



सत्यं शिवं सुन्दरम्

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PROSPECTUS

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)



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Post Graduate Diploma in Computer Applications (Regular Programme)



DEPARTMENT OF APPLIED MATHEMATICS OVERVIEW

Department of Applied Mathematics of The Maharaja Sayajirao University of Baroda, has been recognized as one of the most active and distinguished department in India. The department was established in the year 1973, in the Faculty of Technology and Engineering which is located in the central part of the Vadodara city. The Department encourages its staff and students, not only to study Mathematics for its own sake, but also to explore the applications of Mathematics in science, engineering and industry.

Department of Applied Mathematics is offering various post graduate degree programs like:

1. Ph. D. in Applied Mathematics.
2. M.Sc.(Applied Mathematics)/(Industrial Mathematics) (2 Year programme).
3. Post Graduate Diploma in Computer Applications (PGDCA)(1 Year programme).
4. M.Sc.(Financial Mathematics) (2 Years Self-finance programme under HPP)

However, the Department is uniquely identified because of its intense involvement in Industrial Mathematics. The Department initiated collaborative projects with Industries in and around Vadodara, since 1983 and since then Department has interacted with number of Industries like ONGC, ABB, Apollo Tyres, Patwa Kinariwala, Metal Powers, Mumbai, Jyoti Ltd. etc. and team of this Department along with Expert from industry have made tremendous efforts to solve this industrial problems up to the satisfaction level of each industry. In this direction Since 1994 department, in collaboration with Industrial Mathematics Group (IMG) of Department of Mathematics, I. I.T. Bombay and Oxford centre for Industrial and Applied Mathematics, U.K., has organized number of National and International Modelling weeks and Study group meetings on Live Problems of Industrial Mathematics. All these activities truly justify that the department is recognized at the national level as one of the few departments offering professional courses in Industrial Mathematics as well as in Financial Mathematics.

On research front, various topics are explored intensively by faculty and students in the Department of Applied Mathematics, which include Industrial Mathematics, Bio-Mathematics, Relativity Theory, Tribology, Soft Computing, Fractional Differential Equations, Optimization, Numerical Methods for Partial Differential Equations, Computational Fluid Dynamics, Neural Networks and Fuzzy Analysis, Wavelets, Signal and Image Processing, Control Theory and Fourier Analysis.

VISION OF THE DEPARTMENT

Educational outreach that increases Mathematical and computing literacy of students for inculcating their well rounded development for sustainable progress of the nation.

MISSION OF THE DEPARTMENT

1. Create and sustain an environment of academic excellence and innovative research in Applied Mathematical Science.
2. Fostering collaborations with institutes and industries.
3. Enhancing well rounded development of the students through extracurricular activities.

ABOUT POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS

The Department of Applied Mathematics is conducting the Post Graduate Diploma in Computer Applications course since 1983. The course is recognized by University Grants Commission (UGC).

PROGRAMME OBJECTIVES

The broad objective of the PGDCA programme is to prepare students for productive careers in software industry, corporate sector, government organizations and academia in short time. This course aids any graduate to acquire conceptual skills in Computer fundamentals as well as in Computer applications. One develops the understanding of data and sharpens their ability to capture vital information out of it. The person will be able to understand, analyze and develop computer programs in the areas related

to application development, web design and networking for efficient design of computer-based systems of varying complexity. In the process one learns various latest, currently prevailing tools and topics to become computer professional. One acquires skill set to employ advanced computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.

CAREER PROSPECTS

After completion of the PGDCA course successfully, one can start his/her career in any of the following:

1. **Software Developer / Web Developer:** Students gaining skill and knowledge in programming languages like HTML, CSS, jQuery, PHP, MySQL, Python, Java, C#, ASP.NET etc. can choose an IT industry.
2. **Network associates:** Serve as network administrator at various organizations.
3. **Technical Assistant:** Assist computer laboratories.
4. **Computer Faculty at School:** Serve in the schools as computer subject teacher.
5. **Freelancer**

PROGRAMME DETAILS

Semester – I

- Unix and Programming in 'C'
- Web Technologies
- Fundamentals of Web Applications Development
- Principles of System Management and Databases
- Data Communication and Cloud Computing
- Practical on Unix and 'C', Data Communication and Cloud Computing
- Practical on Web technologies and Databases
- Practical on Web Applications Development

Semester – II

- Object Oriented Programming
- Programming in Python
- Machine Learning and Data Science
- Practical on Object Oriented Programming
- Practical on Programming in Python
- Practical on Machine learning and Data Science
- Project

INFRASTRUCTURE IN THE DEPARTMENT

- 03 Computer Lab. with advanced computing facility
- 01 Seminar Room
- 01 Library
- 01 Meeting Room
- Class rooms with LCD Projector
- Equipped with Wi-Fi and LAN facility
- Water Cooler with water purifier

ADMISSION PROCESS

1. **Duration of course:** 1 year
2. **Mode of Admission :** **Application through GCAS and Entrance test***
3. **Sanctioned Intake :** 30
4. **Regular /Part time :** Regular Programme
5. **Grant in aid/Higer payment :** Grant in aid
6. **Eligibility :** Any Graduate can apply
7. **Documents required at the time of Admission**
 - School Leaving certificate
 - 12th Mark sheet
 - Mark sheets of all semesters / years of bachelor degree
 - Final Degree Certificate / Provisional Degree certificate
 - Caste certificate (for ST / SC / SEBC candidates from competent authority of Gujarat state)
 - Non creamy layer certificate(for SEBC candidates)
 - Transfer/migration certificate
 - Thalassemia Blood screening report

For Registration and Choice filling visit the website:
<https://gcas.gujgov.edu.in/>

* Admission will be given strictly on the basis of merit obtained by the candidate in an **entrance test**. The test will be made up of multiple choice objective type questions to examine the candidate's abilities in qualitative analysis, reasoning, language proficiency and general knowledge.

Syllabus for Entrance Test : Basic Mathematics up to 10th standard, Analytical ability and Logical reasoning, General English, General Knowledge, Basic Computer awareness