 903	Preparation and Presentation of Research Proposal	4
Total Credits		12

1.3.2 M.Sc. in Computer Science

The two-year (four semesters) Postgraduate Programme has been designed to focus on the theoretical concepts as well as on practical knowledge and industry interaction. The exercises/assignments/projects given to students ultimately enable them to become independent quality professionals and researchers. The programme has the following salient features:

- Designed to take students through rigorous ground-work for taking up research, or coming out industry ready.



- Sound foundation in the fundamentals of Computing, Mathematical and Statistical sciences.
- Ample technology orientation via laboratory-intensive courses.
- Students work for six months project in reputed research and training institutes.
- Rich (open) elective course basket providing plenty of space for inter-disciplinary knowledge acquisition required by several emerging areas.

List of Courses in M.Sc. Computer Science (96 Credits)

Course Code	Course Title	L-T-P	Credits
First Semester			
MSCSC1001C04	Operating Systems	3-1-0	4
MSCSC1002C04	Data Structure and Algorithms	3-1-0	4
MSCSC1003C04	Computer Networks	3-1-0	4
MSCSC1004C04	Data Structure Lab	0-0-4	4
MSCSC*****	Elective – I (Within Dept.)	-	4
*****	Elective – II (Outside Dept.)	-	4
Total Credits			24
Second Semester			
MSCSC2001C04	Database Management System	3-0-1	4
MSCSC2002C04	Object Oriented Programming Methodology	3-0-1	4
MSCSC2003C04	Software Engineering	3-1-0	4
MSCSC*****	Elective – III (Within Dept.)	-	4
MSCSC*****	Elective – IV (Outside Dept.)	-	4
*****	Elective – V (SWAYAM/Within Dept.)	-	4
Total Credits			24
Third Semester			
MSCSC3001C04	Artificial Intelligence	3-1-0	4
MSCSC3002C04	Design & Analysis of Algorithms	3-1-0	4
MSCSC3003C04	Data Mining	3-1-0	4
MSCSC*****	Elective -VI (Within Dept.)	-	4
MSCSC*****	Elective-VII (Within Dept.)	-	4
*****	Elective-VIII(Within Dept.)	-	4
*****	Skill Based Course / Self Study / Non-Credit	-	Non-Credit
Total Credits			24
Fourth Semester			
MSCSC4001C24	Project in Industry/Institute	-	24
Total Credits			24



Elective Basket (Within Department)
1st Semester Elective Basket (Within Department)

Course Code	Course Title	Credits
MSCSC1001E04	Digital Logic and Design	4
MSCSC1002E04	Modeling and Simulation	4
MSCSC1003E04	Statistical Methods	4
MSCSC1004E04	Introduction to Microprocessors	4
2nd Semester Elective Basket (SWAYAM) (Within Department)		
Course Code	Course Title	Credits
MSCSC2001E04	Computer Organization	4
MSCSC2002E04	Natural Language Processing	4
MSCSC2003E04	Distributed Systems	4
MSCSC2004E04	Computer Graphics	4
MSCSC2005E04	Internet Technologies	4
MSCSC2006E04	Mobile Networks	4
MSCSC2007E04	Wireless Sensor Networks	4
MSCSC2008E04	Next Generation Networks	4
MSCSC2009E04	Compiler Design	4
*****	Introduction to Internet of Things	4
*****	Cloud Computing	4
*****	Information Security-I	4
3rd Semester Elective Basket (SWAYAM) (Within Department)		
Course Code	Course Title	Credits
MSCSC3001E04	Big Data	4
MSCSC3002E04	Machine Learning	4
MSCSC3003E04	Advanced Computer Networks	4
MSCSC3004E04	Cryptography and Network Security	4
MSCSC3005E04	Nature Inspired Computing Methods	4
MSCSC3006E04	Software Testing	4
MSCSC3007E04	Software Project Management	4
MSCSC3008E04	Soft Computing	4
MSCSC3009E04	Digital Image Processing	4
List of skill based / self-study courses (Non-Credit)		
Course Code	Course Title	Credits
MSCSC3001S00	Communication Skills	Non-Credit
MSCSC3002S00	Latex	Non-Credit
MSCSC3003S00	Socket Programming using Python	Non-Credit
Elective Basket (Outside Dept./ Outside School)		
Course Code	Course Title	Credits
MTH***	Discrete Mathematics	4
MTH***	Linear Algebra	4
STS***	Distribution Theory and Nonparametric Statistics	4
STS***	Computing Intensive Statistical Methods - I	4
2nd Semester Elective Basket (Outside Department) (Outside School)		
Course Code	Course Title	Credits
MTH***	Formal Languages and Automata Theory	4
MTH***	Numerical Analysis	4
MTH***	Graph Theory	4
MTH***	Number Theory	4



MTH***	Mathematical Cryptography	4
MTH***	Operation Research	4
STS***	Stochastic Processes	4
*****	Swachcha Bharat Abhiyan	4
*****	Disaster Management	4
*****	Intellectual Property Rights	4
*****	Consumer Affairs	4
Elective Basket for School 1st Semester - List of Courses Open for School		
Course Code	Course Title	Credits
MSCSC1051E04	Programming in C	4
MSCSC1052E04	Introduction to IT	4
MSCSC1053E04	Fundamentals of Computers	4
MSCSC1054E04	Introduction to Data Structure and Algorithms	4
2 nd Semester - List of Courses Open for School		
Course Code	Course Title	Credits
MSCSC2051E04	Programming in C++	4
MSCSC2052E04	Introduction to Database System	4
MSCSC2053E04	Introduction to Modeling and Simulation	4
MSCSC2054E04	Introduction to Digital Image Processing	4
MSCSC2055E04	Introduction to Artificial Intelligence	4
MSCSC2056E04	Introduction to Design & Analysis of Algorithms	4





2. SCHOOL OF PHYSICAL & CHEMICAL SCIENCES

2.1 Department of Physics

Department of Physics, under the umbrella of School of Physical & Chemical Sciences, has been providing support to the undergraduate programs of Central University of South Bihar (CUSB) since its inception. The M.Sc. Degree Program in Physics was launched from the academic session 2018-19 with the intake of 35 students. In addition, from the upcoming session 2019-20, the department is going to start the Ph.D. programme in various frontier areas of Physics.

The Department of Physics is committed to engage in high quality research and in the pursuit of excellence in teaching. The faculty members of the department are actively involved in cutting-edge theoretical and experimental research in challenging areas. To promote interdisciplinary research for solving grand challenges facing our society, the department has established both intra-university as well as inter-institutional collaborations with laboratories in India and overseas.

2.1 Ph.D. in Physics

The broad areas of research in the department of Physics are hard/soft condensed matter physics, nanoscience and nanotechnology, and materials science. In due course we will also open research areas related to computational physics, theoretical biophysics, spectroscopy and space physics. All the students will be required to successfully complete a course work before beginning the research towards their Ph.D. thesis. The tentative course work structure, subjected to the approval from the Board of Studies, is as follows:

Course Code	Course Title	Credits
Core	Research Methodology	4
Core	Theoretical and Experimental Techniques of Physics Research	4
Core	Review, Report and Seminar	4
Elective	Computational and Numerical Methods	4
Elective	Advanced Condensed Matter Physics	4
Elective	Materials Science / Nanoscience / Physics of Surfaces and Interfaces	4

2.2 M.Sc. in Physics

The objectives of this program are to cater and to meet the needs and aspirations of contemporary M.Sc. Physics students. It is tailored to incorporate the essential ingredients of multifaceted education and research for this rapidly changing world. This program aims to (i) provide the much needed and strong foundation in Physics so that students can develop the ability to apply the knowledge of Physics in any allied fields, (ii) help students to develop programming proficiency with high end software for both computation and automation, (iii) give students an opportunity to use advanced laboratory equipment to get acquainted with



them, (iv) present a platform to students for training in both mechanical and electronic hardware for basic and applied research, and (v) offer necessary soft skills to students to build their professional career.

List of Courses in M.Sc. Physics (96 Credits)

Paper Code	Course Title	Credits		
		L	T	P
Semester - I				
MSPHY1001C04	Mathematical Physics – I	4	0	0
MSPHY1002C04	Classical Mechanics	4	0	0
MSPHY1003C04	Electronics	4	0	0
MSPHY1004C04	General Physics Lab. – I	0	0	4
MSPHY1005C04	Electronics Lab. – I	0	0	4
MSPHY1006E04	Experimental Techniques	4	0	0
MSPHY1007E04	Advanced Optics	4	0	0
Total Credits		28		
Semester - II				
MSPHY2001C04	Thermodynamics and Statistical Mechanics	4	0	0
MSPHY2002C04	Classical Electrodynamics and Relativity	4	0	0
MSPHY2003C04	Quantum Mechanics – I	4	0	0
MSPHY2004C04	General Physics Lab. – II	0	0	4
MSPHY2005C04	Electronics Lab. – II	0	0	4
MSPHY2006E04	Advanced Electronics	4	0	0
MSPHY2007E04	Materials Science			
Total Credits		28		
Semester - III				
MSPHY3001C04	Quantum Mechanics – II	4	0	0
MSPHY3002C04	Optics Lab. – I	0	0	4
MSPHY3003E04	Condensed Matter Physics	4	0	0
MSPHY3004E04	Atomic & Molecular Physics	4	0	0
MSPHY3005E04	Quantum Chemistry, Spectroscopy & Photochemistry (Swayam Course)	4	0	0
MSPHY3006E04	Nanoelectronics	4	0	0
MSPHY3007E04	Quantum Chemistry and Biophysics	4	0	0
MSPHY3008E04	Project	0	0	4
Total Credits		32		
Semester - IV				
MSPHY4001C04	Mathematical Physics – II	4	0	0
MSPHY4002C04	Optics Lab. – II	0	0	4
MSPHY4003E04	Nuclear and Particle Physics	4	0	0
MSPHY4004E04	Computational Physics	4	0	0
MSPHY4005E04	Magnetism and Thin Film Technology	4	0	0
MSPHY4006E04	Plasma Physics and Space Physics	4	0	0
MSPHY4007E04	Project	0	0	4
Total Credits		28		

Out of the two courses MSPHY3004E04 and MSPHY3005E04, the student can take only one course.



2.2 Department of Chemistry

The Department of Chemistry under the School of Physical and Chemical Sciences forms a key component of the university. The department is composed of dynamic faculty members and research scholars who are actively engaged in knowledge creation and dissemination at the frontiers of the Chemical Sciences. The discipline has an encompassing effect on the biological and physical sciences and therefore considered a central science. Knowledge and skills in chemistry play a crucial role in finding the solutions to most of the challenges (eg. energy, disease, and environment) faced by the mankind today. The department believes in interdisciplinary approach of learning and fosters a culture of excellence. Undergraduate students of chemistry have been nurtured and mentored well to compete at the national and international levels (eg. selection for the summer research fellowships of National Academies of Sciences, award at National Science Film Festival and more...). The postgraduate programme was launched from the last academic session in 2018-19. Going stronger with the research component, Ph.D. programme is being started from this new academic session in 2019-20. The department envisages scaling greater heights with the launch of Ph.D. programmes and producing globally competent chemists who can solve the pressing problems of the nation.

Laboratory Facilities & Resources



There are two laboratories in the department. Each lab is spacious enough to accommodate 40 students at a time. There are six working platforms (island tables) and four fumehoods fitted with inlet & outlets for water, LPG and nitrogen to perform the experiments. The lab is equipped with the sophisticated instruments, glassware, plasticware, chemicals & other lab peripherals. The sophisticated instruments available in the labs are as follows

- UV-Visible absorption spectrophotometer
- UV-Vis-NIR absorption spectrophotometer
- Digital pH Meter
- Digital Conductivity meter,
- Digital Thermometer
- Ultrasonicator
- Ice-Flaker
- Magnetic Stirrer cum hot plate (ceramic top)
- Incubator & Shaker



- Circulating water bath with temperature control (5°C to 80 °C)

FTIR and Luminescence spectrometers are in advanced stages of procurement and are likely to be installed in the upcoming session 2019-20

2.2.1 Ph.D. in Chemistry

The faculty members and students of the department are engaged in cutting edge research at the frontiers of science. The launch of Ph.D. programme in the upcoming academic session in 2019-20 will further strengthen and institutionalize the culture of research and innovation. The department follows an interdisciplinary approach and offers diverse areas of research which include nano-chemistry, materials chemistry, organic synthesis, medicinal chemistry, photochemistry, catalysis etc. To further encourage the interdisciplinary research, the department has established inter-institutional links and collaborations with renowned laboratories and universities. During the programme, students will acquire new skills while working on state-of-the-art instruments in the department. The ultimate aim of the programme is to produce globally competent chemists who can critically think and analyse a problem, and develop innovative scientific solutions. Equipped with sound knowledge and lab skills, the doctoral students would be able to address some of the biggest scientific challenges facing the mankind today such as energy crisis, lighting & displays, sanitation, diagnostics & therapeutics and many more. The successful completion of the Ph.D. programme will ensure enhanced employability and the students are likely to get positions of eminence in leading research and academic institutions in India as well as abroad.

List of Courses in Ph.D. Chemistry (Tentative)

Course Code	Course Title	Credits
Core	Research Methodology	4
Core	Tools and Techniques of Chemistry Research	4
Core	Seminar Presentations	4
Elective	Advanced synthetic organic chemistry: Asymmetric synthesis and catalysis	4
Elective	Research Trends in Chemistry-I	4
Elective	Research Trends in Chemistry-II	4

2.2.2 MSc. in Chemistry

The programme is for the students who have an interest in chemistry and a desire to explore the frontiers of science. This is a unique programme that combines core chemistry (Organic, Inorganic and Physical) with Nano Chemistry and Green Chemistry. Along with thorough grounding in chemistry, it equips the students with the knowledge and skills in the emerging interdisciplinary area of green nanotechnology which has now become a crucial requirement for the sustainable development globally. Computational Chemistry and Medicinal Chemistry have also been incorporated to equip the students better. The programme follows choice-based credit system (CBCS) where students have the liberty to choose courses from the elective baskets of our department or other departments. The students also have the freedom to choose a few online courses through SWAYAM (Study Webs of Active –Learning for Young Aspiring Minds) portal which further enhances learning. The programme envisages creating good bench strength of future scientists who can solve a wide range of issues and contribute to



the scientific advancement of the nation. There is ample opportunity and employability of chemists having sound knowledge, analytical skills and hand-on training on the sophisticated instruments. The chemical industry is India's one of the largest manufacturing sectors and plays an integral role in the country's economic development. The Indian chemical sector currently accounts for 13-14% of total exports. In terms of volume of production, it is the twelfth-largest in the world and the third-largest in Asia. Currently, the per capita consumption of products of the Indian chemical industry is one tenth of the world average, which reflects the huge potential for further growth. The "Make in India" scheme has further given a fresh impetus to this sector. For a sustainable, environment friendly growth, the sector is looking for new technologies that incorporate green chemistry and nanotechnology and there lies the exciting and excellent career opportunities for young chemists. Besides chemical industry, the training imparted in the interdisciplinary area of green nanotechnology will also enable the students to diversify and join other sectors such as energy, photovoltaics, photonics, biosensing and healthcare etc. The curriculum has been designed to keep abreast with changing times. In the long run, the programme is likely to produce globally competent chemists with bright innovative ideas. By understanding the nuances of chemistry, these young scientists would be creating new tools, products and technologies to address some of the world's biggest challenges such as (just to name a few) clean affordable energy, biomedical devices and drugs for treating diseases, biosensing and environmental remediation etc.

List of Courses in M.Sc. Chemistry (96 Credits)

Course Code	Course Title	Credits
Semester-I		
MSCHE1001C04	Group Theory, Bonding and Metal-Ligand Equilibrium	4
MSCHE1002C04	Bonding, Stereochemistry and Reaction Mechanism (I)	4
MSCHE1003C04	Basic Concepts of Physical Chemistry	4
MSCHE1004C04	Inorganic Chemistry Lab	4
Departmental Elective	One or more courses to be selected from the elective basket for odd semesters	4
Open Elective (Inter-School or Inter-Department or)	One or more courses to be selected from the elective basket for odd semester	4
Semester-II		
MSCHE2001C04	Photochemical and magnetic properties of complexes and nuclear chemistry	4
MSCHE2002C04	Reaction Mechanism (II), Pericyclic and Photochemical Reactions	4
MSCHE2003C04	Quantum Mechanics and Statistical Thermodynamics	4
MSCHE2004C04	Physical Chemistry Lab	4
Departmental Elective	Two or more courses to be selected from the elective basket for even semesters	4
Semester-III		



MSCHE3001C04	Carbohydrates, Hetrocyclic Compounds, Organometallic Reagents and Synthetic methods	4
MSCHE3002C04	Project-I and Scientific Activities	2+ 2 = 4
MSCHE3003C04	Organic Chemistry Lab	4
Departmental Elective	Two or more courses to be selected from the elective basket for odd semesters	4
Open Elective (Inter-School or Inter-Department or SWAYAM)	One or more courses to be selected from the elective basket for odd	4
Semester-IV		
MSCHE4001C12	Project-II	12
Departmental Elective	Three or more courses to be selected from the elective basket for even semesters	4

List of Electives Courses (Minimum 40 Credits[#])

Course Code	Course Title	Credits
Elective-Basket for Semester (Odd Semester1 st)		
At least one elective has to be chosen.		
MSCHE1001E04	Supramolecular Chemistry	4
MSCHE1002E04	Chemistry of Biomolecules	4
MSCHE1003E04	Green Chemistry I: Solvents & Synthesis	4
MSCHE2001E04	Solid State and Structural Chemistry	4
MSCHE2002E04	Advanced Instrumental Techniques-I	4
MSCHE2003E04	Green Chemistry II: Catalysis	4
MSCHE2004E04	Nucleoside, Advances in Nucleic Acid and Proteins	4
MSCHE2005E04	Chemistry of Natural Products	4
MSCHE3001E04	Atom Dynamics in Solid and Advanced Magnetochemistry	4
MSCHE3002E04	Surface Phenomena, Chemical Dynamics and Spectroscopy	4
MSCHE3003E04	Chemistry of Materials	4
MSCHE3004E04	Advanced Photochemistry	4
MSCHE3005E04	Medicine and Agrochemicals	4
MSCHE3006E04	Nano Chemistry	4
MSCHE4001E04	Reaction mechanism, Organometallics and Advanced Bioinorganic Chemistry	4
MSCHE4002E04	Applications of spectroscopy techniques to inorganic systems	4
MSCHE4003E04	Advanced Inorganic Materials	3+1 = 4
MSCHE4004E04	Dynamic Stereochemistry, reagents and Retrosynthetic analysis	4
MSCHE4005E04	Medicinal, combinatorial and Organometallic reagents in Organic synthesis	4
MSCHE4006E04	Spectroscopy and catalysis in Organic synthesis	3+1 = 4
MSCHE4007E04	Advanced Quantum Mechanics and Surface Chemistry	4



MSCHE4008E04	Applied Electrochemistrty	4
MSCHE4009E04	Lasers in Chemistry	4
MSCHE4010E04	Green Energy Systems	4
MSCHE4011E04	Advanced Instrumental Techniques-II	4





3. SCHOOL OF EARTH, BIOLOGICAL AND ENVIRONMENTAL SCIENCES



3.1 Department of Biotechnology

The Department of Biotechnology is currently offering Ph.D. and M. Sc. Biotechnology programmes. These Programmes include well-designed theory and practical courses. Innovation-based training is the key to train students with a special emphasis on understanding the basic as well as modern concepts in biological processes for pursuing research in frontier areas of Biological Sciences. The Postgraduate Programmes equip students with deep theoretical as well as practical understanding of different aspects of Biological processes and promote them to take on an integrative approach for their studies and research.

Biotechnology has emerged as a major thrust in the field of science and technology having potential to boost the economy of several countries including India. The voice of global Biotechnology in 21st century is to transfer the bio-based technology from “Lab to Land and from Bench to Business” to bring the cost of bio-based commodities within the reach of common man. The courses in Department of Biotechnology are mainly related to recent and emerging trends in Biology but the students are also taught Biostatistics and Bioinformatics which enable them to analyse their data, draw meaningful conclusions and publish in reputed journals. The Programme equally gives emphasis on integrated approaches in the basic and applied biology viz. Olfaction, human health, recombinant DNA technology, transgenic development, bioremediation and informatics. Students work directly with faculty on real-world projects, gaining hands-on skills necessary to solve emerging problems.



Currently, departmental research is mainly focussed in the areas of Cancer Biology, Autoimmune Diseases, Fungal Diseases, Lung Physiology, Behavioural and molecular Neuroscience, Immunology, Genetic Engineering, Stem Cell Therapy, Proteomics, Molecular Biology, Signal Transduction, Interferon (IFNs) Transcription Factors, Biochemistry of Fungal Pathogens and Genesis of Secondary Metabolites as well as Genetic manipulations of Plants which include Plant Tissue Culture and Molecular Marker Developments. Apart from above advantages, M.Sc. Biotechnology Programme prepares the students to be the leaders in research, policy and business.

The department of Biotechnology is equipped with state-of-the-art technology and equipment that provide a stimulating environment for teaching and research. The department of Biotechnology is actively involved in research by having the distinction of running more than 10 externally funded R & D projects sanctioned from various Government agencies.

3.1.1 Ph.D. in Biotechnology

The Department of Biotechnology is currently offering PhD with diverse field of specializations including Neurobiology, Cancer Biology, Plant Biotechnology, Bioremediation, Infection Biology, Stem cell Biology, and Immunology.

The syllabus was framed with a great care so that the theory, practical and tutorials would meet the requirement of such a challenging and demanding field. Innovation-based training is the key to train students with a special emphasis on understanding the basic as well as modern concepts in biological processes for pursuing research in frontier areas of Biological Sciences.

Department of Biotechnology equip researchers with deep theoretical as well as practical understanding of different aspects of Biological processes and promote them to take on an integrative approach for their studies and research. The students are well trained for both dry and wet-lab techniques enabling them to better suit for different research laboratories and industries which look for personnel well-taught in programming languages, can do molecular modelling and also have abilities to work on bench producing raw data to analyse further using various Biotechnology tools.

Thrust Areas of Research for Ph.D. Biotechnology

- Neuroscience
- Cancer Biology
- Plant Biotechnology
- Bioremediation
- Infection Biology
- Stem cell Biology
- Immunology
- Biopolymers



List of courses in Ph.D. Biotechnology

Course Code	Course Title	Credits
Semester - I and II		
CBS 901	Fundamentals of Research Methodology	4
CBS 902	Scope and Techniques of Research in Biological Sciences	4
CBS 903	Preparation and Presentation of Research Proposal	4
Total Credits		12

3.1.2 M.Sc. in Biotechnology

The two year (four semesters) Post-Graduate Programme has interdisciplinary approach with participation of faculties/researchers across the University with **Choice based Credit System (CBCS)**. Hands-on training with professional and management skills are keys to our teaching pedagogy. This Programme focuses on responsibility building and ethics in research and policy. We are equally giving emphasis on integrated approaches in human health, transgenic crop development, environmental sciences and informatics. The course also comprises of project dissertation, presentation and comprehensive viva-voce as part of evaluation system. Students also visit major research institutes in the form of educational tour and Biotechnology industries to learn various aspects of product developments. One of the major goals of the Biotechnology Programme is to engage students by actively involving them in cutting-edge research.



Salient Features of Programme For International Students:

- 1) Central University of South Bihar was established in the year 2009 under the Central Universities Act, 2009 (Section 25 of 2009), Government of India. The university is funded federally.
- 2) It is situated in its permanent campus at Gaya (Bihar) the well-known Buddhist pilgrimage city.
- 3) Foreign students will have better benefit/cost ratio compared to universities at their country.



- 4) At CUSB, we have internationally acclaimed group of faculty members with several years of research experience in reputed labs across the world.
- 5) Biotechnology program has well equipped laboratory.
- 6) The faculty members have many national and international research collaborations.
- 7) We have research funding from various funding agencies.
- 8) Our MSc. Biotechnology programme is based on Choice Based Credit System

Facilities and Resources in the Biotechnology Laboratory:

Biotechnology Laboratory is equipped with state of the art technology and equipment that provide a stimulating environment for teaching and research. The list includes multiple Biosafety Cabinets, Laminar Air Flow, Autoclave, Water bath with wide temperature ranges, Dry Block Heater (Heating Block), Rotatory Shaker, Stackable Incubator Shaker, Cell Sonicator, Many types of Microscopes (Fluorescence, Inverted, Compound and Normal), various types of refrigerated Centrifuges, Nano Drop UV/VIS Spectrophotometer, ELISA Plate Reader, Spectrophotometer, Gradient Thermal Cycler, Real-Time PCR, UV/VIS Transilluminator, Gel Documentation Systems, Electrophoresis units (Horizontal and Vertical), Blot Transfer System, Deep Freezers (-200 C and -860 C), Ice-Flakes Machine, Cryo-Can, Lyophilizer, Complete Milli-Q Water System etc. Facilities for animal, plant and microbial culture work are also available.



List of Courses in M.Sc. Biotechnology (102 Credits)

Course Code	Course Title	Credits		
		L	T	P
MSBTN1001C04	Cell Biology & Genetics	3	1	0
MSBTN1002C04	Biomolecules & Biochemistry	3	1	0
MSBTN1003C04	Instrumentation: Tools & Techniques in Biotechnology	3	1	0
MSBTN1004C04	Bioinformatics and Biostatistics*	3	0	1
MSBTN1005C04	Lab 1 related to MSBTN1001C04 + MSBTN1002C04+ MSBTN1003C04	0	1	3
MSBTN2001C04	Molecular Biology and Genomics	3	1	0
MSBTN2002C04	Microbiology	3	1	0
MSBTN2003C04	Basic Enzymology	3	1	0
MSBTN2004C04	Biology of Immune System	3	1	0
MSBTN2005C04	Lab 2 related to MSBTN2001C04+ MSBTN2002C04	0	1	3
MSBTN2006C04	Lab 3 related to MSBTN2003C04+	0	1	3



	MSBTN2004C04			
MSBTN2007C02	Summer training**	0	0	2
MSBTN3001C04	Recombinant DNA Technology	3	1	0
MSBTN3002C04	Bioprocess Engineering	3	1	0
MSBTN3003C04	Animal Biotechnology	3	1	0
MSBTN3004C04	Plant Biotechnology	3	1	0
MSBTN3005C04	Lab 4 related to MSBTN3001C04+ MSBTN3002C04	0	1	3
MSBTN3006C04	Lab 5 related to MSBTN3003C04+ MSBTN3004C04	0	1	3
MSBTN4001C16	Project Dissertation, Presentation and Comprehensive <i>Viva-voce</i>	0	2	14
Total Credit for Core Course		86		

* Will be offered by other Department

** The student has to find summer training opportunity on their own.

Elective Courses

Course Code	Course Title	Credits		
		L	T	P
MSBTN1001E04	Biodiversity and Ecobiotechnology***	3	1	0
MSBTN1002E04	Metabolism and Metabolic Engineering	3	1	0
MSBTN2001E04	Applied Immunology and Enzyme Technology***	3	1	0
MSBTN2002E04	Neurobiology***	3	1	0
MSBTN3001E04	IPR, Bioethics and Biosafety****	3	1	0
MSBTN3002E04	Techniques in Molecular Diagnostics and stem Cell Technology	3	1	0
MSBTN4001E04	Cancer Biology***	3	1	0
MSBTN4002E04	Neurodegenerative Diseases***	3	1	0
Total Credit for Elective Course		16		

*** Can be offered to other Dept. within school

**** Can be offered to other School

Skill Courses (Non-Credits)

Course Code	Course Title	Credits		
		L	T	P
MSBTN4001S02	<i>Drosophila</i> Techniques	1	0	1
MSBTN4002S00	Village Based Skills	0	0	0
MSBTN4003S00	Field and Excursion Tour	0	0	0

Swayam/Self Study Based Courses (Non –Credits)

Course Code	Course Title	Credits		
		L	T	P
MSBTN1001S02	Introductory Mathematical Methods for Biologists			
MSBTN2001S02	Bio-energetics of Life Processes			
MSBTN3001S02	Principles of Downstream Techniques in Bioprocess			
MSBTN4004S02	Human Molecular Genetics			



3.2 Department of Life Science

The discipline of Life Science covers several areas of Biological Sciences including Biochemistry, Microbiology, Molecular Biology and Environmental Science related to “Life in Diversity”. It has a good balance of animal and plant sciences which broaden the student’s knowledge and capabilities and they have diverse teaching in each of the semesters, as and when it is announced. This is compulsory; otherwise the examination result of that student shall be withheld. The Postgraduate Programmes equip students with deep theoretical as well as practical understanding of different aspects of Biological processes and promote them to take on an integrative approach for their studies and research. The department of Life Science is equipped with state-of-the-art technology and equipment that provide a stimulating environment for teaching and research. The department of Life Science is actively involved in research by having the distinction of running funded projects sanctioned from various Government agencies. In Department of Life Science, students from different sciences are also inducted to study life sciences.

Facilities & Resources in Life Science Programme

The list of equipment includes various research facilities of modern biology such as Animal and Plant tissue culture, Proteomics, Hybridoma, Recombinant DNA technology. The laboratory is fortified with instruments like Automated shakers, Inverted and Upright Bright-field and Phase contrast Microscopes, Fluorescence Microscope, Incubators, Laminar Flow hoods, UV-Visible spectrophotometer, Autoclave, Refrigerated Centrifuge, -80°C Deep Fridge, Cryocan, Millipore Water Purification system, Thermal cyclers, Microtome, FPLC system and 2D electrophoresis system. The laboratory focused on various fields of basic and applied biology like agricultural crop improvement, development of immunoassays, stress physiology and molecular biology of plants, parasite biology, physiology/endocrinology etc.





Extensive infrastructure facilities have been created in the form of newly constructed computer lab, and classrooms, which is equipped with latest computers of high configuration having Intel i-7 Quad Core processors. All computers are connected with high band-width of 1 GBPS Internet Connection.

3.2.1 Ph.D in Life Science: Department of Life Science is currently offering Ph.D. in Life Science

List of Courses in Ph.D in Life Science

Course Code	Course Title	Credits
LSC 901	Fundamentals of Research Methodology	4
LSC 902	Scope and Techniques of Research in Biological Sciences	4
LSC 903	Preparation and Presentation of Research Proposal	4
Total Credits		12

3.2.2 M.Sc. in Life Science

The two year (four semesters) Post-Graduate Programme has interdisciplinary approach with participation of faculties/researchers across the University with Choice based Credit System (CBCS). Master of Science in Life Science is designed to give opportunity to learn modern biological techniques and provide conducive environment to understand basic and applied fields of biological sciences such as genetic engineering, immunology, recombinant DNA technology, protein crystallography, neurobiology and microbiology etc. This platform nurtures student's thinking to observe, analyse, interpret and utilize the biological techniques and phenomena in basic as well as applied fields. Different modes of teaching are adopted to train students. Presentations, assignments, experimental proof of theories, field observation, data analysis and computer applications in biology are few methodologies, which are being applied for teaching. To engage a student's mind in the course, a continuous evaluation method is being followed. In addition, credits scores area also assigned for summer internship to utilize vacations and provide students laboratory exposure.

List of Courses in M.Sc. in Life Science (96 Credits)

First Semester (Total Credits =24Cr.)				
Course Code	Name of Courses	Credits		
<i>Core Credit (20 Cr.)</i>		L	T	P
MSLSC1001C04	Cell Biology	3	0	1
MSLSC1002C04	Biochemistry	3	0	1
MSLSC1003C04	Genetics	3	0	1
MSLSC1004C04	Methods in Biology	3	0	1
MSLSC1005C04	Microbiology	3	0	1
<i>One Elective Course (4Cr.)</i>				



Second Semester (Total Credits =26Cr.)				
Course Code	Name of Courses	Credits		
<i>Core Credit (16 Cr.)</i>		L	T	P
MSLSC2001C04	Metabolism	3	0	1
MSLSC2002C04	Molecular Biology	3	0	1
MSLSC2003C04	Recombinant DNA Technology	3	0	1
MSLSC2004C04	Molecular Enzymology	3	0	1
MSLSC2005C02	Summer Internship (External / Internal)	0	0	2
<i>Two Elective Course (4×2=8Cr.)</i>				

Third Semester (Total Credits =24Cr.)				
Course Code	Name of Courses	Credits		
<i>Core Credit (20 Cr.)</i>		L	T	P
MSLSC3001C04	Developmental Biology	3	0	1
MSLSC3002C04	Physiology of Plant System	3	0	1
MSLSC3003C04	Physiology of Animal System	3	0	1
MSLSC3004C04	Biology of Immune System	3	0	1
MSLSC3005C04	Dissertation	0	0	4
<i>One Elective Course (4Cr.)</i>				
Fourth semester (Total Credits =22 Cr.)				
Course Code	Name of Courses	Credits		
<i>Core Credit (18 Cr.)</i>		L	T	P
MSLSC4001C18	Dissertation	0	0	18
<i>One Elective Course (4Cr.)</i>				

Elective Baskets

Elective Code	Name of Courses	L	T	P
MSLSC1001E04	Plant Genetic Engineering	2	1	1
MSLSC2001E04	Structural Biology	3	1	0
MSLSC3001E04	Stress Biology	2	1	1
MSLSC4001E04	Biochemistry of proteins	2	1	1
MSLSC4002E04	Human Genetics and Genome Analysis	2	1	1

All Elective courses may not be offered at any given time. An elective will run if opted by 33% of the students enrolled in the programme.

Inter department core/elective course and related practical may be opted by a student from school

Skill Based Courses (Non Credits)

The Life Sciences course includes several excursions. This work finishes in an independent project to study and map an area chosen by the student. Many of the field excursions take place out of term time, so students must be available outside term.



Course Code	Name of Courses	L	T	P
MSLSC4001S00	Experimental Design their own research project	0	0	0
MSLSC4002S00	Health and safety - Laboratory and field (Swachh Bharat Mission)	0	0	0
MSLSC4003S00	Local village fieldwork and farming system	0	0	0

Swayam course (Non Credits)

Course Code	Name of Courses	L	T	P
MSLSC1001S00	Proteins and Gel-Based Proteomics	0	0	0
MSLSC1002S00	Principles of Downstream techniques in Bioprocess	0	0	0
MSLSC1003S00	Fundamentals of optical and scanning electron microscopy	0	0	0
MSLSC4004S00	Sustainable River Basin Management	0	0	0
MSLSC4005S00	Artificial Intelligence: Search Methods for Problem Solving	0	0	0

Anytime during the entire coursework, Educational/Industrial tour or Excursion may be made to visit institutes/ industries/ laboratories based on availability of funds or otherwise. If excursion takes place, student has to submit a report (10 marks) within a week that will be the part of continuous assessment of a specific course.

** In addition, students are encouraged to take non-credit courses of their specific interests in other Science Centre/Programme of CUSB.*

** The M.Sc. dissertation work should be taken place for one year after allotment of supervisor.*

3.3 Department of Bioinformatics

The post-genomic era has seen Biology grow from a 'soft' discipline to a 'hard' one. This has initiated a scientific revolution driven by Genomics and Bioinformatics. Bioinformatics is a rapidly growing field of study that centres around at the interface of Biology and Information Technology. The **Bioinformatics** Department consists of courses like Biology, Computer Science, Statistics, Mathematics and Physics. The students are trained for both dry and wet-lab techniques enabling them to better suit for different research laboratories and industries which look for personnel well-taught in programming languages, can do molecular modelling and also have abilities to work on bench producing raw data to analyse further using various Bioinformatics tools.



3.3.1 Ph.D. in Bioinformatics

The **Department of Bioinformatics** is currently offering PhD with diverse field of specializations including Molecular Modelling and Simulation, Computer Added Drug Designing (CADD), Functional Genomics, Biological Database and Server development. The programme train researchers with deep theoretical as well as practical understanding of different aspects of Biological processes and promote them to take on an integrative approach for their studies and research. The students are well trained for lab techniques enabling them to better suit for different research laboratories and industries which look for personnel well-taught in programming languages, can do molecular modelling and also have abilities to work on bench producing raw data to analyse further using various Bioinformatics tools.

Thrust Areas of Research: Protein modelling and Simulation, Computer Added Drug Designing (CADD), Data mining, Evolutionary analysis, Biological Database and Server development, Transcriptome and proteome analysis, System Biology, X-ray crytallography and structure biology, Free energy perturbation, Big Data analysis and Machine Learning in Biology.

List of Courses in PhD. Bioinformatics

Course Code	Course Title	Credit
BIS 901	Research Methodology	4
BIS 902	Tools and Techniques of Research	4
BIS 903	Preparation and Presentation of Research Proposal	4
	Total Credits:	12

3.3.2 M.Sc. Bioinformatics

Bioinformatics is a rapidly growing field of interdisciplinary study at the interface of biology and Information technology. As such, Bioinformatics brings together Molecular biology with areas from Statistics, Mathematics, and Computer science. Bioinformatics now entails the creation and advancement of databases, algorithms, computational and statistical techniques, and theory to solve formal and practical problems arising from the management and analysis of biological data. Considering the interdisciplinary nature of Bioinformatics, this master programme shall have a major component from related subjects under one umbrella.

Objectives

The core objective of the programme is to provide quality education to the graduates, who want to pursue their career in the emerging areas of Bioinformatics and Computational Biology.



- To serve as a nodal point for Bioinformatics and its applications
- To provide industry interface to the students for research project
- To build skilled manpower for drug design and pharmaceutical industry



List of Courses in M.Sc. Bioinformatics

Course Code	Course Title	Credits		
		L	T	P
Semester- I				
Core Courses		L	T	P
MSBIS1001C04	Introduction to Bioinformatics	2	1	1
MSBIS1002C04	Cell and Molecular Biology	3	1	0
MSBIS1003C04	Mathematics and Statistics with R	2	1	1
MSBIS1004C04	Linux and Shell Programming	2	1	1
MSBIS1005C04	Programming with C	2	1	1
One elective course of 4 credits from parent or other department				
MSBIS1006S00	Plantation of Trees	Non- credit		
Total Credits				24

Student may choose any related course/elective including wet laboratory practicals during semester I and II from other department.

Course Code	Course title	Credits		
		L	T	P
Semester- II				
Core Courses		L	T	P
MSBIS2001C04	Algorithms in Bioinformatics	3	0	1
MSBIS2002C04	Biomolecular Modelling & Simulations	3	0	1
MSBIS2003C04	Programming with Perl	2	1	1
MSBIS2004C04	Genetics and Genomics	3	1	0
MSBIS2005C04	Evolution and Molecular Phylogeny	3	1	0
One elective course of 4 credits from parent or other department				
MSBIS2006S00	Swachh Bharat Abhiyan	Non- credit		
Total Credits				24

Students wish to go for summer training (non-credit) may join the same at the end of II semester and present work done during summer training within one week of the commencement of semester III.

Experts from industry / alumni placed at various institutions may be called for guest lecture and interaction to get update on requirement in industry.



Educational/Industrial tour or Excursion may be made to visit institutes/industries/laboratories based on availability of funds or otherwise. If excursion took place, student has to submit a report (10 marks) within a week that will be the part of continuous assessment of a specific course decided by faculty council.

Course Code	Course title	Credits		
Semester -III				
Core Courses		L	T	P
MSBIS3001C04	Chemoinformatics and Drug Design	3	0	1
MSBIS3002C04	Transcriptomics and Proteomics	3	0	1
MSBIS3003C04	DBMS and Web Technology	2	1	1
MSBIS3004C04	Minor Project (Review of Literature, Seminar, and Research Problem Definition)	4		
Two elective courses of 8 credits from parent or other department				
MSBIS3005S00	Village based Skills	Non- credit		
MSBIS3006S00	Human Molecules Genetics (SWAYAM Course)	Non- credit		
Total Credits		24		

Course Code	Course title	Credits		
Semester - IV				
MSBIS4001C24	Dissertation	24		
Total Credits		24		

Student would have choice to carry out dissertation internally or externally.

Course Code	Course title	Credits		
Elective Courses				
		L	T	P
MSBIS1001E04	Biochemistry and Immunology	3	1	0
MSBIS2001E04	Whole exome sequencing data analysis	3	0	1
MSBIS3001E04	Big Data Analytics and Health Informatics	4	0	0
MSBIS3002E04	Programming with Python	2	1	1
MSBIS3003E04	Systems Biology	2	1	1

C: Core Course; E: Elective Course; S: Self-study/Skill Course

An elective will run if opted by 33% of the students enrolled in the programme.

Inter department elective: Any theory course and related practical may be opted by a student from school

Inter school course: MSBIS1004C04, MSBIS1005C04, MSBIS3003C04

Skill based course: MSBIS1001C04, MSBIS1005C04, MSBIS2002C04, MSBIS2003C04, MSBIS3001C04, MSBIS3003C04.

Laboratory Facilities & Resources

Extensive infrastructure facilities have been created in the form of newly constructed computer lab, which is equipped with latest computers of high configuration having Intel I-7 Quad Core processors. All computers are connected with high band-width Internet connection powered by 1 Gbps NKN backbone. The lab also has many HP, Dell, Fujitsu & Tyrone work stations for high performance computing.



3.4 Department of Environmental Science

The Department offers M.Sc. and Ph.D. Programme in Environmental Science which revolves around multidisciplinary and integrated study of the Earth, Atmospheric, Biological and Chemical processes and their linkages with developmental perspectives for attaining a sustainable environment. The focus includes complex interactions between the different components of nature (between and beyond disciplinary boundaries), impact on food security and associated ecosystem services in the immediate and long-term perspectives, besides environmental monitoring and management.

Environmental Science Laboratory

The department is equipped with environmental science laboratory for high end research and teaching purposes. The well-equipped wet laboratory is meant for carrying out experimentation and research in Ecology, Biomanipulation and biocontrol, Biogeochemistry, Pollution monitoring and control, Environmental Engineering, Environmental biotechnology and microbiology, Ecotoxicology, Soil sciences, Solid Waste management and many others. Important equipment of environmental science laboratory are Atomic Adsorption Spectrophotometer (AAS), UV-Vis-spectrophotometer, CHNS analyzer, Ion chromatograph, Automated solvent extractor, Gas Chromatograph (GC), Gas Chromatograph Mass Spectroscopy (GCMS), Kjeldahl nitrogen assembly, Microwave digestion system, Rotary Evaporator, Flame photometer, Incubator shaker, BOD incubator, Respirable dust sampler.

The dry laboratory carries research on Climate Modelling, Monsoon Studies, Climate Change, Remote Sensing and others. The laboratory includes high speed IBM/HP (Unix/Linux servers), Regional Climate Models (PRECIS, WRF, RegCM4), Climate data analysis tools, IPCC models outputs, GIS software ArcGIS10.2 are available for weather and climate modeling studies.

3.4.1 Ph.D. in Environmental Science

List of Courses in Ph.D. in Environmental Science

Course Code	Course Title	Credits
ESC 901	Research Methodology	4
ESC 902	Tools and Techniques of Research	4
ESC 903	Preparation and Presentation of Research Proposal	4
Total Credits		12

3.4.2 M.Sc. Environmental Science

The two-year (four semesters) Postgraduate Programme is designed to provide necessary knowledge and skills to postgraduate students, so that they can learn to analyze and assess environmental systems and problems; be able to propose sustainable solutions and contribute



to the development of policies and strategies for environmental planning. The major thrusts of the programme are:

1. To study natural resources, the impacts of human activities thereon and the implications of environmental degradation on human development.
2. Natural Processes in the Environment, which focus on the natural processes such as the Atmospheric, Biogeochemical, Ecological and Hydrological processes
3. The Human Dimension of Environmental Change: to understand the determinants of the growth of populations and economies, and how this growth results in demand for natural resources, leading to scarcity, pollution and risks for human health
4. Analytical Tools in Environmental Science: basic tools for analyzing environmental issues, such as data collection and analysis and modelling of air, water, soil and biological systems.

List of Courses in M.Sc. Environmental Science (96 Credits)

Sl. No.	Course Code	Course Title	Credits	Theory (Cr.)	Practical/ Project/ Hands in Experience (Cr.)
Semester –I (Total credit-24)					
Core Course (Credit-20)					
1.	MSESC1001C04	Environmental Biology	4	3	1
2.	MSESC1002C04	Water Pollution: Causes, Consequences and Control	4	3	1
3.	MSESC1003C04	Environmental Chemistry	4	3	1
4.	MSESC1004C04	Environmental Geosciences	4	3	1
5.	MSESC1005C04	Field Work (Visit of Industry, Nature reserves/ interpretation Centre/ National Park, Protected Areas)	4	4	0
6.	----	Basic Biology*	Non credit		
7.	----	Basic Mathematics*	Non credit		
Elective Course (Credit-04)					
8.	MSESC1006E04	Introduction to Environmental Sciences	4	4	0
9.	MSESC1007E04	Social and Developmental Perspectives	4	3	1
Semester –II (Total credit-24)					
Core Course (Credit-20)					
10.	MSESC2001C04	Environmental Impact Assessment	4	3	1
11.	MSESC2002C04	Energy and Environment	4	3	1
12.	MSESC2003C04	Natural Resources and their Management	4	3	1
13.	MSESC2004C04	Air Pollution: Causes, Consequences and Control	4	3	1
14.	MSESC2005C04	Atmospheric Science & Climate	4	3	1



Change					
Elective Course (Credit-04)					
15.	MSESC2006E04	Analytical Methods	4	3	1
16.	MSESC2007E04	Disaster Management	4	3	1
Semester –III (Total credit-24)					
Core Course (Credit-08)					
17.	MSESC3001C04	Research Methodology	4	3	1
18.	MSESC3002C04	Dissertation	4	4	0
Elective Course (Credit-16)					
19.	MSESC3003E04	Restoration Ecology	4	3	1
20.	MSESC3004E04	The Science and Practice of Sustainable Development	4	3	1
21.	MSESC3005E04	Environmental Policies, Laws and Ethics	4	3	1
22.	MSESC3006E04	Solid Waste Management	4	3	1
23.	MSESC3007E04	Environmental Economics	4	4	0
24.	MSESC3008E04	Bio-geo chemical cycles	4	3	1
25.	MSESC3009E04	Eco-toxicology and Environmental Health	4	3	1
26.	MSESC3010E04	Environmental Modeling	4	3	1
Semester –IV (Total credit-24)					
Core Course (Credit-08)					
27.	MSESC4001C08	Dissertation	8	8	0
Elective Course (Credit-16)					
28.	MSESC4002E04	Environmental Biotechnology	4	3	1
29.	MSESC4003E04	Biodiversity and Conservation Biology	4	3	1
30.	MSESC4004E04	Microbial Ecology	4	3	1
31.	MSESC4005E04	Industrial Environment Management	4	3	1
32.	MSESC4006E04	Environmental Entrepreneurship	4	3	1
33.	MSESC4007E04	Soil Science	4	3	1
34.	MSESC4008E04	Statistical Methods and Computer Applications	4	3	1
35.	MSESC4009E04	Remote Sensing and GIS	4	3	1



List of Elective courses

Sl. No.	Course Code	Course Title	Credits
Elective Course			
1.	MSESC4002E04	Environmental Biotechnology	4
2.	MSESC4003E04	Biodiversity and Conservation Biology	4
3.	MSESC3003E04	Restoration Ecology	4
4.	MSESC3004E04	The Science and Practice of Sustainable Development	4
5.	MSESC4004E04	Microbial Ecology	4
6.	MSESC3005E04	Environmental Policies, Laws and Ethics	4
7.	MSESC3006E04	Solid Waste Management	4
8.	MSESC4006E04	Environmental Entrepreneurship	4
9.	MSESC3007E04	Environmental Economics	4
10.	MSESC3008E04	Bio-geo chemical cycles	4
11.	MSESC4007E04	Soil Science	4
12.	MSESC1006E04	Introduction to Environmental Sciences	4
13.	MSESC1007E04	Social and Developmental Perspectives	4
14.	MSESC3009E04	Eco-toxicology and Environmental Health	4
15.	MSESC4008E04	Statistical Methods and Computer Applications	4
16.	MSESC4009E04	Remote Sensing and GIS	4
17.	MSESC3010E04	Environmental Modelling	4
18.	MSESC2007E04	Disaster Management	4

List of Skill based courses

Sl. No.	Course Code	Course title	Credits
1.	MSESC1002C04	Water Pollution: Causes, Consequences and Control	4
2.	MSESC3004E04	The Science and Practice of Sustainable Development	4
3.	MSESC3006E04	Solid Waste Management	4
4.	MSESC4005E04	Industrial Environment Management	4
5.	MSESC4006E04	Environmental Entrepreneurship	4
6.	MSESC4009E04	Remote Sensing and GIS	4

*Basic Biology / Basic Mathematics are non credit bridge courses, this will be offered to those who wish to refresh the basics of Mathematics/ Biology to cope up with the requirements of M.Sc. Environmental Sciences.



SWAYAM

20% of the total credits (96) can be earned from outside centres i.e. either SWAYAM or courses being offered within University (CUSB). These earned courses shall be booked under elective courses. The core courses are compulsory for all students admitted in M.Sc. Environmental Science programme.

The list of SWAYAM courses will be announced in the beginning of 2nd & 3rd Semester. Students may earn required credits from the prescribed list. The Centre Committee (CC) may approve, other courses also brought by students from the SWAYAM platform as the case may be.

Eligibility for open course:-

1. The student shall be enrolled in PG /masters programmes of CUSB.
2. Only for students having Bachelor of Science degree.

