





Education is the manifestation of perfection  
already in man.

*Vivekananda*  
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## Online Programme for MSc Computer Science

### PROGRAM PROJECT REPORT

#### **Programmes mission and objectives:**

The principal mission of online learning at RKMVERI is to enhance student access to the University's academic programs at an affordable cost. Of equal importance, RKMVERI's online education is intended to help students acquire the technical skills and online learning strategies important to the pursuit of their academic and career goals in a self-paced style. By developing and teaching on-line courses, RKMVERI faculty also acquire new instructional skills important to their professional growth and development. The University is committed to providing students and members of faculty the support and resources they need to succeed as participants in online education.

#### **Relevance of the program with HEIs Mission and Goals**

The MSc Computer Science program carried out in regular mode is aligned to the Mission and Goals of RKMVERI. All the courses offered in regular mode by RKMVERI since startup have prior approvals from UGC and other relevant



bodies. The proposed online program, MSc in Computer Science, having been offered in regular mode, inherits the mission and goal.

### **Nature of prospective target group of learners**

The following two groups are found prospective target for pursuing the online MSc Computer Science program.

1. The engineering as well as science graduates in computer science who are placed in the industry become eligible by default for this program in order to provide them an opportunity for continuing education.
2. The undergraduates from any branch of science and technology who satisfy prerequisites laid down for the proposed online program.

### **Appropriateness of programme to be conducted in Open and Distance Learning and/or Online mode to acquire specific skills and competence**

1. The interdisciplinary character of computer science makes the knowledge of theory and practice of Computer Science pivotal in building reliable, sustainable, and efficient systems catering to the ever growing needs in almost every field of study.
2. Online mode of knowledge propagation enables the diaspora of learners of different age groups to come under the ambit of the widely applicable computer science education.
3. The online mode of delivery is best suited for this branch of science as the essential infrastructure needed for a computer science learner are very basic computing systems which in these days are prevalent among the learners.

## Instructional Design

The curriculum adopts a Choice based credit system.

Table 1: Online MSc Computer Science Curriculum

SNo	Courses	Credits	Instructor	Sem	C/E
1	Problem solving approach to Programming	4	Dhyanagamyanda	1	C
2	Discrete Mathematics	4	Joydeep Mukherjee	1	C
3	Design and Analysis of Algorithms	4	Shastravidyananda	1	C
4	Data and file structures	4	Dhyanagamyanda	1	C
5	Artificial Intelligence	4	Tamal	1	C
6	Concepts of Programming Languages	4	Dhyanagamyanda	2	C
7	Probability and Stochastic Processes	4	Sudipta Das	2	C
8	Theory of Computation	4	Shastravidyananda	2	C
9	Advanced Algorithms	4	Subir Kumar Ghosh	2	C
10	Machine Learning	4	Br. Mrinmay	2	E
11	Topics in Graph Theory and Algorithm	4	Joydeep Mukherjee	3	C
12	Computer Vision	4	Br. Tamal	3	C
13	Data Mining	4	Hybrid	3	C
14	Deep Learning	4	Hybrid	3	C
15	Multicore Parallel Program	4	Dhyanagamyanda	3	E
16	Approximation and Online Algorithms	4	Subir Kumar Ghosh	4	C
17	Java- Android Technologies	4	Champak Kumar Dutta	4	C
18	Graph Database: Theory and Application	4	Sudeep Mallick	4	C
19	Computer Networks	4	Dhyanagamyanda	4	E
20	Computational Geometry	4	Subir Kumar Ghosh	4	C

Sem. - Semester, C/E - Core / Elective

### Procedure for admissions, curriculum transaction and evaluation

- The admission to the online program will be carried out in two phases. Firstly the applicants give an entrance test. Those selected in the test will be interviewed. The entire admission procedure will be carried out online.
- The entire program curriculum will be hosted in the dedicated university learning management system server. The admitted learners will be assigned login credentials to access the resources to the programs registered.
- Evaluation will be done on a continual basis, with 12 to 15 internal assessments from which best 10 would be selected. For every course offered by the university in online mode there will be a written final examination in

different centers at various locations.

### **Requirement of the laboratory support and Library Resources**

The reading materials in digital media related to the lecture shall be provided. The MSc Computer Science degree program offered in the online mode does not need laboratory infrastructure.

### **Cost estimate of the programme and the provisions**

The online programs are conducted with the already developed inhouse resources. The institute has adequate infrastructure to develop the learning material. The institute will make provision of about Rs. 18 lakhs per annum to successfully implement and sustain the programme.

### **Quality assurance mechanism and expected programme outcomes**

#### **Quality assurance mechanism**

- All the lecture videos will be prepared prior to the start of the semester. All the videos will be uploaded in the LMS portal hosted by the university. A typical lecture will be for a duration of 60 minutes.
- Each learning material will have well laid down objectives at the beginning of the lecture matching with the outcome of the course.
- The lecture materials will go through an internal review procedure to ensure content and production quality.
- Online feedback system for every aspect of the program will be in place for the learners to express their opinion.
- For every topic that is studied, an online discussion forum will be in place that facilitates all the learners to contribute, share, their ideas on that topic.
- The learners will have the facility to interact offline with the instructor team through email.
- The external experts in the topic of discussion may be consulted for their informed opinion about the topic under discussion.

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## Expected Program Outcome

- Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions.
- Equip the student with skills to analyze problems, formulate a hypothesis, evaluate and validate results, and draw reasonable conclusions thereof.
- Prepare students for pursuing research or careers in industry in mathematical sciences and allied fields.
- Imbibe effective scientific and/or technical communication in both oral and writing.
- Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate the highest standards of ethical issues in mathematical sciences.