



Indian Institute of Management Shillong (IIMS)



Certificate Course in Data Science
| Information Booklet |



About the Program

The Certificate Course in Data Science is designed to prepare aspiring data scientists for entry into the industry. The course has been created after thorough research of industry expectations from the aspirants. This is a rigorous 12-weeks program with over 140+ hours of intensive learning, designed to make the participants industry-ready. The program also aims at giving hands-on experience with toolboxes that any data scientist needs in industry.



Program Outcomes

After completion of this course, the participants are expected to have:

- Ability to translate a business problem to a data science problem, and solve it subsequently.
- Machine Learning techniques in Python and R on case-to-case basis.
- Ability to handle structured and unstructured data.
- Deep knowledge of Machine Learning / Deep Learning / NLP concepts.
- Readiness to face data science interviews in industry.

Key Highlights



Certification from IIM Shillong



Weekend offline classroom sessions at Guwahati Campus and online sessions from Shillong Campus



Case-based interactive sessions



Well qualified and experienced instructors from IIM Shillong



Weekend class schedules (4 Sessions on Saturday and 4 Sessions on Sunday)



Projects, Lab sessions, Assignments



Webinars / meetups with industry experts



Mode of Delivery

The course will be delivered in blended mode of online sessions from Shillong Campus and offline classroom sessions at Guwahati Campus.



Who should attend?

- Professionals who aspire to join a career in the field of Data Science.
- Researchers interested to upgrade their skill-sets in the field of Data Science.
- Candidates pursuing their graduation and post-graduation in engineering, commerce, management, mathematical sciences, computer application, economics, and physics having studied Mathematics at 10+2 level.
- Graduates or equivalent degree holders from any recognized Universities or Institutes.



Course Pedagogy

The course will be delivered in the form of lecture sessions, hands-on lab sessions, DIY sessions, and case based discussions.

There will be four sessions for each Saturday and Sunday, and each lecture session will be of 1 hour 30 minutes duration.



Assessment

The course will have periodic evaluations. The evaluations will be in form of quizzes, assignments, presentations, mini projects, and other objective/subjective assessments. The periodic evaluations are aimed at creating a suitable environment for student engagement and for boosting experiential learning process. IIM Shillong awards certificates to those course participants who successfully complete all the academic requirements and have the necessary attendance criteria (**80% attendance**).

Program Curriculum

Module 1 : Statistics for Data Science (15 hrs)

- Data summaries and descriptive statistics, central tendency, variance, covariance, correlation
- Basic probability: basic idea, expectation, probability calculus, Bayes theorem, conditional probability
- Probability distribution functions – uniform, normal, binomial, chi-square, student's t-distribution, Central limit theorem
- Sampling, measurement, error, random number generation,
- Hypothesis testing, A/B testing, confidence intervals, p-values
- ANOVA, t-test
- Linear regression, regularization
- Linear Programming

Module 2 : Spreadsheet Modeling & Simulation (15 hrs)

- Introduction to formatting in Excel
- Writing formula
- Writing functions: text, date/time, finance, math and statistics, logical, lookup and reference
- Excel Chart, conditional formatting, data presentation and visualization
- Modeling business scenarios
- What-if analysis, scenario analysis, two-way table, goal seeking
- Monte Carlo Simulation
- Pivot table, pivot chart

Module 3 : Data Manipulation (7.5 hrs)

- Basic database terminology
- Loading database in SQL
- SELECT Statement
- INSERT Statement
- UPDATE Statement
- DELETE Statement
- Aggregate functions
- Joins
- Subqueries
- Views

Module 4 : Data science Toolkit: R (15 hrs)

- Basic Computations in R
- Data Types in R
- Control Structures in R
- Useful R Packages
- Exploratory Data Analysis in R
- Data Manipulation in R

Module 5 : Data science Toolkit: Python (15 hrs)

- Python data types
- Control structures and functions
- Introduction to Numpy
- Operation on Numpy arrays
- Data Visualization with Matplotlib and Seaborn
- Time Series data Analysis
- Forecasting methods

Module 6 : Machine Learning (15 hrs)

- Classification methods
- Clustering methods
- Association Mining
- Recommendation Engines

Module 7: Artificial Neural Networks and Deep learning (15 hrs)

- Neural networks Basics
- Convolutional Neural Networks
- Recurrent Neural Networks
- HyperParameter Tuning
- Transfer learning and Fine-Tuning
- AutoEncoders and Embeddings
- LSTM

Module 8: Natural Language Processing (15 hrs)

- Basic NLP Pipeline
- Text Pre-processing
- Feature engineering on Text data
- POS Tagging
- Named Entity Recognition
- Text classification
- Sentiment analysis

Module 9: Analytics in Business (Non-evaluative) (7.5 hrs)

- Capstone project



Program Fees

Candidates selected for the program needs to pay the fees in only one installment.

Tenure ----- One installment	Deadline ----- On selection	Amount ----- Rs 60000 (including GST)
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Payment Details: Fees Payment link: <https://forms.eduqfix.com/imsdc/home>

- Step 1: First you register yourself with the details. ("Fill online Form" option)
- Step 2: After you got registration details on your mobile phone, you need to log in with those details ("Registration Form Login" option)
- Step 3: Please pay the fees
- Step 4: Please take a screenshot of successful payment acknowledgment and fees receipt for your backup and send one copy to ccd@iimshillong.ac.in

The participants have to send either scanned application or filled-in PDF application to

ccd@iimshillong.ac.in

Note: There is 10% discount available on course fees if a group of 10 or more participants are enrolling for the course from the same institute.



Eligibility and Admission

Participants can download application from the following link:

https://www.iimshillong.ac.in/docs/CCDS_Admission_Form.pdf

Interested participants can fill-in the details in the application form and send the scanned application or Filled-in PDF to ccd@iimshillong.ac.in. There are limited seats for the program. Selection is based on fulfilling the course eligibility criteria. Participant's selection will be informed by e-mail.

For any queries contact:

Dr. Pradeep Kumar Dadabada

Program Lead- Certificate Course in Data Science

Indian Institute of Management Shillong

Mayurbhanj Complex, Nongthymmai, Shillong – 793014

East Khasi Hills District, Meghalaya, India

Email: pkd@iimshillong.ac.in | **Tel:** +91 364 2308027 / +91 9849555496