

## DEPARTMENT OF CSE, IIT GUWAHATI

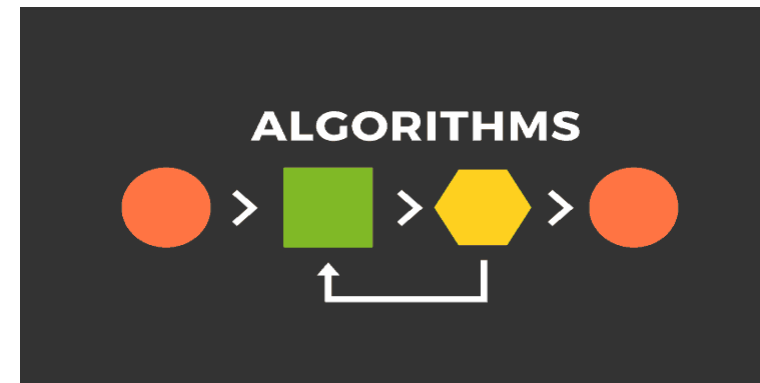
Indian Institute of Technology Guwahati (IITG), the sixth member of the IIT fraternity, was established in 1994. IIT Guwahati has been able to build up world class infrastructure for carrying out advanced research and has been equipped with state-of-the-art scientific and engineering instruments. IITG campus is on a sprawling 285 hectares plot of land on the north bank of the river Brahmaputra around 20 kms from the heart of the city. With the majestic Brahmaputra on one side, and with hills and vast open spaces on others, the campus provides an ideal setting for learning.  
<http://www.iitg.ac.in/>

The Department of Computer Science and Engineering, IITG started its academic programme in the year 1995 and provides an outstanding research environment complemented by excellence in teaching. The department offers B.Tech., M.Tech., Ph.D. and Dual (M.Tech.+Ph.D) degree programs. The department has a comprehensive curriculum on topics related to all aspects of computer hardware and software with an emphasis on practical learning. The department has around 30 faculty members actively involved in various cutting edge research domains in CSE.  
<http://www.iitg.ac.in/cse/>

## ABOUT TEQIP-III

TEQIP an initiative of MHRD, Government of India is a long term program for quality enhancement and resource sharing of technical institutions in India. TEQIP-III was started in 2017-18 as Central Sector Scheme with a special focus on the low income states, north- eastern states, hill states and islands. KIT (Knowledge Incubation Cell for TEQIP), established at IIT Guwahati under 2nd phase of TEQIP, functions as a multi-disciplinary as well as interdisciplinary Innovation Incubation Centre with a focus to impart knowledge, infusing innovation and leading a path to achieve academic excellence. <http://www.iitg.ac.in/cet/teqip3>

# SHORT TERM COURSE ON SELECTED TOPICS IN ALGORITHMS



**June 3 - 7, 2019**

**Organized by**

**Department of Computer Science and Engineering**



## ABOUT THE COURSE

The primary objective of the short term course is to provide an understanding of the fundamentals of some algorithms for some selected areas (problems). Algorithm is the core subject of computing and is required in almost all areas of computer and related sciences. The goal is to enlighten the audience about a few algorithms for some fundamental problems so that at the end of the 5-day workshop/course, one can become more confident on some specific set of problems. The exact set of problem areas will depend on the individual instructors. However the backbone of all of them will be algorithm. Moreover, at the end of the workshop/course, one will have a fair understanding of some of the open questions (research problems) in each area/topic. The course will provide a platform for the faculties teaching *data structure and algorithm* related courses in various technical institutes in sharing the best practices for effective understanding and delivery of the subject. Pedagogy sessions arranged as part of the course will facilitate professional way of teaching algorithms. The course will also provide a forum for long term association with some of the faculties of the CSE department, IIT Guwahati in terms of student internship, collaborative research and combined mentoring of student projects.

## POTENTIAL COURSE CONTENTS

1. Maximum flow and related problems
2. BSP (binary space partition) trees and related applications
3. Algorithms for Matchings in Graphs
4. Algorithms for bit-probe model and related problems
5. Algorithms for geometric optimization problems
6. Algorithms for wireless networks
7. Pedagogy session on how to effectively teach algorithms

## ELIGIBILITY, REGISTRATION AND SELECTION

The course is open to faculty members of TEQIP mapped institutions. Please refer to "Institution List" link in the [NPIU website](#) for list of TEQIP mapped institutions. However, PhD scholars/PG students from these institutions may be accommodated subject to the vacancy of seats. There will be a **refundable registration fee of 2500 INR** for the participants from **TEQIP mapped** institutions. Seats that remain unfilled will be open to faculty/students of other institutions with a **non-refundable registration fee of 2500 INR** (to cover course material and working lunch). There will be total **30** seats for the course which will be filled based on first come first serve basis.

## BOARDING AND LODGING

For participants from TEQIP mapped institutions, based on request, accommodation can be arranged free of cost either in the guest house or student hostels inside IITG campus or in hotels at Guwahati city. Participants from non-TEQIP institutes should make their own arrangements for boarding and lodging. However they may contact the course coordinator (given below) for necessary help and inputs.

## HOW TO APPLY

Interested candidates can find application form, registration details and guidelines in the course web-page link given below [http://www.iitg.ac.in/sushantak/index\\_sta.html](http://www.iitg.ac.in/sushantak/index_sta.html)

Duly filled application form, endorsement form approved by the respective head of the institute and the registration fee Demand Draft drawn in favour of "**Registrar, IIT Guwahati**", payable at Guwahati should be sent to the course coordinator by speed post. Last date for receipt of application form and registration fee DD is **31.05.2019 (Friday)**.

The registration fee would be refunded only after the participation in the course. Registration fee will not be refunded if the candidate fails to attend the course. Candidates from TEQIP mapped institutions can claim TA&DA from their respective institutions.

## COURSE COORDINATOR

**Dr. Sushanta Karmakar** [<http://www.iitg.ac.in/sushantak/>]

**Associate Professor**  
**Department of Computer Science & Engineering,**  
**IIT Guwahati, Guwahati, Assam 781039.**

**Email:** [sushantak2015@gmail.com](mailto:sushantak2015@gmail.com) **Mobile:** 9678007053

## ACCOMMODATION AND REGISTRATION SUPPORT TEAM

**Mr. Parikshit Saikia (8473906870)**

**Ph.D Scholars, Department of Computer Science & Engineering, IIT Guwahati, Guwahati, Assam 781039.**