

PROGRAMME PROJECT REPORT (PPR)

OF

MASTER OF COMPUTER APPLICATION

CENTRE FOR DISTANCE AND ONLINE EDUCATION

SAMBALPUR UNIVERSITY, ODISHA



ସମ୍ବଲପୁର ବିଶ୍ୱବିଦ୍ୟାଳୟ

Sambalpur University

Accredited With Grade-A by NAAC (Second Cycle)

Jyoti Vihar, Burla, Sambalpur, Odisha-768019

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I. Programme's Mission & Objectives

(i) Mission:

To become a role model to impart high quality and learnercentric distance learning system to the unreached and enable them to pursue quality higher education in distance mode. The programme mission of distance mode of MCA programme is to produce Master in Computer application that will be ready to serve the society in a different way.

(ii) Objectives:

Students in the MCA degree program gain the knowledge and skills necessary for success in these competitive, rapidly changing fields in information technology.

The Programme Educational Objectives of MCA programmes are:

1. Demonstrate the ability to adapt to technological changes and innovations in the discipline.
2. Students will exhibit practical knowledge of the management concepts and principles in the work scenario.
3. Analyze, design, implement and evaluate computerized solutions to real life problems, using appropriate computing methods.
4. Proficiency in the basic mathematics employed in computer science.
5. Differentiate among essential data structures used in computer programming, and explain how they work.
6. Gains knowledge of algorithms and networking skills of the learning.
7. Identify, explain and apply fundamental structured programming techniques.
8. Utilize important data structures and associated algorithms in the development of computer programs.
9. Develop computer programs using functional programming and object-oriented programming paradigms.
10. Learners of the MCA Program will have theoretical as well as practical knowledge and demonstrate application of technical principles in a professional work setting.
11. Students will progress and sustain effective individual and organizational performance by leveraging research and IT skills in a given context.

12. Acquire the knowledge, skills, experience, and values to become lifelong learners able to obtain employment in a computer-related field or go on to research.

II. Relevance of the programme with HEI's Mission and Goals:

University Mission

- Sambalpur University shall strive to educate society for generations by providing transformative education with deep disciplinary knowledge and concern for environment.
- To develop problem solving, leadership and communication skill in student participants to serve the organization of today and tomorrow.
- To aim for the holistic development of the students by giving them value based ethical education with concern for society.
- To foster entrepreneurial skills and mindset in the students by giving lifelong learning to make them responsible citizens.

The mission of this course is achieve the Sambalpur University mission and goals and the study of master's degree in computer application will provide adequate coverage of the discipline of computer science. The study of computer Science will prepare the students for life as informed, aware and awakened citizens ready to participate in IT Sector within country and abroad. It will deepen their technical skill and encourage them to involve in research.

1. MCA degree holder can start up their career prospects either in Government or private sector since here are a lot of employment opportunities in them.
2. Job opportunities can be found in software and hardware companies.
3. Opportunities for placement of the MCA degree holders are plenty as they undergo vigorous training in Programming Languages, Software Package, Mathematics, Project work etc.
4. On the completion of the MCA programme, students become eligible to join M.Tech and Ph.D. programme. They can be employed as Executives in System Executives, Software Engineers, System Programmers, etc., in software industries.
5. By providing quality education and necessary infrastructure & facilities to the unreached from far flung places.
6. To provide opportunity to all eligible and motivate persons who couldn't pursue their higher education in more economical way.
7. Better masters in Computer applications can fulfil the current requirement of society, government and others.

8. To create a conducive learning environment.
9. To provide an educational delivery system that is flexible, technology driven meets the prevailing requirements and is cost effective.
10. This program delivers required theoretical and industry inputs to students that develops creative thinking to make them experts and professionals in the field.

III. Nature of prospective target group of learners:

The MCA courses aim for the development of knowledge modules having the right content to take care of the aspirations of academic community and to address to the personalized and industrial needs of the learners under low level of disposable income, rural dwellers, women, unskilled men, minorities, disabled, etc. It will be open to all persons residing in any part of India and abroad irrespective of race, creed or class subject to the fulfilment of minimum qualifications prescribed for admission.

This Programme duration will be two year. Admission into this computing programme for students, who have done their graduations in any discipline and are interested in taking computing/IT as a career. The mode of teaching is English. The detailed is mentioned in separate page.

It aims to provide opportunities to those aspirants who are either working or want to enhance their education level and technical skill while they are not able to attend regular colleges or university.

IV. Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence:

As India is inching towards Digital India, huge number of literates/graduates/Masters in Computer Application is required to meet the challenge. As the current educational system (in regular mode) couldn't provide such a huge numbers of professionals the Open Distance learning mode will compensate deficiency. It will provide for a comprehensive and purposeful engagement between the teacher and the taught through a well-planned instructional package.

Given its scope, the program will benefit aspirants seeking to develop skills, improve competency, and build expertise in the fast growing Computing Industry. It select modern computing tools and techniques and use them with dexterity.

V. Instructional Design

Course Curriculum: Institution adopts specialized approach where the task involved in course design & development is assigned to professionals in the particular department of the university and/or external experts. A draft with the objectives is prepared. It is evaluated by Institution who in turn composes a team of experts to have judicious review of the proposed course that it meets the objectives of distance education.

Program Structure: Institution constitutes a team of experts to review the course structure. The review team provides its feedback and recommendations to the concerned faculty. In case of any modifications suggested by the review team, the curriculum of the course is re-worked upon.

Study Materials: The study material is Self-Learning (SLM) format, which is the essence of standard distance learning Programs. Thus Institution initiates to develop all materials in SLM format. Experts both internal & external write the study material on the specific guidelines laid down by statutory body.

Review by Board of Studies: The course is meticulously reviewed by BOS. Recommendations of BOS are implemented on priority. It also checks & defines the applicability, credit hours, scheme of examination for the course.

Approval by Academic Council: Finally, the course is submitted to the Academic Council of the University for Final Approval.

Programs are offered on semester basis. A modular approach towards pursuing a long term degree Program is implemented. Academic activities are linked together to engage learner and maximize learning.

The MCA course carries Five Theory papers and Two Practical papers for each semester: Besides this one project will be submitted in final semester of this programme.

Program structure: Master of Computer Application

First Semester

| Paper Code | Title of the Paper | L | T/P | Credit |
|-------------------|--|----------|------------|---------------|
| MCA-101 | OOPS using C++ | 2 | 1 | 3 |
| MCA-102 | Operating System | 2 | 1 | 3 |
| MCA-103 | Computer Organization and Architecture | 2 | 1 | 4 |
| MCA-104 | Discrete Mathematics | 2 | 1 | 4 |
| MCA-105 | Financial Accounting | 2 | 1 | 4 |

| | | | | |
|---------------------------------|------------|---|---|-----------|
| Total Theory Credits | | | | 18 |
| Laboratory | | | | |
| MCA-106 | Lab on C++ | 0 | 2 | 2 |
| MCA-107 | Lab on OS | 0 | 2 | 2 |
| Total Laboratory Credits | | | | 4 |
| TOTAL SEMESTER CREDITS | | | | 22 |

Second Semester

| Paper Code | Title of the Paper | L | T/P | Credit |
|---------------------------------|-----------------------------------|----------|------------|---------------|
| MCA-201 | Python Programming | 2 | 1 | 3 |
| MCA-202 | Data Structure | 2 | 1 | 3 |
| MCA-203 | Software Engineering | 2 | 1 | 4 |
| MCA-204 | Data Communication and Networking | 2 | 1 | 4 |
| MCA-205 | Theory of Computation | 2 | 1 | 4 |
| Total Theory Credits | | | | 18 |
| Laboratory | | | | |
| MCA-206 | Lab on Python | 0 | 2 | 2 |
| MCA-207 | Lab on Data Structure using C | 0 | 2 | 2 |
| Total Laboratory Credits | | | | 4 |
| TOTAL SEMESTER CREDITS | | | | 22 |

Third Semester

| Paper Code | Title of the Paper | L | T/P | Credit |
|-------------------|----------------------------|----------|------------|---------------|
| MCA-301 | Database Management System | 2 | 1 | 3 |
| MCA-302 | Web Technology | 2 | 1 | 3 |
| MCA-303 | Information Security | 2 | 1 | 4 |

| | | | | |
|---------------------------------|-------------------------|---|---|-----------|
| MCA-304 | Artificial Intelligence | 2 | 1 | 4 |
| MCA-305 | Soft Computing | 2 | 1 | 4 |
| Total Theory Credits | | | | 18 |
| Laboratory | | | | |
| MCA-306 | Lab on DBMS | 0 | 2 | 2 |
| MCA-307 | Lab on WT | 0 | 2 | 2 |
| MCA-308 | Minor Project | | | 2 |
| Total Laboratory Credits | | | | 6 |
| TOTAL SEMESTER CREDITS | | | | 24 |

Fourth Semester

| Paper Code | Title of the Paper | L | T/P | Credit |
|-------------------------------|---------------------------|----------|------------|---------------|
| MCA-401 | Project Work | | | 16 |
| MCA-402 | Comprehensive Viva-Voce | | | 6 |
| TOTAL SEMESTER CREDITS | | | | 22 |

Total Programme Credits

| Semester | I | II | III | IV | TOTAL |
|---------------------|-----------|-----------|------------|-----------|--------------|
| Total Credit | 22 | 22 | 24 | 22 | 90 |

VI. Procedure for admissions, curriculum transaction, evaluation and medium of instruction:

Minimum Eligibility: Bachelor's degree in any discipline with at least 50% marks (45% in case of SC/ST) from a University established by law in India, with Mathematics at +2 level.

OR

BCA/B. Sc. (IT) / B.Sc. (Computer Science)/any graduate with computers as one of the subject in all the three years of graduation with at least 50% marks (45% in case of SC/ST) from a University established by law in India.

Examination: CDOE is an institution owned and controlled by the authority of Sambalpur University. The examination in respect of CDOE students is conducted by the Sambalpur University. All matters relating to the examinations, i.e., result mark sheet, degree etc. are dealt with the controller of the examination.

Evaluation: Though evaluations of Assignments / Seminar / class test / tutorial etc. are conducted to evaluate the students 30%, yet the final evaluation 70% is done through Term End Examination (weight age: 100%). Evaluations of the MCA course is done by table marking process.

Curriculum Transaction: In the MCA course, we impart instructions mainly through Lecture method during the Personal Contact Programme. We also make use of smart class room. The printed study material is sent to the students by post. Efforts are afoot to provide the study material in soft copies to the learners and to provide them the facility to download the study material from the website through their respective student ID.

Medium of Instruction: The medium of instruction in MCA is in English. The study material will be made available to the student in English language. The lectures in personal contact programme are generally delivered in English.

VII. Requirement of the laboratory support and Library Resources:

Laboratory support: There is requirement of computer laboratory which is specifically useful for this course. The CDOE has a Computer Lab with 30 personal computers connected by high-speed Internet and wireless networks, LAN and printers, white board with multi-media projection facilities.

One to One class: From time to time, the Institution conducts one to one class online for students on demand basis.

Doubt clearing session: A provision to interact with subject faculties is also facilitated to students. Students can clear their doubts one to one with faculty members.

Assignments, Case Studies, Project Work: Apart from the main learning material, students are provided with assignments, case studies and project work. These learning components are generally based contemporary situation in the industry and markets.

| LAB COMPUTERS WITH CONFIGURATION | | | |
|----------------------------------|---|--|------------------------------------|
| Sl. No. | Configuration | Software | Usage |
| 1. | Intel core i7 processor RAM: 8GB Storage: 1TB | 1. Windows 10 operating system or Windows 11 2. Linux operating system (Ubuntu or CentOS) | Practical and program execution |
| Total | 30 | | |

VIII. Cost estimate of the programme and the provisions:

1. The course Fees for MCA is Rs. 10,000/- per semester x 4=Rs. 40,000/ for 2 years +
2. Examination Fees: Rs.1000/-per semester (Total 4 semester) = Rs.4,000/- =Grand Total Rs.44,000/ (1+2)

IX. Quality assurance mechanism and expected programme outcomes

Sambalpur University is one of the premier University of Odisha enlisted under NAAC Grade-A. It has its own effective quality assurance and control mechanism. The detailed is mentioned in separate page. The expected outcome of this programme is to provide quality education in more economical way to produce quality professionals in the fields of Computer Applications who will be ready to serve society and mankind in more effective way.

IQAC has a mandate to review the teaching and learning process. The Primary aim of the IQAC is to develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution. The Sambalpur University has an IQAC with the following objectives:

- The primary aim of the IQAC is to develop system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.
- IQAC is to keep the institution abreast of and abuzz with quality sustenance activities on a wide gamut of pertinent issues.
- IQAC is to generate good practices, ideas, planning, implementing and measuring the outcome of academic and administrative performance of the institution.
- The IQAC submits the Annual Quality Assurance Report of the University duly approved by statutory bodies of the University to NAAC regularly.


20.1.22

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