



PSG COLLEGE OF TECHNOLOGY



PEELAMEDU, COIMBATORE - 641004

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MSC APPLIED MATHEMATICS

BROCHURE

MISSION OF THE INSTITUTION



“LET THERE BE CHARITY, SO THAT OTHER PEOPLE MAY SHARE MY FAMILY’S PROSPERITY...”

- P. S. GOVINDASWAMY NAIDU

Our mission as an institution is to provide world-class engineering education, foster research and development, evolve innovative applications of technology, encourage entrepreneurship and ultimately mould young men and women capable of assuming leadership of the society for the betterment of the country.

VISION OF THE DEPARTMENT



**STAY AHEAD
AND
BE RELEVANT**

MISSION OF THE DEPARTMENT



The fundamental objective of the department is to develop quality professionals by providing concept oriented subject knowledge through high quality teaching supplemented with practical training. Apart from specialized knowledge and skills, the programmes conducted by the department aim to develop the personality of students by inculcating values of honesty, sincerity, team spirit and work culture.



ABOUT THE DEPARTMENT

The Department of Applied Mathematics and Computational Sciences comprises of dedicated faculty members who are undoubtedly assets worth mentioning. The Department is known for its discipline and the importance it gives to the overall development of the students and to groom them towards becoming software professionals and research scientists. The Department has its own library with latest books and journals. The Computational Sciences Laboratories are well equipped with the most recent hardware and software.

Besides MSc (Applied Mathematics) programme, the department offers three five year Integrated MSc Programmes and one BSc Programme:

FIVE YEAR INTEGRATED :

MSc SOFTWARE SYSTEMS

MSc THEORETICAL COMPUTER SCIENCE

MSc DATA SCIENCE

UG PROGRAMME:

BSc COMPUTER SYSTEMS AND DESIGN

Apart from stressing on consistently good academic performance, the department encourages participation in co-curricular and extracurricular activities to bring out the latent talents in its students. The students are provided with ample opportunities to improve their organizational skills and group dynamics. They are also motivated to handle seminars and to participate in group discussions.

The department organizes technical symposia at national and international levels at regular intervals. The Department also encourages the faculty members and students to undertake research activities in various fields of Mathematics and Computing.



MSc APPLIED MATHEMATICS

The MSc Applied Mathematics programme was started in the year 1975. The objective of this programme is to acquaint the students with various principles of Mathematics and train them to build and administer mathematical models to the problems in science and technology. This programme is also designed to expose the students to the various development and applications of software, catering to the needs of the industries and R&D sectors.

The programme is a perfect blend of Pure and Applied Mathematics with supporting laboratory courses to strengthen the knowledge of the students.

It follows a meticulously planned curriculum based on Choice - Based Credit System, updated regularly to meet the challenging requirements of the industry.

The programme comprises a mini-project and a major project. The mini - project is to be done during the summer vacation at the end of the second semester. A Six month major project is taken up in the final semester at research institutions or software industries, thereby enabling them to have an opportunity to work in a challenging environment.

MSc Applied Mathematics alumni are well placed in top - notch industries, reputed academic institutions and research labs.

COURSES OF STUDY

SEMESTER I

- Abstract Algebra
- Numerical Analysis and Differential Equations
- Mathematical Foundations of Computer Science
- Number Theory and Cryptography
- Real Analysis
- Object Oriented Programming
- Professional Communication
- Unix and Object Oriented Programming Lab

SEMESTER II

- Complex Analysis
- Linear Algebra
- Probability and Statistics
- Data Structures and Algorithms
- Data Base Management System
- Elective-I
- Data Structures and Algorithms Lab
- Data Base Management System Lab

SEMESTER III

- Graph Theory
- Optimization Techniques
- Topology and Functional Analysis
- Transforms and its Applications
- Machine Learning
- Elective II
- Mathematical Computing Lab (R and Python)
- Java Lab
- Mini-Project & Seminar

SEMESTER IV

- Project Work

Every student shall undertake a project work during the fourth semester. It shall be undertaken in an industrial/research organisation or in the college.

ELECTIVES

- Algebraic Topology
- Artificial Intelligence
- Computational Finance
- Data Mining
- Design and Analysis of Algorithms
- Digital Image Processing and Computer vision
- Epidemic models
- Geometry of locally finite spaces
- Game Theory
- Intelligent Information Retrieval
- Mathematical Modeling
- Operating Systems
- Predictive Analytics
- Statistical Learning
- Stochastic Differential Equations
- Stochastic Models
- soft computing



ELIGIBILITY FOR ADMISSION

Candidates for admission to the MSc Applied Mathematics are required to have a pass in BSc (Mathematics / Mathematics with Computer Applications / Applied Science) or an examination of any other University or authority recognized by Anna University equivalent thereto. Candidates, who have appeared for the final degree examination in April/May academic year 2017-18, are also eligible to apply (However, such candidates if selected for admission will have to produce the final examination mark sheet and the proof of having passed the degree at the time of admission)

The shortlisted candidates have to attend an interview at PSG TECH Campus.

Candidates from other Universities will have to provide an Eligibility Certificate issued by Anna University, Chennai.

ADMISSION PROCEDURE

Candidates will be selected for admission to the programme based on the marks secured in their Undergraduate degree examination and their performance in the interview.

A call letter for interview does not, however, confer any right of admission.

HOW TO APPLY

Application for admission should be made only in the prescribed format. Photo copy of mark sheet, community certificate and relevant certificate should be attached with the application.

Completed application along with a demand draft for ₹ 500/- drawn in favor of "The Principal, PSG College of Technology" payable at Coimbatore should reach "The Principal, PSG College of Technology, Coimbatore - 641004" on or before 15th June 2018.

Application can also be made online by entering all the particulars including marks along with online payment through net banking/credit card/debit card on or before 15th June 2018.

RESEARCH AREAS

- ARTIFICIAL INTELLIGENCE
- CRYPTOGRAPHY
- CYBER SECURITY
- DATA MINING
- DIGITAL TOPOLOGY
- EPIDEMIC MODELS
- GRAPH THEORY
- IMAGE PROCESSING
- INFORMATION RETRIEVAL
- MACHINE LEARNING
- OPERATIONS RESEARCH
- SOFT COMPUTING
- STOCHASTIC MODELS

INFRASTRUCTURE

The College has a well-equipped state of the art Computer Centre with latest software and hardware. The Department has an Object Computing Lab, Computational Sciences Lab, Theoretical Computer Science Lab, Computer System and Design Lab, Data Science Lab, Information Systems Lab, Computational Neuroscience Lab, and Smart and Secure Environment Lab. In addition to the Computer Centre, the college also has a well-equipped TIFAC - CORE Centre, CAD / CAM Centre, Virtual Reality Centre, Virtual Instrumentation Centre, DSP Lab in collaboration with Texas Instruments, PSG - Siemens Centre of Excellence in Automation and PSG Cognizant Open Source Lab with state-of-the-art facilities.

PLACEMENTS

The department is known for its high placement in the college. Students have opportunities to pursue their higher studies in reputed institutions like IITs and IIMB. Students have also been placed in IT companies like ORACLE, IBM, Cognizant, TCS, WIPRO, NALCO etc.

ALUMNI FEEDBACK

Dr. B ARUN KUMAR
(1983-1985)



Dr.U DINESH KUMAR
(1988-1990)



Mr. KANNAN THANGAM
(1993-1995)



DIRECTOR AND CO-FOUNDER OF
IKVAL SOFTWARES LLP

MSc Applied Mathematics programme provided the foundation for my further learning. The department nurtured our brains and provided the ambience for insightful thinking. They encouraged us to dream big and provided the guidance to achieve those dreams.

PROFESSOR, INDIAN INSTITUTE
OF MANAGEMENT, BANGALORE

it is an ideal programme for research in Mathematics and its applications in computer fields. It broadens the scope for research. It cultivates decision making and analytical skills which helped me grow as a Data Scientist.

VICE PRESIDENT, DATABASE
ADMINISTRATOR, GOLDMAN
SACHS (USA)

The proficiency of time obtained during the Applied Mathematics programme is exceedingly transferable which opens opportunities for the career in industry or for further advanced study in diverse areas ranging from engineering, energy to finance or scientific research. The combination of the applied nature of the mathematics that is taught, with the masters level of this programme, makes this qualification highly attractive to industries.

Ms. P L YOGA
(2003-2005)



DATA ANALYTICS HEAD
TCS ION SOLUTIONS, MUMBAI

This programme has helped me visualise and analyse problems effectively. It is not just theoretical but it also deals with the applications of Mathematics in different areas along with few basic and advanced computer science courses which satisfies the survival elements.

Dr V. NATARAJAN
(2008-2010)



COGNIZANT TECHNOLOGY
SOLUTIONS, COIMBATORE

MSc Applied Mathematics programme is perfectly structured in three main aspects: fundamental mathematics essentials, applied mathematics and computer applications thus bridging the gap between pure and applied mathematics, allowing a student to adjust well to a challenging industrial environment.

Ms. RETHIKA
(2007-2009)



SCIENTIST, ISRO, BENGALURU

At ISRO, I am working in India's prestigious Satellite Navigation Project known as NavIC. In this project, I have Designed and Developed Novel Ionospheric models which best suits for Indian Region and Implemented the algorithm which generates ionospheric corrections as an operational software. This was achievable only because of my knowledge gained on both mathematics and computer science through a single course of Applied Mathematics at PSG.

Ms. LOGANAYAGI
KRISHNASAMY

(2009-2011)



TEST MANAGER, IBM

Applied Mathematics is a very nice programme, where you can gain both Mathematical and Computer knowledge together and thereby helping us to be skilled in various areas like IT, Education, Finance. It aims more on practical knowledge in all aspects.

Ms. S VIJAYALAKSHMI

(2012-2014)



COGNIZANT TECHNOLOGY
SOLUTIONS

This programme gave me remarkably a different way of learning exposure which could currently relate to the IT sector. That too in this current period many changes has happened in IT fields and they want people who are mainly having statistical background, artificial intelligence, data minning, machine learning for which applied mathematics stands as a base.

Ms. RADHIKA
SENTHILKUMAR

(2014-2016)



APPLICATION DEVELOPER
ORACLE FINANCIAL
SERVICES SOFTWARE,
BANGALORE

This programme has offered me a platform to have an in-depth knowledge on Mathematical principles in theory and practice. Other than acquainting with the Mathematical knowledge, exposed me into a vast field of software development.

STUDENTS FEEDBACK

Ms. AMURTHA PREETH



INTERN AT NALCO WATER,
PUNE

The perfect blend of core mathematics coupled with in depth knowledge of programming helped me in sculpturing the real world problems into mathematical concepts. This course have ignited my imagination and helped me in reaching a new level.

Ms. S MANAVATHI



INTERNSHIP AT ISI CHENNAI

This programme has taught me the significance of logical thinking in understanding and applying concepts of Mathematics and Computer science in real-world applications. The faculty of the department push the student to their maximum potential and this helps the student become the most competent. Its versatile nature gives the student exactly what is required to choose between a career in research or any industry with the help of several modules through the course.

Ms. H POORNIMA



INTERNSHIP AT IIT MADRAS

Applied Mathematics is a perfect combination of Mathematics and Computer science. It taught me the art of solving problems through coding. It also broadened my understanding of subjects through various papers in Mathematics provided by the department. The department has supportive faculty and provides students with tremendous opportunities that help the student choose a career in either research or any industry.

Ms. L SWETHA



INTERN AT NALCO WATER,
PUNE

It helped me to explore various perspective of mathematics involving the practical knowledge. It also has a strong computer background which helped me in getting through the real world competitions. The projects done during the course is helpful to choose our work domain and gain good knowledge out of it. This programme provides extreme opportunities to know yourself and about the subject.

Ms. S SAHANA



INTERN AT KLA-TENCOR
SOFTWARE PVT LTD.

I couldn't have asked for a better Post Graduation programme. MSc Applied Mathematics offers excellent training in pure and applied mathematics, thereby enabling students to broaden their scope and help them achieve great heights in their respective careers. This course allows students to look mathematics in a different and interesting way and truly understand and appreciate its beauty.

PSG INSTITUTIONS

PSG Sarva Jana Higher Secondary School	1924	PSG Institute of Management	1994
PSG Industrial Institute	1926	PSG College of Nursing	1994
PSG Polytechnic College	1939	PSG Science and Technology Entrepreneurial Park(STEP)	1998
PSG Middle School, Vedapatti	1941	PSG College of Physiotherapy	1999
PSG Primary School, Peelamedu	1943	PSG College of Pharmacy	2001
PSG College of Arts & Science	1947	PSG Centre of Advertising & Communication	2001
PSG College of Technology	1951	PSG Driving School	2002
PSG Rural Health Centre, Vedapatti	1961	PSG Public Schools	2002
PSG & Sons' Charities Metallurgy and Foundary	1974	PSG High Schools, Vedapatti	2005
PSG Institute of Medical Science & Research	1985	PSG Institute of Advanced Studies	2006
PSG Rural Health Centre, Neelambur	1985	PSG Children's Schools	2008
PSG Industrial Training Centre	1986	PSG Hospitals, Karadivavi	2012
PSG Hospitals	1989	PSG Vishnugranthi	2013
PSG Centre for Sponsored Research and Consultancy	1989	PSG Institute of Technology and Applied Research, Neelambur	2014
PSG Centre for Non-formal & Continuing Education	1989	PSG Centre for Academic & Research Excellence	2015
PSG Urban Health Centre	1993	PSG Software Technologies	2017



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