**Introduction to Computer Programming [CS-1101/ PHY-1101] [CS-1101/ PHY-1101-1]**

## Faculty Name

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## Overview

**Overview:** Concept of an algorithm; principle of mathematical induction; correctness of algorithms; efficiency of algorithms - time and space measures; algorithms to programs; specification, top-down development and step-wise refinement; the notion of state and finite state machine; imperative programs; correctness and loop invariants; basic algorithm design techniques; encapsulation, abstractions and modularity; basics of object-oriented programming; basic logic, soundness and completeness, example of a propositional resolution; an example of concurrency; an intro to numerical computation.

The course will involve programming in multiple programming languages, both functional and imperative.

**Reading material**: mostly class notes.

**Grading**: Assignments: 45%, Midterm: 25%, Final exam: 30%

## Learning Outcomes

Baic introduction to computational thinking.

## Requirements (Reading List and other materials)

Mostly class notes.

## Grading Rubric

**Grading**: Assignments: 45%, Midterm: 25%, Final exam: 30%

**Audit requirement:** All course work and a minimum of B- grade.

## Attendance Policy

100% attendance required.