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

Advanced Analytics and Model Deployment

S-12B · 3 days (configurable 1–5 days) · Informatics · Data & Analytics · Years: 2nd, 3rd, PG

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OVERVIEW

Ensemble methods, model interpretability, and deployment with monitoring in place.

Beyond a first model lie the techniques that make analytics trustworthy in production; ensembles, interpretability and monitoring are what employers actually require.

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. Build ensemble models using boosting methods (K3)
CO2. Select and rank features by importance (K4)
CO3. Explain a model's predictions using interpretability techniques (K4)
CO4. Deploy a model with monitoring in place (K3)
CO5. Detect and respond to model drift (K4)

COURSE CONTENT — MODULES

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

Module 1 — Advanced modelling (4h recommended)
Theory: Ensemble methods, boosting
Lab: Build boosted ensemble models
Output: Ensemble notebook

Module 2 — Feature engineering at depth (4h recommended)
Theory: Selection, importance
Lab: Select and rank features
Output: Feature report

Module 3 — Interpretability (4h recommended)
Theory: Explaining model predictions
Lab: Explain predictions with interpretability tools
Output: Explanation notebook

Module 4 — Deployment (4h recommended)
Theory: Serving a model with monitoring
Lab: Deploy a model with monitoring
Output: Deployed model

Module 5 — Monitoring and drift (4h recommended)
Theory: Detecting and responding to drift
Lab: Detect drift and respond
Output: Drift-response note

Module 6 — Capstone (4h recommended)
Theory: A deployed, monitored, interpretable model
Lab: Assemble the capstone
Output: Deployed interpretable model

ASSESSMENT SCHEME (100 MARKS)

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

CO–PO MAPPING

CO1 !' PO3 (strength 2)
Ensemble modelling is solution development.

CO2 !’ PO4 (strength 2)
Feature selection is investigation.
CO3 !’ PO4 (strength 2)
Interpretability is investigation of model behaviour.
CO4 !’ PO5 (strength 2)
Deployment with monitoring is modern-tool usage.
CO5 !’ PO4 (strength 2)
Drift detection is ongoing investigation.

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

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

DESIGNED BY

Venkat Kurela — Founder & Director, Kurela Cognisive Private Limited