

First Come First Served (FCFS)

Table of Contents

1. What is FCFS?	1
2. Key Characteristics.....	1
3. Example Scenarios.....	1
4. Preemptive vs Non-Preemptive	1
5. Scheduling Metrics.....	2
6. Sources	2

1. What is FCFS?

- **Definition:** Processes execute in FIFO order (non-preemptive).
- Runs each job **to completion**.
- Known for **long average waiting times** due to no burst-time sorting.

2. Key Characteristics

- **Simple & Fair:** No prioritization; easy to implement.
- **Convoy Effect:** Long processes delay shorter ones.
- **No preemption** → Suitable for batch systems.

3. Example Scenarios

Process Order	P1	P2	P3	Avg Waiting Time
Original (24, 3, 3 ms)	0ms	24ms	27ms	17ms
Optimized (3, 3, 24 ms)	0ms	3ms	6ms	3ms

Insight: Order impacts efficiency. Shortest Job First (SJF) mitigates this.

4. Preemptive vs Non-Preemptive

- **Non-Preemptive (FCFS):**
 - ☐ Low overhead | ☐ Convoy effect | Example: Batch systems
- **Preemptive:**

- □□ Responsive | □ High context-switching | Example: Round Robin

5. Scheduling Metrics

- **Burst Time:** Actual CPU execution duration.
- **Waiting Time:** Total time in ready queue.
- **Turnaround Time:** Exit time – Arrival time.
- **Response Time:** First CPU allocation – Arrival time.

6. Sources

- <https://afteracademy.com/blog/what-is-burst-arrival-exit-response-waiting-turnaround-time-and-throughput/>
- Moodle PDF | GeeksforGeeks | YouTube Video