

COURSE PROSPECTUS

Name of the Group: *IT Group*

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

Course Code: *SW800*

Starting Date: *22nd April 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 concepts of Artificial Intelligence 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 to provide the participants in-depth knowledge and skills required by AI fields 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

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

Other Contents

a. Course Fees :

General Candidates: Course fee is Rs.35,000 + GST at actuals

SC/ST Candidates: Tuition Fees/Examination fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of Rs. 4,200.00 **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 along with any other caution/security deposits by the student will be forfeited.

Modular wise Course Fee: Not Applicable, Modular admission is also possible

b. Registration Fee:

An amount of Rs.1000/- (including GST) (nonrefundable) should be paid at the time of registering for the course. (Registration fee not applicable for SC/ST Students). However above the registration fee shall be refunded on few special cases as given below

- Student register and pay fee for more than one course and join for any one course, fee paid for remaining shall be refunded
- 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. 41,300.00 (Rs.35, 000 + GST in advance or as installments as given below

Fees	*Amount for General Candidates	Amount for SC/ST Candidates	Due Date (on or before)
**Advance Fee	Rs. 5,000.00	Rs. 4,200.00 (refundable after successful completion of course)	05.4.2019
1 st Installment	Rs. 36,300.00 (if advance deposit paid) else Rs. 41,300.00	Nil	22.4.2019

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

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

Fine will be applicable to late fee payment as given below

Sl. No.	Description	Fine
1	Late fee payment within two weeks after due date	18% (annually) of the outstanding dues
2	After second week of due date the candidate has to pay readmission fees along with the fine	Readmission fee Rs. 250/- plus fine of 18% (annually) of the outstanding dues
3	The candidate has to discontinue the course after third week from the due date	

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 : 30

f. How to Apply :

Students are advised to apply online @<http://nielit.gov.in/content/online-registration>. Payment towards nonrefundable registration fee of Rs.1,000/- (not applicable for SC/ST students) *may be paid through online payment gateway available in the Registration page or through any of the mode of payments specified in <http://nielit.gov.in/calicut/content/mode-payments-0>*

The Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account.

g. Selection of candidates : Selection is based on the marks in the qualifying degree.

h. Test/Interview : Not Applicable

i. Counseling/Admission : 22nd April 2019

j. Spot Admission : Unfilled/vacant seats are filled through spot admission. Spot admission (if open) will close within 15 days of Counseling/Admission of a particular course. On spot admission students should provide an undertaking saying that he/she is fully aware that he/she missed so much days of class and will not ask for extra classes or further extension of course.

k. Admission Procedure :

Students who have been selected for test/interview/counseling/admission are required to report to the Institute on the prescribed day by 9:30 hrs along with the following

- **Original and attested Copies of Proof of Age, Qualifications, etc**
- **One passport size photograph**
- **SC/ST Certificate (Original and two attested copies, if applicable)**
- **Govt. issued photo id card (Aadhaar mandatory for SC/ST candidates. Original and one copy)**

l. Discontinuing the course: No fees (including the caution/security deposit) under any circumstances, shall be refunded in the event of a student discontinuing the course. No certificate shall be issued for the classes attended.

A student can however, be eligible for module certificates (applicable only for courses which provide for modular admission) which he has successfully completed provided, he/she has paid the entire course fees. This is not applicable to SC/ST candidates availing fee concession. SC/ST candidates availing fee concession are eligible for module certificates only after completing the full course with required attendance

m. Course Timings : 9.30 am to 5.00 pm

n. Location and how to reach :

NIELIT Calicut is located very close to NIT campus and is about 22Kms from the Calicut (Kozhikode) city. A number of buses (Buses to NIT via Kunnamangalam) are available from "Palayam Bus Stand and KSRTC Bus Stand". The bus stop at our Institute is called "Panthrand" and is one stop before NIT. The bus fare is around Rs.20/- from Calicut City to NIELIT.

Calicut (Kozhikode) is well connected by Rail, Road and Air from different parts of the country. The maximum and minimum temperatures range between 35°C and 20°C.

o. Course enquiries :

Students can enquire about the various courses either on telephone or by personal contact between 9.15 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm) Monday to Friday.

p. Important Dates:

Last date for submitting application : **29-Mar-2019**
Selection intimation through mail/website : **01-Apr-2019 (After 5.00 PM)**
Counseling/Admission : **22-April-2019**

q. Placement: Placement Assistance shall be provided. [Partial List of placements attached here](#)

r. Hostel facilities :

Hostel accommodation is available for boys and girls on monthly or daily chargeable basis. The hostel fee varies from Rs.1,400 /- to Rs.1,500/- per month depending on the type of accommodation. However, students are required to pay the hostel fees for the entire duration of the course for which they are seeking admission at the time of joining the course itself.

s. Boarding facilities :

Canteen & Mess facility is available for both boys & girls, students, those who avail mess facility should pay monthly mess fee @Rs.130/*- per day. An amount of Rs.1,000/- should be paid as mess advance to the Canteen Contractor at the time of joining the mess which will be adjusted in the last month mess fee.

**as per the present rate of contract agreement*

An amount of Rs.3,000/- should be paid as caution deposit (hostel & mess) at the time of joining the hostel which will be refunded/adjusted at the end of the course. For students not availing hostel facility, Rs.1,000/- will be the caution deposit

t. Lab Facilities

The IT 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.

u. 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)