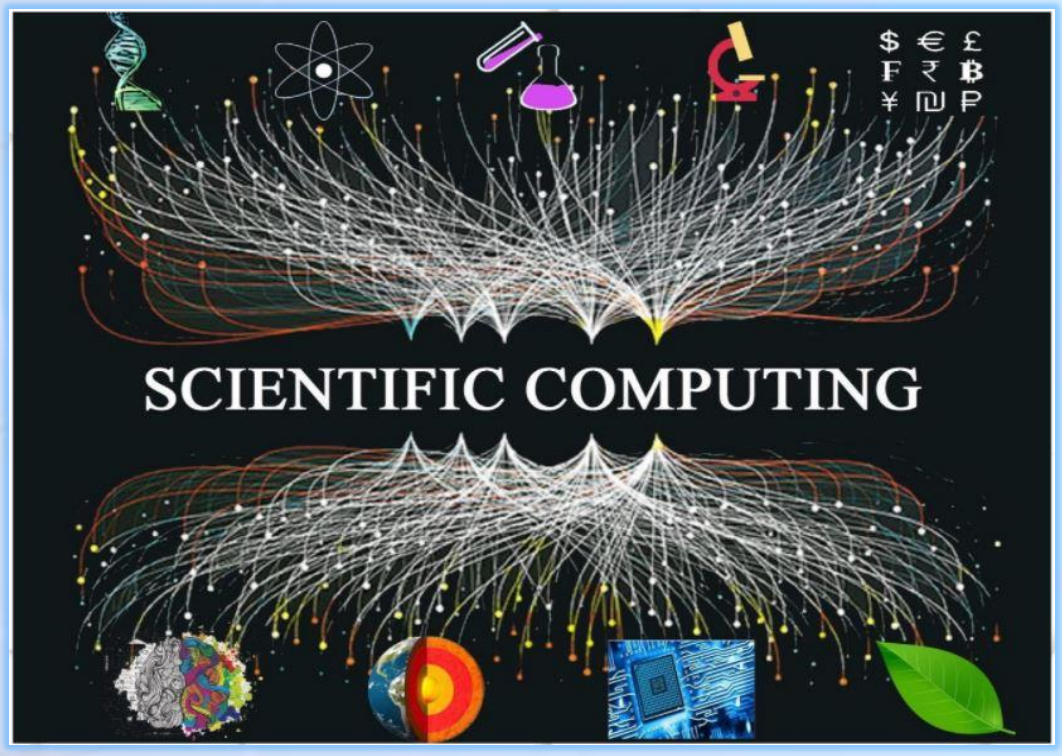
Department of Scientific Computing, Modeling and Simulation

Formerly

Interdisciplinary School of Scientific Computing (ISSC)

(SAVITRIBAI PHULE PUNE UNIVERSITY)



PLACEMENT BROCHURE

BATCH 2020-2022

Contents:

FOREWORD

It gives me immense pleasure to introduce the students of Interdisciplinary School of Scientific Computing (ISSC) for their Industrial Training and Placement Programme at the M. Sc. (Scientific Computing).
Students undergo full time industrial training during the fourth semester. This batch will go for training from January 2022 to June 2022.
The uniqueness of the syllabus makes our students well versed with the core concepts of computing as well as gives them an exposure to the current technologies. Given an opportunity, they will prove themselves to be assets to your organization. Looking forward to a favourable interaction.

Dr. Smita Bedekar,
Coordinator of ISSC,
HOD of CS Department

ABOUT THE SCHOOL

There is now hardly an area of science or engineering that does not use computers for calculations, experimentation, and modelling. Problems in these areas are reduced to systems of differential or linear equations. These systems are then solved using numerical techniques, which are more dependent on the system than the domain of the problem but these systems come in all sizes and shapes.

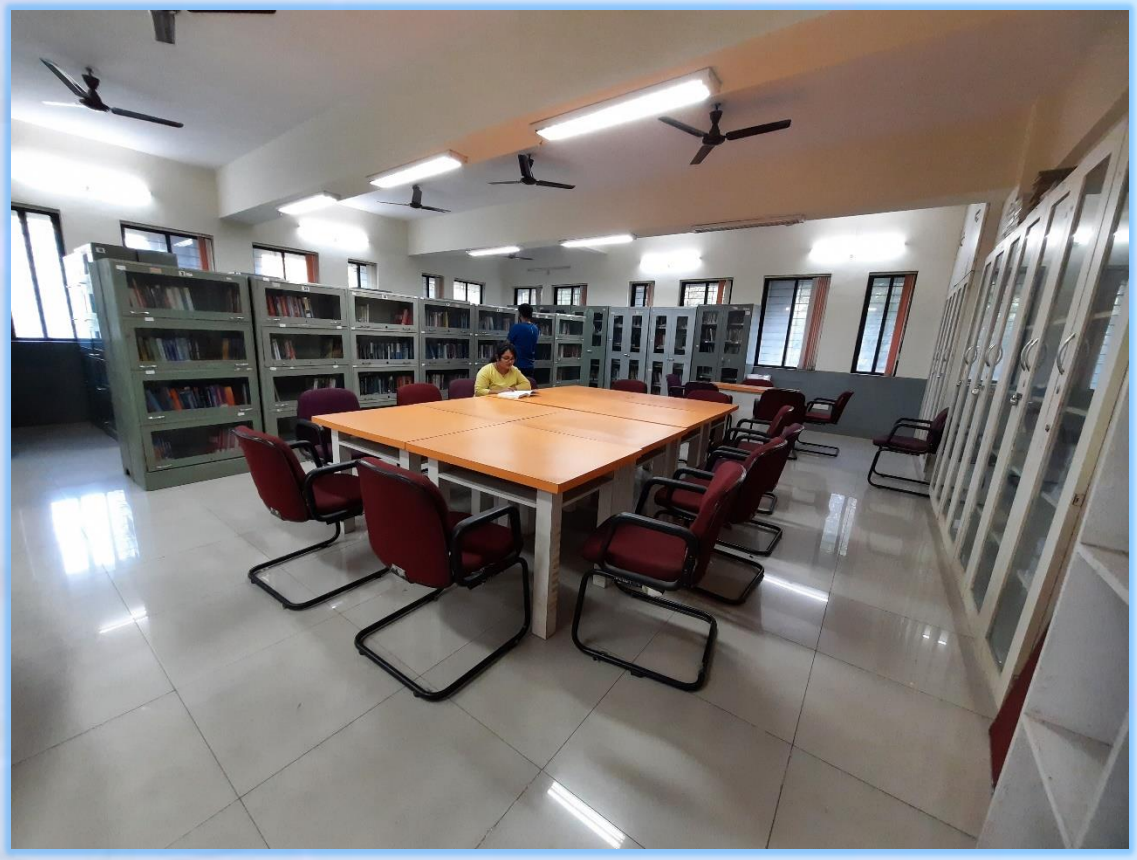
Solving them stretches the available computer resources to their limits. Solution Viz. strange arrays of numbers cannot be understood unless proper visualization techniques are used. Data mining is necessary to use information from large Chemical or Biological databases.

Using Mathematics and Statistics from a Machine learning perspective to predict the next market movement or using the data from the Large Hadron Collider to find a new particle. All this has led to development of Scientific Computing as a discipline in its own right. This discipline draws on domain knowledge from Sciences and Engineering, and technology from Computer Science to develop the best way to solve such challenging problems in the field of

Scientific Computing. It is a unique school of its kind in the country and one of the few schools in the world.

Interdisciplinary School of Scientific Computing has established itself as one of the premier institutes to offer a first of its kind two-year Interdisciplinary course at the postgraduate level. The M.Sc. programme trains students from a computer science background in scientific computing.

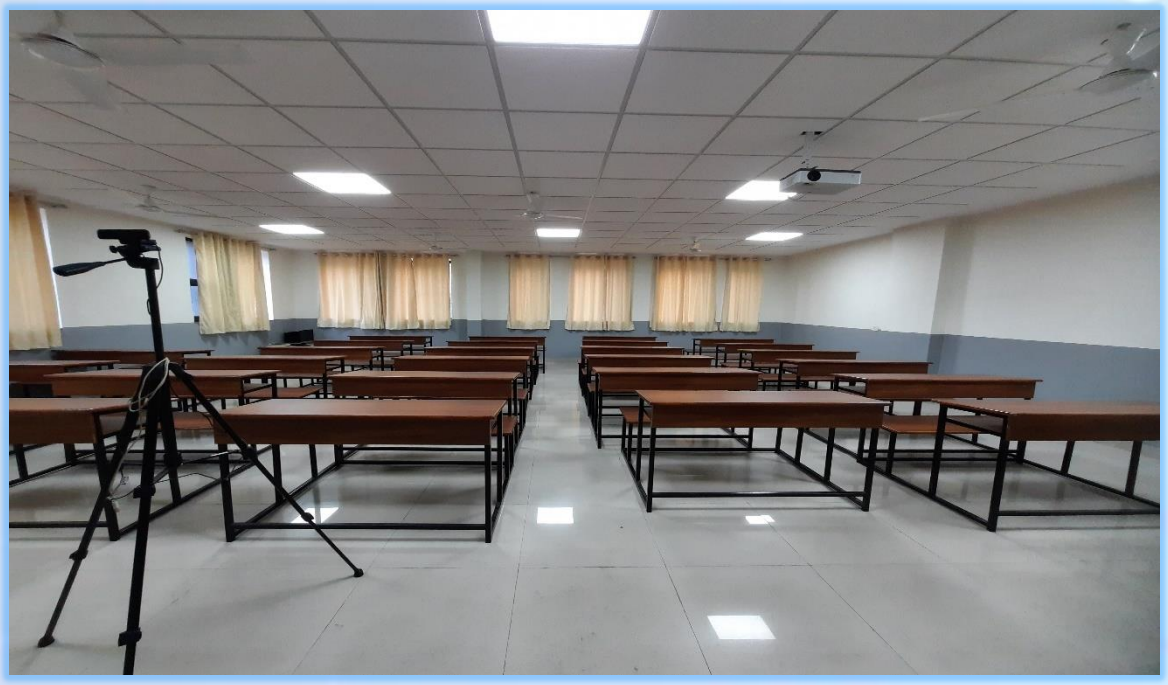
This programme attempts to strike a balance between training in Sciences and Computer Science. It emphasizes on fundamentals of a subject and prepares students to absorb specific technologies when required. M.Sc. Scientific computing students have opportunities in the IT industry or research.



WHY ISSC?

Location

• Located in Pune, the heart of the IT HUB of India
• Surrounded by world-class R&D institutes such as IUCAA, NCRA, TIFR, DAC, NCL, etc.



Andragogy

• Highly accomplished Professors with varied backgrounds in Chemistry, Mathematics, Physics and Computer Science.
• Top tier organization visiting faculty
• Estimated faculty student ratio of 1:5, facilitating personal attention

ACADEMIC PROGRAMME

Master's in Scientific Computing Course Structure

SEMESTER-1

- Principles of Programing languages -1
- Software Engineering
- Foundation of Scientific Computing -1
- Foundation of Scientific Computing-2
- Academic Project

SEMESTER-2

- Principles of Programing languages -2
- Operating System
- Digital Signal Processing
- Numerical Methods-1
- Academic Project
- System-2
- Theory of Computation

SEMESTER-3

- Networking Concepts
- Devops
- Advance Database Concepts
- Artificial Intelligence
- Numerical Methods-2
- Parallel Computing and Grid Computing

SEMESTER-4

• Industry Project/ Research Project

For further details please visit following sites

http://issc.unipune.ac.in/attachments/Syllabus_Scientific_Computing.pdf

http://issc.unipune.ac.in/syllabus.php

IN-HOUSE FACULTY

Distinguished Professor
Dr. Gadre

- An Indian scientist working in computational quantum and theoretical chemistry for more than 30 years.
- He is the founder of ISSC.
- He has a PhD from Indian Institute of Technology Kanpur, India and post-doctorate from the University of North Carolina and University of Houston U.S.A.
- He is the recipient of the prestigious **Sir Shanti Swarup Bhatnagar** Prize in Chemistry.

Prof. Mihir Arjunwadkar

Professor at Department of Scientific Computing, Modeling and Simulation, SP Pune University.

Dr. Smita Bedekar

Associate Professor at Interdisciplinary School of Scientific Computing, University of Pune.

Dr. Vaishali Shah

Assistant Professor at University of Pune.

Dr. Bhalchandra Gore

Assistant Professor at Savitribai Phule Pune University.

Dr. Bhalchandra Pujari

UGC Assistant Professor at Centre for Modeling and Simulation, Savitribai Phule Pune University (University of Pune).

Dr. Sukratu Barve

Assistant Professor at Centre for Modeling and Simulation (currently Centre for Scientific Computing, Modeling and Simulation) and Adjunct Professor at Department of Technology, SPPU

Dr. Snehal Shekatkar

Professor at University of Pune.

Dr. Ankita Katre

Faculty Member (DST-INSPIRE) at Centre for Modeling and Simulation, Savitribai Phule Pune University

Mr. Mukund Ramtirthkar

Assistant Professor (contractual) at Department of Statistics, Savitribai Phule Pune University.

VISITING FACULTY

From Academia

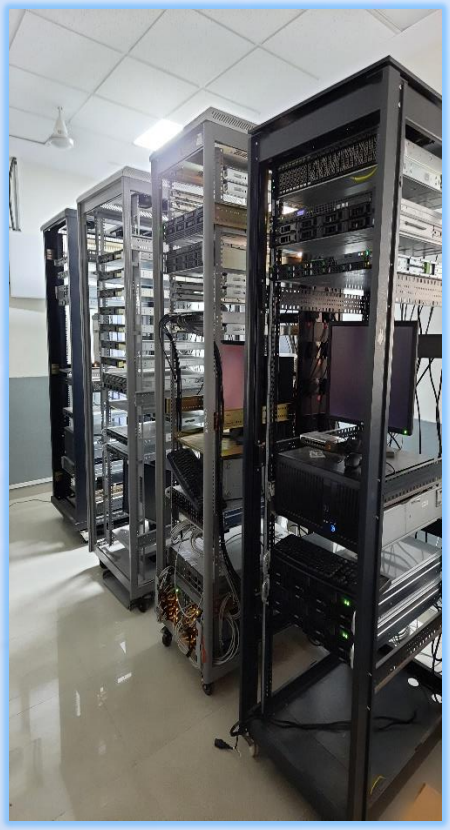
- Mr. M. K. Tandon (Ex-Employee- Indian Institutes of Tropical Meteorology, IITM – Pune).
- Dr. Shailaja Shirwaikar(Associate Professor & Head Department of Comp. Sc. at Nowrosjee Wadia College, Pune).
- Ms. Sonali Gogate.(IT professional with 25+ years of industry experience Teacher/ Lecturer (Math, Computational thinking and Algorithms))

From Industry

- Mr. Nitin Vaze (Director Embilabs Software Solutions LLP)
- Dr. Abhijat Vichare (Consultant, Compilers and system software, Corporate Technical Training)
- Ms.Kaveri Kale (Research Scholar at Indian Institute of Technology, Bombay).
- Mr. Abhijit Limaye (Cyber Security | Product Leadership | Start-ups | EDR | EPP | Threat Research Operations).
- Mr. Balaji Pachai (Senior Software Developer (Blockchain) at V2Soft).
- Mr. Pankaj Chandankar (Senior Technical Specialist at Brillio).
- Ms. Ashwini Jadhav (Technical Manager at CoreView Systems Private Limited).

CURRENT RESEARCH DOMAINS

- Computational Chemistry
- Computational Material Science
- Computational Physics
- Cryptography
- Astronomy
- Theory of Computation and Compiler Construction
- Computational Finance using Machine Learning
- Multi-Objective Optimization for Resource Allocation
- Mathematical modeling of Industrial problems
- Mathematical modeling of music



PROJECTS 2020-21

Team 1:

Project title	EduCy
Team size	5
Platform	Windows
Technology	MERN stack: MongoDB, ExpressJS, ReactJS, NodeJS.
Description	The objective of this web-application is to make online education and recruitment easy. It would provide an efficient way for teachers to conduct online lectures, assignments, quiz, exams etc. Students will learn and be able to attempt exams and submit assignments in an efficient way. Recruiters can use this web-application which would provide information of eligible students and students can in-turn apply. The application is deployed on Heroku.

Team 2:

Project title	1) Great Places App. 2)Chat App.
Team size	5
Platform	Flutter and GitHub
Technology	1) Great Places App Front End:- Flutter Framework Dart Programming Language Back End:- Local Database (SQLite) Shared Preference File Storage Hardware Features:- Camera, Current Location, File Storage. 2) Chat App Front End:- Flutter Framework Dart Programming Language Back End:- Firebase Authentication Firebase Database Real time Database Firebase Storage Firebase Cloud Manager (FCM)
Description	1) Great Places App:- This project is great place app to mark and save memorable places. So if you are travelling anywhere on the globe, get the directions and information of the place. Here we can create a list of places we want to go and add notes to the places you have saved. 2) Chat App:- This project is to develop an Instant messaging App to enable users to seamlessly communicate with each other. So clients are able to send the texts or images or any other media files.

Team 3:

Project title	Mucormycosis Care Center
Team size	5
Platform	Windows/Linux
Technology	Front-end: AngularJS ,HTML Software Used: Pycharm, VS Studio Database: SQL Lite Back-End: Python Django
Description	The website is made for mucormycosis patients. It helps us getting appointment of doctors as well as hospital location.

Team 4:

Project title	99Ads(Advertisement Platform for Buying and Selling Product)
Team size	5
Platform	Android
Technology	Flutter(Front End),Dart(Programming language),Firebase(Back End)
Description	The app allows quick and easy registration and login the users can post free ads along with their verified contact details. The users can buy/sell products like electronic gadgets, cars, bikes, mobile devices, furniture, fashion apparel, accessories, books, etc. They can use the search option to locate their preferred buyer/seller. Private calling and chatting options with the vendors to know about the product condition and negotiate the price. Real-time notifications about new products and buyers or sellers who are nearby. Availability of attractive deals and discount offers user can view the complete specification of the product along with various images and they can also write their reviews. An admin can view the review or feedback of the user along with other details.

Team 5:

Project title	Blockchain-based E-voting
Team size	4
Platform	Windows
Technology	MERN Stack, Solidity
Description	Our main motive in this project is to provide a secure voting environment and show that a reliable e-voting scheme is possible using blockchain. Because, when e-voting is available for everyone who has a computer, or a mobile phone, every single administrative decision can be made by people. This will eventually lead humanity to the true direct democracy. It's important for us since elections can easily be corrupted or manipulated especially in small towns, and even in bigger cities located in corrupt countries. Plus, large-scale traditional elections are very expensive in the long term, especially if there are hundreds of geographically distributed vote centres and millions of voters. This protocol utilizes Smart contracts into the e-voting system to deal with security issues, accuracy and voters' privacy during the vote.

Team 6:

Project title	ShopApp
Team size	5
Platform	Cross Platform (Android, IOS, Web, Linux)
Technology	Frontend: framework : Flutter Programming Language :Dart Backend : Firebase
Description	The online Shopping application 'SHOP app' will help these retailers provide an online application which would have a complete solution to solve the problem of retailers and customers. The 'SHOP app' platform will enable retailers to set up online stores and list their products which will be visible to customers on the application. The customers can browse through the products and purchase them through online mode and need not visit the shop physically. The customers will have the option to add/edit and delete their purchased products. Similarly the customers will also have the option to mark their favorite items which will save the customer's time on repeat orders. Customers will also have the option to view their order history and reorder the same products. As a mode of payment, Customers can choose to pay cash on delivery of the products and can track their purchased products through on-line mode.

Team 7:

Project title	Predicto
Team size	4
Platform	Linux, Windows
Technology	MERN Stack , Python
Description	It is a website that helps in making predictions on stocks using strategies. Predicto provides a platform for the users to buy and sell strategies and predict the trend of the stocks by implementing strategies using the analysis of historical and live data of stocks.

Team 8:

Project title	Hospital Bed Booking Portal
Team size	5
Platform	Windows
Technology	Python, Django
Description	Easy bed booking for patients through online portal. To provide fast service to patients , This process is made computerized and booking of bed for patients

EMPLOYERS

iSSc

NOTABLE ALUMNI

Dr. Lalana Kagal
(Class of 1994)
Principal Research Scientist,
MIT Computer Science & Artificial Intelligence Lab (USA)

Mr. Amit Bagaitkar
(Class of 1998)
Director, Product Engineering,
Harman International

Dr. V. Ganesh
(Class of 2002)
Ph.D. - Computational Chemistry,
Software architect,
Vlife Sciences

Dr. Rajnish Ranjan
(Class of 2002)
Ph.D. - Computational Neuroscience,
Working with Blue Brain project,
EPFL

Mr. Alok Damle
(Class of 2002)
Founder,
RULAsys Ltd.

Mr. Sidhu Kshetri
(Class of 2003)
4 Guinness World Records (Karate)
Technical Head, Tech Mahindra, Pune

Ms. Laxmi Phalak
(Class of 2009)
Senior Software Engineer (Front End),
Asurion,
San Francisco Bay Area

Mr. Aniket Deole
(Class of 2010)
Member of Technical staff,
VMware,
San Francisco Bay Area

Dr. Kavishwar Wagholikar
(M.B.B.S)
(Class of 2010)
Ph.D. - GA-Fuzzy modeling for Medical Decision Support,
Instructor in Medicine,
Harvard Medicine School

Ms. Kaveri Kale
(Class of 2011)
UGC-NET CS and Application
Visiting faculty, IIIT, Pune
Ex-Employee,
Harman Connected Services, Pune

PLACEMENT COMMITTEE

Placement Coordinators (Student)

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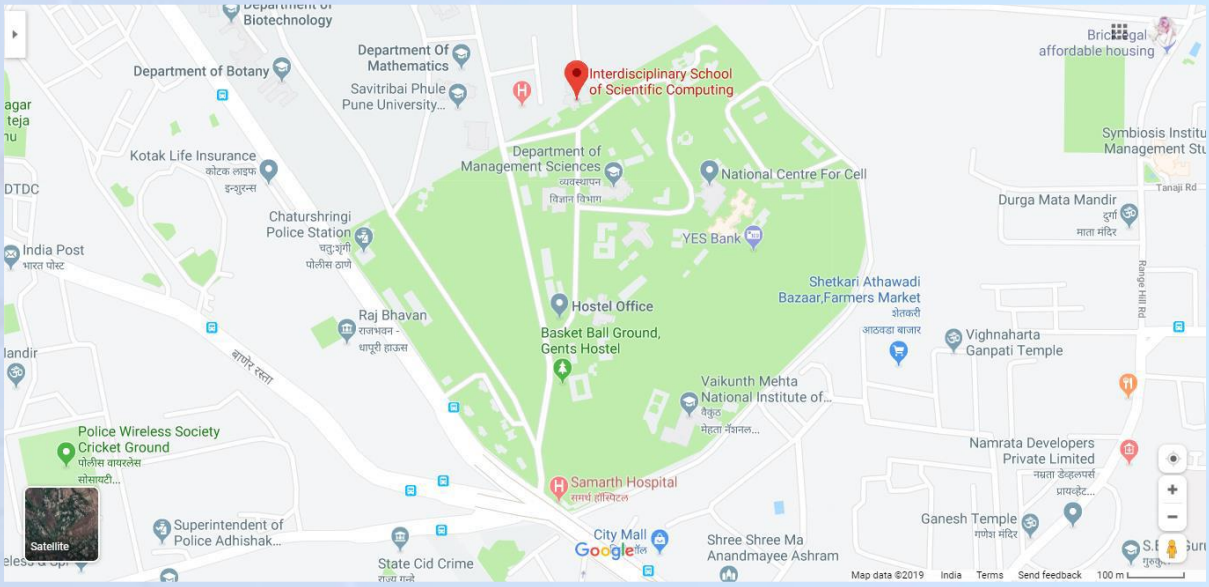

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