# The Hitchhiker's Guide to Operating Systems

CSE 2226

## Nakul Bhat

Department of Computer Science and Engineering

Manipal Institute of Technology

Email: nakulbhat034@gmail.com

Phone: +91 8660022842

January 10, 2025

Version: 0.1.0

## Abstract

Operating Systems is a three credit subject that covers how operating systems are designed. It is a theory-oriented subject, that delves into OS structure, process scheduling and memory management. It also contains some numericals, although they are sparse. Some case studies will also be covered, focusing in practical applications of the subject.

## Syllabus

The subject is broken into 4 modules. The first three modules are scheduled for 10 hours each, with the last module covering the last 6 hours.

1. Module 1                                                              10 Hours
   (a) Introduction
   (b) Operating System Structure
   (c) Process Concept
   (d) Threads

2. Module 2                                                              10 Hours
   (a) Process Scheduling
   (b) Synchronisation
   (c) Deadlocks

3. Module 3                                                              10 Hours
   (a) Memory Management

4. Module 4                                                               6 Hours
   (a) Implementing File Systems
   (b) System Protection

There will also be a self-directed learning component for the course, which will be assessed in both Internal as well as External Assessments. This is expected to be a Coursera Course, although no specific details have been released yet.

## Grading

**Internal Assessment**                                                **50 Marks**

1. Quiz                                                                  5 Marks
2. Quiz                                                                  5 Marks
3. Quiz                                                                  5 Marks
4. Assignment                                                           5 Marks
5. Mid Semester Examination                                            30 Marks

**End Semester Assessment**                                            **50 Marks**