



Dr. Shyama Prasad Mukherjee University, Ranchi
Following Up-graded Ranchi College

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INFORMATION BROCHURE

Followed CBCS Pattern

Master of Information Technology (M.Sc. I.T.)

Under Post Graduate Department of Mathematics

Dr. Shyama Prasad Mukherjee University, Ranchi



Vice-Chancellor's Desk

MY VISION FOR DR. SHYAMA PRASAD MUKHERJEE UNIVERSITY, RANCHI

Dr. Shyama Prasad Mukherjee University, Ranchi is a synthesis of a legacy of 92 years of hard work, dedication and incomparable team work in the area of academic excellence that incessantly worked together under the banner of DSPMU, Ranchi.

Hardly a year ago, that is, on Tuesday, April 11, 2017, this college was upgraded as a Unitary State University under RUSA Program. I find myself privileged enough to serve this institution earlier as a Professor and now a Vice-Chancellor. Knowing its fabric from interior to exterior, I know the responsibility that we have to shoulder on together in coming years is high.

As we have become the cynosure of academic arena of the state, we know that we have to carve out a niche for ourselves. We aspire to turn it into the most sought-after University of Central India. Also, we have to be ready to cater the massive pool of the students in coming years. To march ahead with all gravity maintaining the centripetal force attached with its legacy and let the University levitate towards zenith, we set forth the following goals:

1. To expand not only in infrastructure but also in setting the curriculum as such based on multi-disciplinary branches of education maintaining the local, national and International requirements.
2. To delve deep into Research and development, promoting original research and making it a hub of internationally acclaimed human resources.
3. Making it digitally equipped, culturally rooted, globally connected.
4. Creating an ambience for learning by digitally equipped library, smart classroom teaching, digitally equipped Seminar Halls.
5. Creating an atmosphere where students learn to intermingle with society and disseminate their knowledge in community development.
6. Promoting original researches in Tribal and Regional Languages and opening up School of Comparative Studies in the coming years.
7. Promoting an atmosphere for extension activities and taking up institutional social responsibilities.

8. Infusing entrepreneur and leadership temperament among students, making them career-oriented instead of job-oriented.
9. Promoting 100 % e-literacy consisting of syllabi promoting e-commerce literacy and e-governance basic intricacies.
10. Producing a generation next who would be professionally trained not only in soft or technical skills; rather they shall be trained in life-skills too, which in turn shall promote a spiritually sublime society full of inner happiness and creativity.
11. Making a global atmosphere where students from all corners of India and abroad shall make it a global potpourri of academic excellence.

ABOUT UNIVERSITY:

Situated on the tropic of cancer, at an altitude of 651m from sea level amidst tropical flora and fauna, Ranchi College, Ranchi (now upgraded as a Unitary State University and known as Dr. Shyama Prasad Mukherjee University, Ranchi) had been established during the Pre- Independent India. Established in 1926 as a Government Intermediate College, it marched ahead and began Under-Graduate and post-graduate Courses in various subjects of Arts/Science in the year 1946.

Even after Independence, Ranchi College continued to celebrate its recognition as Government College. Till the creation of Ranchi University, Ranchi on 12th July, 1960, it functioned as a Unit of Patna University, imparting quality Higher Education in faculties of Humanities, Science and Social Science.

And, the Growth and Expansion continued

Following the creation of Ranchi University, Ranchi on Saturday, July 12th, 1960, Ranchi College had been placed as a Unit of Ranchi University by the then Government of Bihar. Meanwhile, a new 28th state of India, Jharkhand was carved out of the Southern part of Bihar on November 15, 2000. Now the pressure was high on it. And, it took the responsibility well. Based on its performance, the UGC accorded it the status of an “Autonomous College” in 2009. Also, it had been recognized by the UGC as “College with Potential for Excellence”. This primer college of the Capital has set its mood and it never looked back.

And, on Tuesday, April 11, 2017 Ranchi College, Ranchi scripts a history and is upgraded as Unitary University, named as **Dr. Shyama Prasad Mukherjee University, Ranchi**

MISSION:

As distinct from Traditional Academic Courses, the Vocational Educational Programme i.e. B.Sc. Computer Application (Hons.), B.Sc. Information Technology (Hons.), B.Sc. Electronics (Hons.), B.Ed. Course,

Amanat Survey Course, GIS, B.Sc. & M.Sc. in Environmental Science, LL.M., MCA and Master of Information Technology Course. DSPMU Ranchi with the following Mission :

- To impart education with a view to provide not only knowledge but also skills
- To provide appropriate orientation to education for commensurate employment opportunity.
- To bring about greater linkage between general education and employment oriented education and to enable students to apply their knowledge of Theory, Techniques and Practice to achieve their personal and organizational goals.
- To impart intensive training and promote skill to increase prospects of employment.

GOALS AND OBJECTIVES:

The Department of M.Sc.IT aims to:

- Make available opportunity for career development to provide academic instructions and practical training in the field of IT.
- Identify high growth sectors and set up facilities to meet future requirements of trained manpower in these sectors.
- Provide training facilities in those areas where special skills are required for efficient performance of the Job. Provide an opportunity to learn job skills in an actual work-place environment.
- Experiment with innovative teaching techniques and analyze the results in a continue effort to improve teaching standards.
- Set up a Career Guidance Service to facility career choice through information dissemination counselling and training.

DOCUMENTS TO BE SUBMITTED ALONG WITH THE APPLICATION FORMAT THE TIME OF ADMISSION:

Candidates are directed to submit photocopy of the following documents / certificates duly certified by the Competent Authority along with the Application Form & to bring all the Originals for further Verification at the time of Admission, if selected:

1. Admit Card of Final Year Examination at Graduation level.
2. Marks- sheet of Graduation, if passed.
3. Caste & Income Certificate (Income Certificate Validity is only for 06 (Six) Months from date of issue) ST/SC/OBC issued by Competent Authority.
- 4 Red Card for BPL Applicant.

NUMBER OF SEATS:

Number of Total Seats for the M.Sc.IT Course is 50 (Fifty). There is also Special Provision of 2 (Two) Additional Seats for BPL (Below Poverty Line) Candidates.

COURSE FEE:

Tuition for **General, OBC, ST, SC** Fee **Rs. 20,000/- per semester** for all categories of students, the Competent Authority may enhance the Semester Fee during the Course if needed or based on the decision taken in finance committee.

RESERVATION:

Reservation Policy is adopted as per the Govt. of Jharkhand Directives.

GUIDELINE FOR ADMISSION:

- (i) Pre-requisites and Duration of the Course M.Sc.IT is a Two Year (4 Semesters) Course. The Eligibility Criterion for the Admission to the M.Sc., IT Course will be a B.SC/ BCA/ B.Com/ B.A. Degree or an Equivalent Degree with Mathematics as one of the Main Subjects at Graduation level. The Students must have at least 45% marks at the Graduation level to be eligible to apply for Admission to the M.Sc. IT Course. Each Semester is of Six Months duration. Subject spectrum with Periods and Credits may be seen on last page of the Prospectus. The Curriculum will incorporate Course covering Information Technology, Business Management and Mathematics, 1st Semester will start tentatively from 1st week of August every year.
- (ii)
 - (A) An aspirant for Admission must appear at the Centralized Entrance Test conducted by P-G Department of Mathematics & MCA, DSPMU, Ranchi.
 - (B) The Centralized Entrance Test will be organized by the P-G Department of Mathematics & Master of Computer Application of the University.
 - (C) The Centralized Entrance Test will consist of a Written Test of One Hours Duration of 100 Marks. The Questions of Centralized Entrance Test are of Objective Type. The Questions of the Test are mainly based on Graduation level. The Syllabus will be made up of components taken from Degree Syllabus.
- (iii) Admission shall strictly be taken according to the Merit List prepared on the basis of the Centralized Entrance Test / Interview.
 - a = Score of Entrance Test reduced to the Scale of 75
 - b = Score of Career : 15 Marks. It will be calculated on the following basis.

Division / Class	1 st	2 nd	3 rd
Matriculation	5	3	1
Intermediate	5	3	1
Degree	5	3	1

c = Maximum Marks in Personality Test Interview shall be – 10 (Ten)

SYLLABUS FOR MASTER OF INFORMATION TECHNOLOGY:

1. That the 'academic year' means the period extending from the first day of June in a year to the thirty-first of May in the next succeeding year. The word year when used without limitation means a calendar.
2. That an academic year shall have ordinarily two semesters and each semester shall have at least 90 working days.
3. That the Master of Information Technology (M.Sc. IT) is a two program me spread over four semesters.
4. That there shall be 12 theory papers and 4 laboratory papers. Out of the 12 papers, 10 shall be in information technology and 2 in electives.

The subjects of the core and elective papers are as under

Core Subjects

1. Introduction to information Technology.
2. Database Management System.
3. Data Structure through C
4. Object Oriented Design & Programming
5. Software Engineering
6. Operating System
7. Computer Communication & Network
8. Advance Java Programming
9. Data Mining and Warehousing
10. Python

List of Electives

1. Distributed Database
2. Machine Learning
3. Parallel Computing
4. Optimization Techniques
5. Artificial Intelligence System
6. Cloud Computing
7. Web Technology
8. Internet of Things

5. That the M.Sc. (Information Technology) programme shall follow the semester pattern of instruction and examination and shall the following distribution of marks and the course structure.

FIRST YEAR STUDY

Semester – I

Course Code	Paper	Scheme of Instruction Periods/ week	scheme of Examination Maximum marks in		Paper Credit
			End Sem. Exam	Sessional Work	
MIT 1001	Introduction to Information Technology	4	75	25	3
MIT 1002	Database Management System	3	75	25	3
MIT 1004	Data Structure Through C	3	75	25	3
MIT 1004L	Laboratory on Data Structure through C	2	20	25	2

Semester- II

Course Code	Paper	Scheme of Instruction Periods/ week	scheme of Examination Maximum marks in		Paper Credit
			End Sem. Exam	Sessional Work	
MIT 2001	Object Oriented Design and Methodology	4	75	25	3
MIT 2002	Software Engineering	3	75	25	3
MIT 2003	Operating System	3	75	25	3
MIT 2001L	Laboratory on C++	2	50	25	2

Semester -III

Course Code	Paper	Scheme of Instruction Periods/ week	scheme of Examination Maximum marks in		Paper Credit
			End Sem. Exam	Sessional Work	
MIT 3001	Computer Communication & Network	4	75	25	3
MIT 3002	Advance Java Programming	3	75	25	3
MIT 3003	Elective I	3	75	25	3
MIT 3002L	Laboratory on Advance Java Programming	2	50	25	2

Semester-IV

Course Code	Paper	Scheme of Instruction Periods/ week	scheme of Examination Maximum marks in		Paper Credit
			End Sem. Exam	Sessional Work	
MIT 4001	Data Mining and Warehousing	4	75	25	3
MIT 4002	Python	3	75	25	3
MIT 4003	Elective II	3	75	25	3
MIT 4004	Project				

6. That besides formal courses the curriculum shall include one lecture per week in the 3rd semester by a industry representative who would present the current application of computers in their industry.
7. That social work and plantation to be done in 1st semester shall include visit to local rural / urban area and do social work as assignment by teachers and make social work file similarly plantation will be done as a assignment by teacher.
8. That the project working the 2nd semester shall be summer/job on training go approximately two months in an industry.
9. That the 3rd semester will have mini project and seminar as assigned by teachers of the Department.
10. That the 4th semester shall be devoted to seminar and project. All candidates shall be required to take a project full time approximately 5 months, preferably in industry / business under the joint supervision of the college teacher and the person in-charge of the industry / business section as M.Sc. (Information Technology) programme guideline, culminating in a real applications development and will have to attend seminar / workshop / classes on communication skill and personality development.
11. That each paper in the curriculum (theory / practical / seminar / industrial lecture / project) shall be an independent entity and shall be evaluated separately. The attendance and marks obtained in each entity shall be above a minimum required level.
12. That the title of papers and the content therein shall be subject to revision from time to time the Board of Studies and the Academic Council of the University within the curriculum structure stated herein.

ELIGIBILITY FOR ADMISSION:

That a candidate processing the second class Bachelor Degree of minimum three-year duration in any discipline (Science) with mathematics at the 10+2 level shall be eligible for admission in the 1st semester of the M.Sc. (IT) programme. Students in the final year of undergraduate programme may also apply subject to the condition that they should produce the evidence of the required qualification at the time of admission, if selected.

MODE OF SELECTION:

That the selection of the candidates shall be purely based on the performance in the Entrance Test (ET) and conducted by P-G Dept. of Mathematics & MCA, DSPMU, Ranchi

ELIGIBILITY FOR EXAMINATION:

1. There shall be Mid-Semester Examination in each Semester.
2. In order to appear at the Examination a Candidate shall be required to
 - a) Attend not less than 75% of the Total Classes of theory and Practical separately in each Semester.
 - b) Attend Tutorial Classes regularly in each paper or group.
 - c) Appear at various Departmental Examinations / Tests in Theory as well as in Practical
3. If the Student after the study for the period prescribed by the Regulations for Examination fails to fulfil the conditions laid down in Regulation at 2 above under Eligibility for Examination, he/she shall be required to fulfil all the conditions in the subsequent academic year before being admitted to the Examination.
4. A Student must satisfy all the preconditions as mentioned above following which he/she will be permitted to appear at the Examination. However, if he/she fails in that Particular Examination, he/she will be permitted to appear at the next Examination as per the Rules and Regulations for Examination framed by the University.
5. No Student shall be admitted to the M.Sc. IT IInd Year / Semester III Class unless he / she passes the M.Sc. IT Ist year / Semester I, II Examinations.
6. Duration of the Examination: The Examination in the M.Sc. IT Theory Papers shall be of Three Hours Duration and the Examination in the M.Sc. IT Practical Papers shall be of Six Hours Duration.
7. In order to pass the M.Sc. IT Examination a Candidate must have cleared the Semester Examinations as per the Rules and Regulations of Examination of the University.
8. A Candidate who passes the M.Sc. IT Examination obtaining 75% or more in any Subject in all the For Semester Examinations taken together, shall be declared to have passed with Distinction in that Subject.
9. A Candidate who passes the M.Sc. IT Examination obtaining not less than 60% of the Total Marks in the M.Sc. IT Subject in all the Four Semesters of the Department Examination taken together, shall be placed in the First Class.
10. The Candidate securing at-least 45% but less than 60% shall be placed in Second Division.

STUDENT'S ALERT:

- All students of M.Sc. IT must follow all the Rules and Regulations of DSPMU, Ranchi.
- Use of unparliamentarily Languages or loose talks will lead to punishment.
- There is a separate dress code for Students of M.Sc. IT which is mandatory for all the Students.
- Ragging in any form is punishable.

- Using Mobile Phones in the Department or in the Class Room is strictly prohibited.
- Misbehaviour with Faculty will lead to Rustication from the University.

STUDENT SUPPORT AND EVALUATION:

The Co-ordinator of M.Sc. IT, Under the P-G Department of Mathematics, DSPMU Ranchi, will constantly monitor the progress of Students. The Weak Students will be given Special Attention by the Faculty, while the Advanced Learners will be paid Additional Help and Support to do even better. For this purpose, the Faculty will take care of the following:

- Hold Weekly Seminar
- Make Personal Counselling
- Take Monthly Tests
- Take Surprise Tests
- Conduct Classes in English for Communicative Competence.
- Organize Quiz and Debates
- Persuade Students to talk in English

FACILITIES PROVIDED:

- LIBRARY
- COMPUTATIONAL MATHEMATICS LAB.
- HOSTEL
- ON-JOB TRAINING
- PLACEMENT
- INTERNET