Educational Data Mining and Learning Analytics Training Course

Professional Development Training Course Outline

Category	Research and Data Analysis	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s digital-first educational ecosystem, institutions must harness the power of Educational Data Mining (EDM) and Learning Analytics (LA) to personalize learning, increase retention rates, improve academic performance, and optimize curriculum design. Educational Data Mining and Learning Analytics Training Course is designed to equip educators, data scientists, instructional designers, and policy-makers with the tools and techniques to analyze student data, extract patterns, and implement data-driven decision-making strategies for learning environments. The content integrates predictive modeling, data visualization, and machine learning tailored to the education sector.

With the increasing shift toward online and hybrid learning models, learning institutions must adapt to data-driven education models that prioritize learner engagement, institutional effectiveness, and performance outcomes. Participants will gain hands-on experience with tools like Python, R, RapidMiner, and Tableau, explore ethical considerations in educational data usage, and develop impactful dashboards and reports for real-time interventions. The course provides actionable case studies and simulations from K-12, higher education, and corporate training environments.

Programme Curriculum

Educational Data Mining and Learning Analytics Training Course

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Course Objectives

1. Understand the fundamentals of Educational Data Mining (EDM) and Learning Analytics (LA)
2. Apply machine learning models for predicting student success
3. Explore data collection methods in virtual and blended learning environments
4. Conduct behavioral analysis using clickstream and LMS data
5. Utilize data visualization tools like Tableau and Power BI for reporting
6. Identify at-risk learners through predictive analytics
7. Analyze student engagement metrics and performance indicators
8. Develop personalized learning pathways based on data insights
9. Ensure ethical use and privacy of educational data
10. Create data dashboards to inform instructional design
11. Leverage AI and NLP in learning analytics
12. Integrate EDM and LA with institutional policy-making
13. Conduct longitudinal and real-time data analysis for learning optimization

Target Audiences

1. University Professors and Lecturers
2. Educational Researchers
3. Instructional Designers
4. Data Analysts in Education
5. School Administrators and Policy Makers
6. EdTech Product Developers
7. Learning Management System (LMS) Managers
8. Graduate Students in Education and Data Science

Course Duration: 5 days

Course Modules

Module 1: Introduction to Educational Data Mining

- Definition and Scope of EDM
- Historical Development of EDM
- Key Techniques in Data Mining
- Tools Used in Educational Data Mining
- Benefits and Challenges
- **Case Study:** Applying EDM to Improve Student Retention in Higher Education

Module 2: Understanding Learning Analytics

- Distinction Between EDM and LA
- Key Frameworks and Models
- The Role of LA in Student Success
- Real-Time vs Longitudinal Analytics
- Data Sources: LMS, Social Media, Clickstream
- **Case Study:** Using LA to Improve Engagement in MOOCs

Module 3: Predictive Analytics in Education

- Introduction to Predictive Modeling
- Logistic Regression and Decision Trees
- Predicting Dropout Rates and Performance
- Early Warning Systems
- Data Requirements and Accuracy
- **Case Study:** Predictive Analytics in Online STEM Courses

Module 4: Tools and Technologies for EDM & LA

- Using Python and R for Analysis
- Introduction to RapidMiner and Orange
- Tableau and Power BI for Visualization
- Data Preprocessing and Cleaning
- Tool Integration with LMS (Canvas, Moodle, Blackboard)
- **Case Study:** Tableau Dashboards for K-12 Performance Metrics

Module 5: Learning Behavior and Engagement Analysis

- Behavioral Data Collection from LMS
- Identifying Learning Styles via Analytics
- Clickstream and Navigation Patterns
- Measuring Participation and Collaboration
- Custom Reports and Visualizations
- **Case Study:** Tracking Engagement Patterns in Blended Learning

Module 6: Personalization and Adaptive Learning Systems

- Concept of Adaptive Learning
- Recommender Systems in Education
- Personalized Feedback Loops
- Data-Driven Curriculum Design
- Adaptive Pathways in E-Learning
- **Case Study:** Adaptive Learning in Math Remedial Programs

Module 7: Ethics, Privacy, and Data Governance

- FERPA, GDPR, and Educational Data Laws
- Consent and Anonymity
- Data Ownership and Access Rights
- Ethical Dilemmas in Learning Analytics
- Governance Frameworks in Institutions
- **Case Study:** Ethical Data Use in University-Wide Analytics Project

Module 8: Strategic Implementation of EDM and LA

- Aligning Analytics with Institutional Goals
- Capacity Building for Educators and Staff
- Policy Formulation Based on Analytics
- Cross-Departmental Collaboration
- Scaling Analytics Infrastructure
- **Case Study:** Institutional Transformation through LA Strategy

Training Methodology

- Instructor-led live virtual sessions

- Hands-on lab exercises and real-time data practice
- Group-based problem-solving activities
- Use of open-source and commercial analytics tools
- Weekly quizzes and capstone project assessment

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com