

DEVI AHILYA VISHWAVIDYALAYA, INDORE
Institute of Engineering & Technology

M.Sc. (Applied Mathematics)
With Specialization in Computing & Informatics

(Faculty of Engineering)

Admission 2017-18

Khandwa Road, Indore-452017(MP) INDIA
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RATIONALE

In the last decade, there has been an unprecedented growth in areas of information science, communication and computing. Because of the fast growth, several abstract and core areas seem to be losing out of their due importance. On the other hand there lie several newer challenges, which require solution of these very concepts. There is requirement of synergy between different fields / areas so that critical problems are offered innovative solutions. This has resulted in increased demand of the personnel in industry who are well versed with abstract concepts in mathematical modeling & simulation & are capable to apply them in area of computer & information technology. Keeping in mind the current & future needs of the industry & academia, **M.Sc. (Applied Mathematics)** program was initiated by the institution in 2006. The Program is specialized in the area of Computing & Informatics. The course structure has been so planned that candidate after passing out shall not only be master of certain concepts & practices of Mathematical modeling, but shall be able to interplay between Mathematics and Applications, specially in the field of computing and informatics. After completing this program, the enthusiasts can pursue company jobs, M.Phil. and Ph.D.

OBJECTIVES

- To develop basic skills of solving in an efficient and effective way.
- To explore the computer science for promoting research & development.
- To develop manpower for problem solving at mathematical level and support information technologists.
- To strengthen the foundation in the fast growing software and web development industries.
- To provide placement opportunity to the BSc / BCA enthusiasts in the IT / software sectors.
- To transform graduate enthusiasts to specialists.

ELIGIBILITY

B.Sc. /BCA (with Mathematics as one major subject) passed with minimum **45%** marks in aggregate. The candidate should have passed **12th with Mathematics** & scored minimum **50%** marks in Mathematics subject. *The relaxation of 5% marks in Mathematics for SC/ST candidate.*

NUMBER OF SEATS

There shall be **30 seats** out of which 50% seats shall be reserved for MP Domiciles. Reservation for **SC/ST/OBC/** female as per applicable norms.

FEE STRUCTURE

| Semester | Academic Fee | Dev.& Maint. Fee | Exam Fee | Internet Fee / Uni. Fee | Caution Money (Refundable) | Total Payable |
|-------------|--------------|------------------|----------|-------------------------|----------------------------|---------------|
| Ist- Boys | 5,500/- | 1500 | 2,000/-* | 2,750/- | 4,000/- | 13,750/- |
| Ist- Girl | 5,500/- | 1500 | 2,000/-* | 2,561/- | 4,000/- | 13,561/- |
| IIInd-Boys | 5,500/- | 1500 | 2,000/-* | 2,361/- | ----- | 9361/- |
| IIInd-Girl | 5,500/- | 1500 | 2,000/-* | 2,172/- | ----- | 9172/- |
| IIIrd-Boys | 5,500/- | 1500 | 2,000/-* | 2,750/- | ----- | 9750/- |
| IIIrd- Girl | 5,500/- | 1500 | 2,000/-* | 2,561/- | ----- | 9561/- |
| IVth-Boys | 5,500/- | 1500 | 2,000/-* | 2,361/- | ----- | 9361/- |
| IVth-Girl | 5,500/- | 1500 | 2,000/-* | 2,172/- | ----- | 9172/- |

CURRICULUM

A Proportionate mix of theoretical and applied aspects of Mathematics with Computer Science and Information Technology shall be taught during the semesters, under CBCS Scheme. The theoretical study, supplemented with relevant laboratory work, shall enhance the problem solving skills. Dissertation work (Optional) in the final semester shall provide a base of independent thinking through a minor project assignment. M.Sc. syllabus for the program is:

| SEM I | | | | |
|-----------------------------------|----------|--|--------------------------------------|-----------|
| S.No. | Sub Code | Sub Name | Number of Credits L-T-P | Type |
| 1. | AM1PC1 | Algebra | 3-1-0 | Core |
| 2. | AM1PC2 | Discrete Mathematics | 3-1-0 | Core |
| 3. | AM1PC3 | Numerical Analysis / Integral Equations | 3-1-0 | Core |
| 4. | AM1SS1 | Advanced Communication Skills | 2-0-0 | Skill |
| 5. | AM1GEx | Generic Elective I | 3-1-0 | Generic |
| 6. | AM1PR1 | Computer Lab-I (MATLAB) | 0-0-2 | Practical |
| 7. | AM1CV1 | Comprehensive Viva I | 0-0-4 | Viva |
| Total Credit for SEM I | | | 20 actual + 4 Virtual credits | |
| List of Generic Elective I | | | | |
| 1. | AM1GE1 | Computer Architecture/ Digital Electronics and Computer Organization | 3-1-0 | |
| 2. | AM1GE2 | Advanced Special Functions | 3-1-0 | |
| 3. | AM1GE3 | Financial Accounts | 3-1-0 | |

| SEM II | | | | |
|--------------------------------|----------|--|--------------------------------------|-------------|
| S.No. | Sub Code | Sub Name | Number of Credits L-T-P | Type |
| 1. | AM2PC1 | Real Analysis / Measure Theory | 3-1-0 | Core |
| 2. | AM2PC2 | Advanced Differential Equations | 3-1-0 | Core |
| 3. | AM2PC3 | Theory of Computation | 3-1-0 | Core |
| 4. | AM2ECx | Discipline Elective I | 3-0-0 | Disc. Elec. |
| 5. | AM2EMx | Discipline Elective II | 3-0-0 | Disc. Elec. |
| 6. | AM2PR2 | Computer Lab-II (Of Subject of Discipline Elective -I) | 0-0-2 | Practical |
| 7. | AM2CV2 | Comprehensive Viva II | 0-0-4 | Viva |
| Total Credit for SEM II | | | 20 actual + 4 Virtual credits | |

| List of Discipline Elective I | | | | |
|---------------------------------------|--------|--|-------|--|
| 1. | AM2EC1 | Object Oriented Programming with Core Java | 3-0-0 | |
| 2. | AM2EC2 | Comp. Graphics /Multimedia | 3-0-0 | |
| List of Discipline Elective II | | | | |
| 1. | AM2EM1 | Operations Research-I | 3-0-0 | |
| 2. | AM2EM2 | Soft Computing Techniques | 3-0-0 | |

| SEM III | | | | |
|------------------------------------|----------|-----------------------------------|--------------------------------------|-----------|
| S.No. | Sub Code | Sub Name | Number of Credits L-T-P | Type |
| 1. | AM3PC1 | Topology | 3-1-0 | Core |
| 2. | AM3PC2 | Database Theory | 3-1-0 | Core |
| 3. | AM3PC3 | Mathematical Statistics | 3-1-0 | Core |
| 4. | AM3SS2 | Life Management Skills | 2-0-0 | Skill |
| 5. | AM3GEx | Generic Elective II | 3-1-0 | Generic |
| 6. | AM3PR3 | Computer Lab-III (Research Tools) | 0-0-2 | Practical |
| 7. | AM3CV3 | Comprehensive Viva III | 0-0-4 | Viva |
| Total Credit for SEM III | | | 20 actual + 4 Virtual credits | |
| List of Generic Elective II | | | 3-1-0 | |
| 1. | AM3GE1 | OS/Microprocessor | 3-1-0 | |
| 2. | AM3GE2 | Integral Transforms | 3-1-0 | |
| 3. | AM3GE3 | Financial Management | | |

| SEM IV | | | | |
|--|----------|--|--------------------------------------|-------------|
| S.No. | Sub Code | Sub Name | Number of Credits L-T-P | Type |
| 1. | AM4PC1 | Complex Analysis | 3-1-0 | Core |
| 2. | AM4PC2 | Analysis of Algorithm | 3-1-0 | Core |
| 3. | AM4PC3 | Functional Analysis | 3-1-0 | Core |
| 4. | AM4ECx | Discipline Elective III * | 3-0-0 | Disc. Elec. |
| 5. | AM4EMx | Discipline Elective IV * | 3-0-0 | Disc. Elec. |
| 6. | AM4Dxx | Discipline Elective V * | 0-2-4 | Diss. Work |
| 7. | AM4PR4 | Computer Lab-IV (Of Subject of Discipline Elective -III) | 0-0-2 | Practical |
| 8. | AM4CV4 | Comprehensive Viva IV | 0-0-4 | Viva |
| Total Credit for SEM IV | | | 20 actual + 4 Virtual credits | |
| List of Discipline Elective III | | | | |
| 1. | AM4EC1 | Advanced Java | 3-0-0 | |
| 2. | AM4EC2 | Unix / Linux Administration | 3-0-0 | |
| 3. | AM4EC3 | Computer Network/ Internet & Web Technology | 3-0-0 | |
| List of Discipline Elective IV | | | | |
| 1. | AM4EM1 | Operations Research-II | 3-0-0 | |
| 2. | AM4EM2 | Mathematical Modeling | 3-0-0 | |
| 3. | AM4EM3 | Number Theory/Cryptography | 3-0-0 | |

| List of Discipline Elective V | | | | |
|--------------------------------------|--------|------------------------------|-------|--|
| 1. | AM4DW1 | Dissertation (Minor)* | 0-0-4 | |
| 2. | AM4DS1 | Seminar | 0-2-0 | |

* Student will select either **Discipline Elective III and IV or Discipline Elective V**. Internal evaluation of Dissertation work will be based on monthly Seminars (showing progress of work done) and Attendance of students. Final marking will be a combination of Internal and External evaluation.

ADMISSION PROCESS

The application forms are to be downloaded from our website www.ietdavv.edu.in and filled forms along the application fees Demand Draft of **Rs.750/- (Rs. 400/- for SC/ST candidates)** in favor of “Registrar, D.A.V.V., Indore” payable at Indore, are to submitted to Mr. Govind Aske, M-Block, IET, DAVV, Indore. The selection criterion is based on B.Sc. /B.C.A. marks and counselling/written test to be held at Institute level on prescribed date. Candidates are required to bring the Demand Draft of Rs. 1000/- in favor of “Registrar, Self- Finance IET DAVV” payable at Indore on the same day. The list of selected candidates shall be declared on the same day in afternoon. The requisite fee for Semester –I is to be paid within a week, in which Rs.1000/- shall be adjusted. In case admission is withdrawn this amount shall be forfeited.

Awards and Achievements in M.Sc. (Applied Mathematics):

1. The toper of M.Sc. course is awarded the Dr. Manohar Chandwani's **scholarship** of **Rs. 15, 000**.
2. The toper of M.Sc. course is awarded a Dr. Shankar Dayal Sharma's sponsored **Gold medal** at the University convocation ceremony.
3. Students of **reserved category** are awarded full academic fees as per the rules of Govt.
4. A student was selected in TCS recruitment campus.
5. Some students have cleared GATE, GRE and Bank PO and clerical exams.
6. Some are teaching in renowned colleges of M.P. as regular or visiting faculties.
7. Some are perusing higher degrees like B.Ed., M.Tech. and Ph.D. from DAVV and IIT Indore.
8. Some are teaching in Schools and coaching institutes.
9. Some have acquired company jobs.
- 10.3 Students have cleared written exam conducted by the Azem Premji Foundation of Education (an NGO).
- 11.A Student has prepared software for generating salary slip which is implemented in the Institute as a part of MSc project.
- 12.A student has completed her MSc. project from CAT while some others under the guidance of Senior UTD Professors and researchers.

ABOUT IET

Institute of Engineering & Technology (IET) is a UTD set up in 1996 by DAVV under Faculty of Engineering. It offers BE Programs in six engineering Branches namely – Computer, Mechanical, Electronics & Instrumentation, Electronics & Telecommunication, Information Technology & Civil and ME Programs in six specialization namely software Engg., Digital instrumentation, Digital Communication, Industrial Engineering & Management, Design & Thermal

Engineering, Information Security. PhD Programs in Engineering (all branches) and Applied Sciences are also offered. The campus of IET is situated adjacent to Khandwa Road and Ring road. Since its inception, IET has progressed with leaps & bounds and established itself as one of the best centers of imparting technical education in the central part of India. In Previous years, excellent placement of IET students has been recorded. M.Sc. (Applied Mathematics) student are also benefitted by this placement scenario. Giant companies such as TCS, Infosys, PCS, CSC, Tech Mahindra & many more have been recruiting in mass the enthusiasts from IET.

ABOUT DAVV

Devi Ahilya Vishwavidyalaya (DAVV) formerly, Indore Vishwavidyalaya, established in 1964 at Indore the pride city of Malwa is the leading University in the central part of India. DAVV has envisaged the need of qualified professionals in all walks of life and society. It has encompassed the front line areas of education include Science, Applied science, Computer science, Information Technology, Biotechnology, Law, Journalism, Tourism, Management and Engineering. It has over 30 teaching departments offering, graduate and post-graduate programs. Most of them also provide the facilities of doctoral research. DAVV is a state University supported by both, the Government of MP and university Grant Commission (UGC). Its name appears in the common Wealth Year Book and it has been declared as Model University by the Government of Madhya Pradesh. DAVV has about 250 affillied colleges. It also provides centers and forums for learning and knowledge exchange for many small and medium scale industrial units and business houses, located in Indore, Dewas, Pithampur etc. It has also collabrtrion with IIT's, Foreign Universalities and Research Organizations.
