# Syllabus 2024 Fall

# CS 471/CS 571 (all sections) : Operating Systems

(Anyone who has completed CS 471 at Indiana State University, cannot take CS 571 for credit)

# CREDITS: 3

# General Information

## Contact Your Instructor

**Name:** R.B.Abhyankar

**Email:** RB.Abhyankar@indstate.edu

**Office:** TC Room 301K

The best way to contact me is via my email address.

## Lecture , Exam, Office Hours

Lecture: 2:00 p.m. to 2:50 p.m. MWF

**Final Exam:** Details will be provided later.

**Instructor Office Hours: 8:00 a.m. to 9:00 a.m. MWF**

Please call: 812-299-5177. After contact via phone, a Zoom session can also be initiated, if needed:

Zoom: <https://indstate-edu.zoom.us/j/8592537863>

Email: [RB.Abhyankar@indstate.edu](mailto:RB.Abhyankar@indstate.edu)

**Website**: There is a CANVAS Site for the course.

## Prerequisites

C or better in CS 456 or CS 556; or A- or better in CS 500.

## Required Textbooks

[1] “Understanding Operating Systems (8th edition)” by Ann M. McHoes and Ida M. Flynn (Cengage, 2018) , ISBN: 978-1-305-67425-7

[2] “Operating Systems Demystified” by Ann McHoes and Joli Ballew (McGraw-Hill , 2012), ISBN: 978-0-07-175226-8.

[3] “Principles of the SPIN Model Checker” by M. Ben-Ari (Springer, 2008 ), ISBN: 978-1846287695**.**

[4] “Petri Net Theory and the Modeling of Systems” by James L Peterson (Amazon Kindle Edition, 2019)

**Course Announcements**

You should regularly visit the CANVAS site for the course, and check for assignments, and other announcements.

# Course Description

# (from the ISU catalog)

This class introduces the basic functionality provided by computer operating systems, and covers three main topics. The first topic is memory management; specifically dynamic memory allocation, dynamic address translation, virtual memory, and demand paging. The second topic concerns processor management and concurrency; how do we manage multiple tasks that execute at the same time and share resources. Subtopics in this section include processes and threads, context switching, synchronization, scheduling, and deadlock. The third topic concerns file systems and storage management; the organization and operation of an example file system will be discussed in detail.

Tentative Schedule (Subject to Change)

Week 0: Introduction

Weeks 1-2: Memory Management

Weeks 3-5: Process Management

Weeks 6-8: Petri Nets, SPIN Model Checker

Week 9: Device Management

Week 10: File Management

Week 11: Network Management

Week 12: Security and Ethics

Week 13: System Management

# Learning Outcomes

After completing the course, the student should be able to explain and utilize Operating System concepts.

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# Grading and Assignments

Late submission of assignments may not earn full credit due.

DISTRIBUTION OF POINTS

Assignments: 60 %

Quizzes: 20 %

Final Exam: 20 %

## CS Course Policies

Note that this course follows all standard CS course policies. In particular check the CS course policies related to - cheating/plagiarism, attendance, missing exams. See <http://cs.indstate.edu/info/policies.html> for details.

## Late Homeworks/ Assignments

Late submission of assignments may not earn full credit due.

## Grade Cutoffs

GRADING SCALE:

Percentage Minimum Grade

95 and up A

90-94 A -

87-89 B +

84-86 B

80-83 B -

77-79 C +

74-76 C

70-73 C -

67-69 D +

64-66 D

60-63 D -

59 and below F

# CANVAS

The course has a CANVAS site.

**Americans with Disabilities Act (ADA) Statement:**

Indiana State University recognizes that students with disabilities may have special needs that must be met to give them equal access to college programs and facilities. If you need course adaptations or accommodations because of a disability, please contact us as soon as possible in a confidential setting either after class or in my office. All conversations regarding your disability will be kept in strict confidence.

Indiana State’s Accessibility & Advocacy Resources Office coordinates services for students with disabilities: documentation of a disability needs to be on file in that office before any accommodations can be provided. The Accessibility & Advocacy Resources Office is located at HMSU room 816. They can be contacted at 812-237-3829 or isu-aaro@indstate.edu. Appointments to discuss accommodations with the Accessibility Resources Office staff are encouraged.

Once a faculty member is notified by the Accessibility Resources Office that a student is qualified to receive academic accommodations, a faculty member is obligated to provide or allow a reasonable classroom accommodation under ADA.