The Joy of Computing using Python

By Prof.Sudarshan Iyengar | IIT Ropar

Learners enrolled: 57909

Introduction Joy of Computing

A fun filled whirlwind tour of 30 hrs, covering everything you need to know to fall in love with the most sought after skill of the 21st century. The course brings programming to your desk with anecdotes, analogies and illustrious examples. Turning abstractions to insights and engineering to art, the course focuses primarily to inspire the learner's mind to think logically and arrive at a solution programmatically. As part of the course, you will be learning how to practice and culture the art of programming with Python as a language. At the end of the course, we introduce some of the current advances in computing to motivate the enthusiastic learner to pursue further directions.

INTENDED AUDIENCE: Any interested audience
PREREQUISITES: 10th standard/high school

Summary

Course Status :	Completed
Course Type :	Elective
Duration :	12 weeks
Category :	∘ Computer Science and Engineering
Credit Points :	3
Level :	Undergraduate
Start Date :	29 Jul 2019
End Date :	18 Oct 2019
Exam Date :	17 Nov 2019 IST

Note: This exam date is subjected to change based on seat availability. You can check final exam date on your hall ticket.

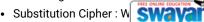### This is an AICTE approved FDP course

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Course layout

- Motivation for Computing
- Welcome to Programming!!
- Variables and Expressions : Design your own calculator
- Loops and Conditionals : Hopscotch once again
- Lists, Tuples and Conditionals : Lets go on a trip
- Abstraction Everywhere : Apps in your phone
- Counting Candies : Crowd to the rescue
- Birthday Paradox : Find your twin
- Google Translate : Speak in any Language
- Currency Converter : Count your foreign trip expenses
- Monte Hall : 3 doors and a twist
- Sorting : Arrange the books

![swayam](https://swayam.gov.in/)
- Searching : Find in sec
- Substitution Cipher : W
- Sentiment Analysis : Analyse your Facebook data
- 20 questions game : I can read your mind
- Permutations : Jumbled Words
- Spot the similarities : Dobble game
- Count the words : Hundreds, Thousands or Millions.
- Rock, Paper and Scissor : Cheating not allowed !!
- Lie detector : No lies, only TRUTH
- Calculation of the Area : Don't measure.
- Six degrees of separation : Meet your favourites
- Image Processing : Fun with images
- Tic tac toe : Let's play
- Snakes and Ladders : Down the memory lane.
- Recursion : Tower of Hanoi
- Page Rank : How Google Works !!

Books and references

NIL

Instructor bio

Sudarshan Iyengar has a PhD from the Indian Institute of Science, Bangalore and is currently working as an Assistant Professor at IIT Ropar and has been teaching this course for the past 4 years.

Course certificate

- The course is free to enroll and learn from. But if you want a certificate, you have to register and write the proctored exam conducted by us in person at any of the designated exam centers.
- The exam is optional for a fee of Rs 1000/- (Rupees one thousand only).
- Date and Time of Exams: **17th November 2019,** Morning session 9am to 12 noon; Afternoon Session 2pm to 5pm.
- Registration url: Announcements will be made when the registration form is open for registrations.
- The online registration form has to be filled and the certification exam fee needs to be paid. More details will be made available when the exam registration form is published. If there are any changes, it will be mentioned then.
- Please check the form for more details on the cities where the exams will be held, the conditions you agree to when you fill the form etc.

CRITERIA TO GET A CERTIFICATE

- Average assignment score = 25% of average of best 8 assignments out of the total 12 assignments given in the course. (There will be programming assignments, actual split will be announced in week 1)
- Exam score = 75% of the proctored certification exam score out of 100
- Final score = Average assignment score + Exam score

YOU WILL BE ELIGIBLE FOR A CERTIFICATE ONLY IF AVERAGE ASSIGNMENT SCORE >=10/25 AND EXAM SCORE >= 30/75.

- If one of the 2 criteria is not met, you will not get the certificate even if the Final score >= 40/100.
- Certificate will have your name, photograph and the score in the final exam with the breakup.It will have the logos of NPTEL and IIT Madras. It will be e-verifiable at nptel.ac.in/noc (http://nptel.ac.in/noc).
- Only the e-certificate will be made available. Hard copies are being discontinued from July 2019 semester and will not be dispatched.