

## COURSE PROSPECTUS

**Name of the Group:** *IT Group*

**Name of the Course:** *Advanced Diploma in Artificial Intelligence (AI)*

**Course Code:** *SW800*

**Starting Date:** *15<sup>th</sup> October 2019*

**Duration:** *12 Weeks*

**Course Coordinator:**

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### **Preamble:**

Intelligent machines has replaced human capabilities in many areas. Artificial intelligence is the intelligence exhibited by machines or software. It is the branch of computer science that emphasizes on creating intelligent machines that work and react like humans. Artificial Intelligence spans a wide variety of topics in computer science research, including machine learning, deep learning, reinforcement learning, natural language processing, reasoning, perception etc.

### **Objective of the Course:**

This three month course presents the components of Artificial Intelligence to the participants. They and the participants will get to work with the basics of Machine learning, Neural Networks, explore the Platforms for AI, implement methods to solve problems using Artificial Intelligence and Natural Language Processing, etc.

### **Outcome of the Course:**

This course is designed in synchronization with the industry requirements to provide the participants in-depth knowledge and skills required by AI field around the globe. It provides comprehensive knowledge about the fundamental principles, methodologies and industry practices in AI.

### **Course Structure:**

It is a 3 months program which includes the following modules

	<b>Module Name</b>	<b>Duration(Weeks)</b>
<b>1</b>	<b>Introduction to AI and Programming Tools - Python &amp; R</b>	<b>3</b>
<b>2</b>	<b>Machine Learning &amp; Deep Learning</b>	<b>4</b>
<b>3</b>	<b>Natural Language Processing</b>	<b>1</b>
<b>4</b>	<b>AI Platforms &amp; Reinforcement Learning</b>	<b>1</b>
<b>5</b>	<b>Mini Project</b>	<b>3</b>

*Other Contents*

a. **Course Fees:**

**General Candidates:** Course fee is Rs. 35000 + GST at actuals

**SC/ST Candidates :** Tuition Fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of **Rs. 4200 as Advance caution/security deposit**. This amount will be considered as caution/security deposit and will be refunded after successful completion of the course. If the student fails to complete the course successfully this amount alongwith any other caution/security deposits by the student will be forfeited.

**Modular wise Course Fee:** Not Applicable for this course”

b. **Registration Fee:** An amount of Rs.1000/- (including GST)(nonrefundable) should be paid at the time of registering for the course.

This fee shall be considered as part of course fee, if the student joins the course. If a student register and pay for more than one course and join for any one course, all such amount will be adjusted against the course fee payable.

If the student does not join for the registered course / any of the registered courses, fee paid shall be forfeited.

**For SC/ST candidates, the registration fee is Rs.500/-** and will be considered as part of caution/security deposit and will be refunded after successful completion of the course. If the candidate does not join or fails to complete the course the amount will be forfeited

However above the registration fee shall be refunded on few special cases as given below

- Course postponed and new date is not convenient for the student
- Course cancelled in advance, well before the admission date

c. **Course Fee Installment Structure:**

Students can pay the full fees of Rs. 41,300 (Rs. 35,000 + GST) as given below

Fees	*Amount for General Candidates	Amount for SC/ST Candidates. (considered as caution/security deposit)	# Due Date (on or before)
Registration Fee	Rs.1000/-	Rs.500/-	During Registration
**Advance Fee	Rs 5000/-	Rs 3700/-	04-10-2019
1 <sup>st</sup> Installment	Rs 35,300/-	Nil	15-10-2019
*** 2 <sup>nd</sup> Installment	Not Applicable		
Total Fee	Rs 41,300	Rs. 4200 (refundable after successful completion of course)	-

\*Above fees is inclusive GST@actuals(18%) and revision if any will be applicable at the time of payment.

# Fine will be applicable to late fee payment.

\*\* Advance fee - After publication of first selection list, the students in the first selection list have to pay the Advance Deposit within the due date to take provisional admission. Students in the additional selection list should pay both Advance and First installment fee together on or before counseling day

- d. Eligibility: BE/BTech/BSc/3 year Diploma (IT/Computer Science/Electronics), BCA/MCA, Degree holders with PGDCA, DOEACC A, B level Or equivalent of any of these having good computer programming knowledge.

# Final year students have to include the copies of course completion certificate of their qualifying degree/ diploma or copies of the mark lists up to the last semester/ year. On the date of counseling/ admission, he/she must produce the originals of course completion certificate/ mark lists up to the last semester/year examination.

For more details about the policy refer:  
<http://nielit.gov.in/sites/default/files/course/NIELITCalicutPoliciesShortTermCourses.pdf>

- e. Number of Seats : 40
- f. Selection of candidates : Selection is based on the marks in the qualifying degree.
- g. Test/Interview : Not Applicable
- h. Counseling/Admission : 15<sup>th</sup> October 2019
- i. Important Dates (if applicable) :
- |   |                                      |
|---|--------------------------------------|
| Last date for submitting application      | : <b>30-Sep-2019</b>                 |
| Selection intimation through mail/website | : <b>01-Oct-2019 (After 5.00 PM)</b> |
| Counseling/Admission                      | : <b>15-Oct-2019</b>                 |
- j. Course Timings : 9.30 am to 5.00 pm
- k. Placement : Placement Assistance shall be provided. [Partial List of placements attached here](#)
- l. **Lab Facilities:** The Lab is equipped with Intel Xeon Dual Processor based servers from HP, IBM, DELL, HCL, GPU- Intel Xeon Gold Processor 5120 with NVIDIA Quadro P5000 16GB, managed gigabit switches and more than 100 networked PCs with 1Gbps internet facility. A variety of software is available which include various flavors of Windows and Linux Operating Systems like Windows, RedHat Enterprise Linux/CentOS 6/7, RT Linux, OpenStack, CloudStack, OpenVAS/Nessus and various commercial and open source development tools, database and cloud servers, etc.

m. Course Contents :

## **Introduction to AI and Programming Tools (3 Weeks)**

Introduction to AI and its applications

Python:- Basics Data Types, Conditional Statements, Looping, Control Statements, String, List And Dictionary Manipulations, Python Functions, Modules And Packages, Object Oriented Programming in Python, Regular Expressions, Exception Handling.

Introduction to Database Management System & SQL, Database Interaction in Python.

Data Analysis & visualization – using numpy, matplotlib, scipy

R Programming:- Basics - Vectors, Factors, Lists, Matrices, Arrays, Data Frames, Reading data.

Data visualization - barplot, pie, scatterplot, histogram, scatter matrix  
Statistical Analysis -Summary Statistics, Probability distributions in R- Normal distribution, Poisson distribution, Binomial distribution. Correlation and Regression

## **Machine Learning & Deep Learning (4 Weeks)**

Supervised and Unsupervised Learning, Classification and Regression, Linear Regression, KNN, K Means, Logistic Regression, Support Vector Machines (SVM), Decision Tree, Naïve Bayes, Ensemble Methods, Random Forest, Boosting and Optimization.

Deep Learning Concepts, Basics of Artificial Neural Network, Deep Neural Networks, Convolutional Neural Network (CNN), Recurrent Neural Network (RNN), Tensorflow, Keras, Introduction to Generative Adversarial Networks(GAN), OpenCV

## **Natural Language Processing (1 Week)**

Basics of text processing, Lexical processing, Syntax and Semantics, Other problems in text analytics

## **AI Platforms & Reinforcement Learning (1 Week)**

Introduction to AI/Cognitive platforms, Understand the basics of Reinforcement Learning and its applications in AI

## **Mini Project (3 Weeks)**

[Click here for General Terms and Conditions – Applicable to all courses](#)