SYLLABUS FOR BOARD OF STUDIES ADOPTION — generated from the live catalogue record

Linux, Shell Scripting and System Administration

S-02A · 3 days (configurable 1–5 days) · Informatics · Infrastructure · Years: 2nd, 3rd, PG

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OVERVIEW

File systems, permissions, processes, cron, bash scripting and a working automation script.

Every backend, DevOps and cloud role assumes Linux fluency; a student who can navigate, script and administer a Linux system is immediately useful on the job.

HOURS AND CREDIT POSITION

Contact hours: 24 Guided project: 6 Self-study: 0 Notional total: 30

Credit claim: 1
30 notional hours ÷ 30 hours per credit (NSQF track, UGC Micro-credentials Guidelines §5.3.3) = 1 credits.

COURSE OUTCOMES

CO1. Navigate a Linux filesystem and manage files using the shell (K3)
CO2. Configure file ownership and permissions for a stated access requirement (K3)
CO3. Manage processes and schedule recurring jobs with cron (K3)
CO4. Write a shell script using variables, conditionals and loops (K3)
CO5. Build an automation script that parses logs and reports results (K3)

COURSE CONTENT — MODULES

Hours shown are the recommended format; module time scales proportionally when the engagement runs 1–5 days.

Module 1 — The Linux environment (4h recommended)
Theory: Shell, filesystem hierarchy, navigation, manual pages
Lab: Guided navigation exercises
Output: Command log

Module 2 — Files and permissions (4h recommended)
Theory: Ownership, permissions, links, text-processing with grep, sed and awk
Lab: Permission and text-processing drills
Output: Text-processing scripts

Module 3 — Processes and scheduling (4h recommended)
Theory: Process management, signals, cron, systemd basics
Lab: Schedule and manage running jobs
Output: Scheduled job set

Module 4 — Shell scripting foundations (4h recommended)
Theory: Variables, conditionals, loops, functions
Lab: Write progressively larger scripts
Output: Script portfolio

Module 5 — Automation scripting (4h recommended)
Theory: Arguments, exit codes, error handling, log parsing
Lab: Build a log-parsing automation script
Output: Automation script

Module 6 — Administration capstone (4h recommended)
Theory: User management, package installation, service configuration
Lab: Administer a system and script a routine task
Output: Capstone automation script

ASSESSMENT SCHEME (100 MARKS)

Continuous lab exercises — 40 marks
Capstone project & demonstration — 40 marks
Quiz & viva voce — 20 marks

CO–PO MAPPING

CO1 !' PO5 (strength 2)
The shell is the foundational modern tool for this role.

CO2 !’ PO5 (strength 2)
Permission management is core tool usage.
CO3 !’ PO5 (strength 2)
Process and job control is operational tool usage.
CO4 !’ PO3 (strength 2)
Scripting is small-scale solution development.
CO5 !’ PO3 (strength 2)
An automation script is a developed solution.

EVERY PARTICIPANT RECEIVES

- Certificate of completion
- Course material
- LMS access
- Interview question bank
- Mock interview & viva practice
- Optional nasscom NSQF assessment (priced per candidate on your quotation)

FEE

¹750 per student, incl. GST
Excludes the optional nasscom assessment where offered. Final pricing on your college's quotation.

DESIGNED BY

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