

**OFFICE OF THE
ACCOUNTANT GENERAL (G&SSA)
ODISHA: BHUBANESWAR**

OOC NO:372

Date: 21.07.2017

Sub: Online registration for “Introduction to Data Analytics” & “R Software”

As communicated by Centre for Data Management & Analytics wing of Headquarters office, the online registration for above two Online Certification courses will begin from 24.07.2017 & it will continue up to 15.09.2017 (08 week course). The said two programmes are run by National Programme on Technology Enhanced Learning (NPTEL). It is also intimated that joining /enrolling for an NPTEL course is free and also the videos and associated study material may also be downloaded free. Learning from the course, submitting assignments participating in the discussion forum is also free. **The last date for Online registration is 24.07.2017**

Pre Requisites:

For Data Analytics one should familiar with high school level Linear Algebra and Calculus. Knowledge of Probability theory, statistics and programming is desirable.

For Introduction to R software Mathematics background up to class 12 is needed. Having some preliminary Knowledge will be helpful but not necessarily mandatory.

Interested aspirants may get enrolled in these courses in the links <https://onlinecourses.nptel.ac.in>.

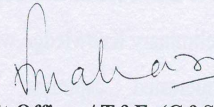
**Sd/-
Sr. Deputy Accountant General (Admn)**

Memo No. Trg&Exam./1/10 /17-18 / 174

Date: 21.07.2017

Copy forwarded for information and necessary action to:

1. Secretary to AG (G&SSA)
2. PA to Sr.DAG/Admn./Sr.DAG (GSA & FAW)/DAG (SSA-I)/DAG (SSA-II)/DAG (SSA-III)
3. Branch Officer in charge of Admn OM-I /Vigilance/OE/SSA-I/SSA-II/SSA-III /GSA/FINAT/Report-I & ECPA/Rep-II/ Report (PAC)/Estate (G&SSA)/ Welfare/ITA. They are requested to communicate this circular to officers/officials under their control for online registration as the last date is 24 July-2017..
4. BO /DA Group. He is requested to upload the Headquarters office Circular & office order in the official website.
5. AAO/Hindi Cell with request to translate the order into Hindi.
6. Notice Board
7. OOC Guard file.


21/07/2017
Sr. Audit Officer / T&E. (G&SSA)

**Centre for Data Management and Analytics
O/o CAG of India, New Delhi.**

Dated: 20/07/2017

Circular

No. 535 /14/Data Analytics Trainings/CDMA/2016-17

Sub: NPTEL Online Certificationcourse

National Programme on Technology Enhanced Learning (NPTEL) which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science. NPTEL provides E-learning through online Web and Video courses in Engineering, Science and humanities streams. NPTEL offers online certification courses with duration of 10 hours, 20 hour as well as 40 hour courses twice a year through its portal <https://onlinecourses.nptel.ac.in>.

Joining/enrolling for an NPTEL online course is free. The videos and associated study material may also be downloaded for free. Learning from the course, submitting assignments, participating in the discussion forum is free.

Two Online certification courses on ‘**Introduction to Data Analytics**’ and ‘**Introduction to R Software**’ are being run by NPTEL. These two courses were identified by CDMA and approved by DAI. The next course is beginning on 24th July, 2017 and ends on 15 September, 2017 (08 weeks course). The last date for enrolment is 24th July, 2017. Necessary details of the courses are attached.

Interested aspirants may get enrolled in these courses in the links given above. The same may be intimated to the undersigned.

The offices are requested to circulate this information amongst staff, at the earliest as the last date for enrolment is 24th Jul 2017.

The receipt of the mail may kindly be acknowledged.

(Approved)

Principal Director/CDMA

To

All offices in IAAD

Introduction to Data Analytics

ABOUT THE COURSE

Data Analytics is the science of analyzing data to convert information to useful knowledge. This knowledge could help us understand our world better, and in many contexts enable us to make better decisions. While this is the broad and grand objective, the last 20 years has seen steeply decreasing costs to gather, store, and process data, creating an even stronger motivation for the use of empirical approaches to problem solving. This course seeks to present you with a wide range of data analytic techniques and is structured around the broad contours of the different types of data analytics, namely, descriptive, inferential, predictive, and prescriptive analytics.

PRE- REQUISITES:

This course requires that you are familiar with high-school level linear algebra, and calculus. Knowledge of probability theory, statistics, and programming is desirable.

COURSE SYLLABUS

We will have a total of 8 weeks for this course. Every week we will have between 3-7 video lectures ranging from 10-60 minutes each. There will be a total of 150 instructional minutes (2 hours and 30 minutes) per week. There will be one assignment at the end of every week for a total of 8 assignments.

COURSE INSTRUCTORS:

Dr.NandanSudarsanam currently works as a faculty member at the Department of Management Studies at IIT-Madras.

Dr.BalaramanRavindran expert in machine learning, ranging from Spatiotemporal Abstractions in Reinforcement Learning to social network analysis and Data/Text Mining.

COURSE LAYOUT

Week 1 Descriptive Statistics Introduction to the course Descriptive Statistics Probability Distributions Week 2 Inferential Statistics Inferential Statistics through hypothesis tests Week 3 Regression & ANOVA Regression ANOVA(Analysis of Variance) Week 4 Machine Learning: Introduction and	Week 5 Supervised Learning with Regression and Classification techniques -1 Bias-Variance Dichotomy Model Validation Approaches Logistic Regression Linear Discriminant Analysis Quadratic Discriminant Analysis Regression and Classification Trees Support Vector Machines Week 6 Supervised Learning with Regression and Classification techniques -2 Ensemble Methods: Random Forest Neural Networks
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Concepts Differentiating algorithmic and model based frameworks Regression : Ordinary Least Squares, Ridge Regression, Lasso Regression, K Nearest Neighbours Regression & Classification	Deep learning Week 7 Unsupervised Learning and Challenges for Big Data Analytics Clustering Associative Rule Mining Challenges for big data analytics Week 8 Prescriptive analytics Creating data for analytics through designed experiments Creating data for analytics through Active learning Creating data for analytics through Reinforcement learning
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Introduction to R Software

About the course

Any scientific task without the knowledge of software is difficult to imagine and complete in the current scenario. R is a free software that is capable of handling mathematical and statistical manipulations. It has its own programming language as well as built in functions to perform any specialized task. We intend to learn the basics of R software in this course.

How to learn in this course [Lecture 0](#)

Intended Audience

UG students of Science and Engineering. Students of humanities with basic mathematical background can also do it. Working professionals in analytics and anyone involved in programming, mathematical and statistical computations, simulations and data analysis can also do it.

Prerequisites

Mathematics background up to class 12 is needed. Having some preliminary knowledge will be helpful but not necessarily mandatory.

Industries that will recognize this course

All industries involved in mathematical and statistical computations, programming and simulations and having R & D set up will use this course.

Course instructor

Dr. Shalabh is a Professor of Statistics at IIT Kanpur.

Course layout

<p>Week 1:</p> <p>Basic fundamentals, installation and use of software, data editing, use of R as a calculator, functions and assignments.</p> <p>Week 2:</p> <p>Use of R as a calculator, functions and matrix operations, missing data and logical operators.</p> <p>Week 3:</p> <p>Conditional executions and loops, data management with sequences.</p> <p>Week 4:</p> <p>Data management with repeats, sorting, ordering, and lists</p>	<p>Week 5:</p> <p>Vector indexing, factors, Data management with strings, display and formatting.</p> <p>Week 6:</p> <p>Data management with display paste, split, find and replacement, manipulations with alphabets, evaluation of strings, data frames.</p> <p>Week 7:</p> <p>Data frames, import of external data in various file formats, statistical functions, compilation of data.</p> <p>Week 8:</p> <p>Graphics and plots, statistical functions for central tendency, variation, skewness and kurtosis, handling of bivariate data through graphics, correlations, programming and illustration with examples.</p>
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More details about the course

Course url: https://onlinecourses.nptel.ac.in/noc17_ma17

[More details on how to learn in this course \(Video\)](#)

Course duration: 08 weeks

Start date and end date of course: 24 July 2017-15 September 2017

[Join](#)

The useful links for the courses

1. E-Mail : nptel@iitm.ac.in
2. NPTEL : <http://nptel.ac.in/>
3. NPTEL ONLINE COURSE REGISTRATION: <https://onlinecourses.nptel.ac.in/>
4. Local Chapter (For Colleges) : <http://nptel.ac.in/LocalChapter>
5. YOUTUBE : <http://www.youtube.com/iit>
6. TEXT OF VIDEOS : <http://textofvideo.nptel.iitm.ac.in/>