

# **PROGRAMME PROJECT REPORT**

## **कार्यक्रम परियोजना विवरण**

**Master of Science (Computer Science)**

**School of Science and Technology**

**VARDHMAN MAHAVEER OPEN UNIVERSITY, KOTA**

## **Master of Science (Computer Science)**

### **THE UNIVERSITY**

Vardhman Mahaveer Open University, Kota (earlier Kota Open University, Kota) was established by an Act of the Rajasthan State Legislative Assembly in 1987 with a view to achieve the following objectives:

- Democratizing higher education by taking education to the doorsteps of students.
- Providing access to quality education to all those who seek it, irrespective of age or formal qualification.
- Offering need based academic programmes by giving professional and vocational orientation to the courses.
- Promoting and developing distance education in the State of Rajasthan.

### **Special Features of the Open and Distance Education System:**

- Provision of equal opportunities of admission to people from all walks of life.
- Cost effective educational operations.
- Self-instructional printed course material.
- Network of students support services throughout the State of Rajasthan.
- Face to face and distance counselling wherever and whenever needed.
- Continuous evaluation through internal home assignments.
- Provision of term-end examinations.
- Online Admission Process

### **Academic Programmes**

The University offers Certificate, Diploma and Degree programmes. They are launched with a view to fulfil the student needs for:

- Improvement of skills.
- Continuing education and professional development at work place.
- Acquisition of professional qualifications.

- Self-enrichment.
- Diversification of knowledge etc.

### **Credit System**

The University follows the Credit System for its programmes. Each credit amounts to 30 hours of study containing all learning activities. There will be six course (papers) in MSCCS Previous and six course (papers) in MSCCS final. Each course are of 6 credits. Completion of an academic programme (Degree or Diploma) requires successful clearing of both the home assignments and the term end examinations of each course in a programme.

### **Programme Project Report – PPR**

**Name of the School: School of Science and Technology**

**Name of the Programme: Master of Science (Computer Science)**

| S. N. | Parameter                                              | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Programme's mission & objectives                       | <ul style="list-style-type: none"> <li>● To give the learners knowledge of advanced computer subjects including software and hardware.</li> <li>● To enable the learners get a better job in computer industry. The jobs may include-System Analysts, Programmers, and Technical Facilitators in the industries and teaching posts in colleges and universities.</li> <li>● To enable the learners to work as system managers and hardware engineers in IT industry.</li> </ul> |
| 2     | Relevance of the program with VMOU's Mission and Goals | As per the VMOU's Mission i.e.<br>To promote educational opportunities in Computer with academic excellence. It strives for inclusive growth of relevance society through innovative pedagogy.                                                                                                                                                                                                                                                                                  |
| 3     | Admission Eligibility                                  | Bachelor's Degree (minimum TDC) from any recognized University in any discipline with at least Second Division or equivalent.                                                                                                                                                                                                                                                                                                                                                   |

4

Instruction  
1 Design

Programme Structure : There will be six course (papers) in MSCCS Previous and six course (papers) in MSCCS final.

MScCS (Previous) Computer Science

| क्र.सं.<br>(S. No.) | पाठ्यक्रम का नाम<br>(Name of Course)     | पाठ्यक्रम कोड<br>(Course Code) | श्रेयांक<br>(Credit) |
|---------------------|------------------------------------------|--------------------------------|----------------------|
| 1.                  | Computer Fundamental and System Software | MScCS - 101                    | 6                    |
| 2.                  | Application Software & Web Designing     | MScCS - 102                    | 6                    |
| 3.                  | OOPS Programming with C++ and Java       | MScCS - 103                    | 6                    |
| 4.                  | Programming in VB and Dot Net            | MScCS - 104                    | 6                    |
| 5.                  | Computer Networking & Network & Internet | MScCS - 105                    | 6                    |
| 6.                  | Practical -I                             | MScCS - 106                    | 6                    |

M.Sc. (Final) Computer Science

|     |                                         |             |   |
|-----|-----------------------------------------|-------------|---|
| 7.  | Data Structure and Algorithm            | MScCS - 201 | 6 |
| 8.  | Computer Architecture & Microprocessors | MScCS - 202 | 6 |
| 9.  | Software Engineering                    | MScCS - 203 | 6 |
| 10. | Operating System                        | MScCS - 204 | 6 |
| 11. | Data Communication and Networks         | MScCS - 205 | 6 |
| 12. | Practical-II                            | MScCS - 206 | 6 |

Course MSCCS-106 and MScCS-206 will have practical examination and rest of all will have theory examination.

MScCS-106 is composition of MSCCS-102, MSCCS-103 and MSCCS-104.

MSCCS-206 is composition of MSCCS-201, MSCCS-203 and MSCCS-204.

अध्ययन पद्धति (Study Pattern)

इस विश्वविद्यालय में शिक्षण पद्धति पारंपरिक विश्वविद्यालयों द्वारा अपनाई जा रही कक्षा अध्ययन पद्धति से भिन्न है। खुला विश्वविद्यालय की शिक्षा पद्धति स्व-अधिगम पर आधारित है। यह एक अध्येता-केन्द्रित पद्धति (Learner Centered) है। इस कारण इस पद्धति में विद्यार्थियों पर सक्रिय अध्ययन का उत्तरदायित्व अधिक होता है। स्नातकोत्तर उपाधि, स्नातक उपाधि एवं कुछ अन्य चयनित कार्यक्रमों में सतत् मूल्यांकन की दृष्टि से सत्रीय/आन्तरिक गृह कार्य की व्यवस्था। इससे विद्यार्थियों को निरन्तर अध्ययनरत और अभ्यासरत रहने की प्रेरणा मिलती है।

स्व-अध्ययन सामग्री (Self Learning Material):

विश्वविद्यालय में पंजीकृत विद्यार्थियों को त्वरित रूप से मुद्रित स्व-अध्ययन सामग्री प्रदान की जाती है। सम्पूर्ण पाठ्यक्रम को विभिन्न इकाइयों में विभाजित किया गया है। प्रत्येक इकाई के प्रारम्भ में इकाई की रूपरेखा दी गयी है जिसमें इकाई के उद्देश्य एवं प्रस्तावना के अतिरिक्त सम्पूर्ण जानकारी छोटे-छोटे एवं शीघ्र समझ में आ सकने वाले अनुच्छेदों में

|                 |                                                                 | है। इसमें जगह-जगह पर स्वगृह कार्य प्रश्न एवं निर्धारित स्थान पर अभ्यास प्रश्न भी दिये गये हैं, जिससे विद्यार्थी अपनी प्रगति को स्वयं जाँच सकता है। प्रत्येक इकाई के अंत में सारांश, शब्दावली एवं कुछ उपयोगी पुस्तकों की सूची भी दी जाती है। वर्तमान में अध्ययन सामग्री का डिजिटाइजेशन कर ऑनलाइन उपलब्ध करवाया जा रहा है।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |           |                 |                    |                    |                 |                    |                    |                 |                 |                 |                                               |       |      |     |     |      |     |      |     |              |                                            |       |       |     |     |      |     |      |     |
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| 5               | Procedure for admissions, curriculum transaction and evaluation | <p>The university invites applications online in July session and January session every year. Admissions are usually completed for July session and January session as per guidelines received from UGC. For this the university issues press releases in major newspapers of Rajasthan state. Admission in PG Diploma in Computer Application program will be allowed twice in a year in July and January Session. Promotee Admission in PG Diploma in Computer Application will be allowed only twice in a year in July and January Session.</p> <p>For online admission, the student can apply through e-Mitra or on the university's website <a href="http://www.v mou.ac.in">www.v mou.ac.in</a> itself. For admission of all subjects or complete information regarding programs is available in prospectus on university website <a href="http://www.v mou.ac.in">www.v mou.ac.in</a>.</p> <p><b>Duration of the Programme :</b> Minimum 2 years, maximum 6 years</p> <p><b>Fee Structure:</b></p> <table><tr><th>Prog Code</th><th>Programme</th><th>Total Fee</th><th>Course Fee</th><th>Reg . Fee</th><th>Development Fee</th><th>Practical Camp Fee</th><th>Practical Exam Fee</th><th>Theory Exam Fee</th><th>Post al Charges</th></tr><tr><td>MSCC S-Previous</td><td>Master of Science (Computer Science)-Previous</td><td>13500</td><td>9400</td><td>100</td><td>100</td><td>2000</td><td>300</td><td>1500</td><td>100</td></tr><tr><td>MSCC S-Final</td><td>Master of Science (Computer Science)-Final</td><td>16000</td><td>11900</td><td>100</td><td>100</td><td>2000</td><td>300</td><td>1500</td><td>100</td></tr></table> <p>The examination fee for the first attempt is included in the admission fee.</p> <p><b>Evaluation and Examination Pattern:</b></p> <p>Although the medium of instruction is English but the students are facilitated to use</p> | Prog Code  | Programme | Total Fee       | Course Fee         | Reg . Fee          | Development Fee | Practical Camp Fee | Practical Exam Fee | Theory Exam Fee | Post al Charges | MSCC S-Previous | Master of Science (Computer Science)-Previous | 13500 | 9400 | 100 | 100 | 2000 | 300 | 1500 | 100 | MSCC S-Final | Master of Science (Computer Science)-Final | 16000 | 11900 | 100 | 100 | 2000 | 300 | 1500 | 100 |
| Prog Code       | Programme                                                       | Total Fee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Course Fee | Reg . Fee | Development Fee | Practical Camp Fee | Practical Exam Fee | Theory Exam Fee | Post al Charges    |                    |                 |                 |                 |                                               |       |      |     |     |      |     |      |     |              |                                            |       |       |     |     |      |     |      |     |
| MSCC S-Previous | Master of Science (Computer Science)-Previous                   | 13500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9400       | 100       | 100             | 2000               | 300                | 1500            | 100                |                    |                 |                 |                 |                                               |       |      |     |     |      |     |      |     |              |                                            |       |       |     |     |      |     |      |     |
| MSCC S-Final    | Master of Science (Computer Science)-Final                      | 16000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 11900      | 100       | 100             | 2000               | 300                | 1500            | 100                |                    |                 |                 |                 |                                               |       |      |     |     |      |     |      |     |              |                                            |       |       |     |     |      |     |      |     |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |               |                 |                             |      |                             |
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|                 | <p>either English or Hindi as a medium of examination.</p> <p>Permission letter for the Term End Examination is to be downloaded from the University Website.</p> <p><b>Internal /Home Assignment:</b> In each course (paper) Internal Assignment will be of 20 marks. There will be no Internal Assignment in Practical Courses/papers (MSCCS -106 &amp; MSCCS-206). The Internal Assignments shall be submitted to the Concerned Regional/study Centre on or before the date prescribed by the university. The internal/home assignment will be English language only.</p> <p><b>Term-end Examination (Theory):</b> On the completion of the prescribed minimum duration for Previous as well as for final year i.e. one year; a candidate will be examined by the means of written examination of 3 hours duration in each course (paper). The maximum marks for each course (paper) shall be 80. The Term-end examination (Theory) will be in English Language only.</p> <p><b>Term End Examination (Practical):</b></p> <p>The maximum marks for term end examination of each practical course shall be 100. Minimum 75% attendance in Practical Counseling Camp is mandatory to appear in practical Examination. Distribution of marks will be as follows:</p> <ol style="list-style-type: none"> <li>1. Lab Work and Written Examination – 60 marks</li> <li>2. Record Work – 20 marks</li> <li>3. Viva-voce – 20 marks</li> </ol> <p>To pass in Examination, a candidate shall be required to score 36% marks in each course (paper) as well as in aggregate. However, it is compulsory to secure 36% marks in each component i.e. Internal /home Assignment, Term End Examination Theory and Term End Examination Practical separately otherwise he/she may reappear in the next examination after six months to clear the due papers within prescribed maximum duration of that programme.</p> <p>The marks obtained in internal/home assignment and term end examination shall be shown separately in the marksheet. The successful candidate shall be classified as per the following table-</p> <table> <tr> <td>First Division</td><td>60% and above</td></tr> <tr> <td>Second Division</td><td>48% and above but below 60%</td></tr> <tr> <td>Pass</td><td>36% and above but below 48%</td></tr> </table> <p>The student can apply for revaluation of examination as per University rules.</p> | First Division | 60% and above | Second Division | 48% and above but below 60% | Pass | 36% and above but below 48% |
| First Division  | 60% and above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |               |                 |                             |      |                             |
| Second Division | 48% and above but below 60%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |               |                 |                             |      |                             |
| Pass            | 36% and above but below 48%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |               |                 |                             |      |                             |

### Letter Grade Chart for Calculating CGPA/YGPA

| लेटर ग्रेड<br>Letter Grade |               | ग्रेड प्वाइंट<br>Grade Point | समग्र समतुल्य अंक M (100 अंकों में से )<br>Equivalent overall Marks M (out of hundred) |
|----------------------------|---------------|------------------------------|----------------------------------------------------------------------------------------|
| O                          | Outstanding   | 10                           | $90 \leq M \leq 100$                                                                   |
| A+                         | Excellent     | 9                            | $80 \leq M < 90$                                                                       |
| A                          | Very Good     | 8                            | $70 \leq M < 80$                                                                       |
| B+                         | Good          | 7                            | $60 \leq M < 70$                                                                       |
| B                          | Above Average | 6                            | $55 \leq M < 60$                                                                       |
| C+                         | Average       | 5.5                          | $50 \leq M < 55$                                                                       |
| C                          | Below Average | 5                            | $45 \leq M < 50$                                                                       |
| D <sup>+</sup>             | Marginal      | 4.5                          | $40 \leq M < 45$                                                                       |
| D                          | Pass          | 4                            | $36 \leq M < 40$                                                                       |
| NC                         | Not Completed | 0                            | $25 \leq M < 36$                                                                       |
| E                          | Poor          | 0                            | $10 \leq M < 25$                                                                       |
| H                          | Very Poor     | 0                            | $0 \leq M < 10$                                                                        |

यदि विद्यार्थी NC, E, H ग्रेड प्राप्त करता है तो उसे NC (Not Completed) माना जायेगा तथा उसे पुनः परीक्षा देनी होगी। निम्नलिखित प्रकार से विद्यार्थी का वार्षिक ग्रेड प्वाइंट औसत (Yearly Grade Point Average (YGPA)) तथा संचयी ग्रेड प्वाइंट औसत (Cumulative Grade Point Average (CGPA)) की गणना की जायेगी। YGPA हेतु विद्यार्थी द्वारा प्राप्त ग्रेड प्वाइंट को उस विषय के क्रेडिट अंक से गुणा करके योग को कुल ग्रेड प्वाइंट से भाग देने पर प्राप्त होगा अर्थात्  $YGPA = \sum(C_i \times G_i) / \sum C_i$  जहां पर  $C_i$  क्रेडिट अंक हैं तथा  $G_i$  उस विषय में विद्यार्थी द्वारा प्राप्त ग्रेड प्वाइंट है।

10 Point स्केल पर CGPA की गणना निम्न सूत्र द्वारा की जायेगी

$$CGPA = \frac{\text{Cumulative points secured in all passed courses}}{\text{Cumulative earned credits}} = \sum(C_i \times G_i) / \sum C_i$$

YGPA तथा CGPA की गणना दशमलव के बाद दो अंकों तक की जायेगी।

|   |                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Requirement of the laboratory Work                          | Practical contact camp of 20 counselling days (3 hours per day) will be organized for MSCCS -106 & MSCCS—206 each. Total Practical work will be 180 hours. The bifurcation of 180 hours includes 60 hours of Lab work, 120 hours of Record work and other related activities. Minimum 75% attendance in practical contact classes is compulsory in practical contact camp to appear in Practical Examination. Attendance of student in a practical camp will be valid only for that particular practical camp. If student does not attend the practical camp or does not appear in practical exam or does not pass the practical exam, then student has to again appear in practical camp with at least 75% attendance to appear in that practical exam. If student becomes defaulter in exams, he should fill the defaulter form for that exams. |
| 7 | Cost estimate of the programme and the provisions           | Cost of preparation of self-learning material (SLM), printing and supply, delivery system is followed as per guidelines of the university. University student Counseling and conducting of examination and evaluation is followed as per guidelines of the university.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8 | Quality assurance mechanism and expected programme outcomes | Centre for Internal Quality Assurance (CIQA) is monitoring, improving and enhancing effectiveness of the program. The expected outcome of the programme is to develop knowledge and skills so that the learner can get career opportunities in teaching and research.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Learners may seek the help of the following functionaries from 10.00 AM to 5.00 PM on working days to sort out the problems as indicated below:

- (i) About non-receipt of Study Materials, Assignments etc.  
Director (MPD), VMOU, Rawatbhata Road, Kota - 324 021  
0744-2797346, 0744-2797349, 0744-2797350
- (ii) About Admission, Fee Receipts, Registration, Change of Regional/Study Centre and postal addresses, etc.  
Concerned Regional Centre of VMOU, Kota
- (iii) About Examination Centres, Results, Mark Sheets, Revaluation etc.



Controller of Examinations, VMOU, Rawatbhata Road, Kota - 324 021

0744-2797314, 0744-2797328, 0744-2797324

(iv) Important Telephone Numbers –

Toll Free No. 1800-180-6166

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