

# **Diploma in Artificial Intelligence**

**(Syllabus Applicable w.e.f. Academic Session 2018-19)**



**Uttarakhand Residential University**  
**Almora, Uttarakhand-263001**

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Note: This curriculum is subject to change based on University Guideline

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## **INTRODUCTION - ARTIFICIAL INTELLIGENCE**

If someone enthusiastic to take an AI course, it's useful to ask: "What's AI?"

Artificial Intelligence (AI) is the science of making machines do things that would require intelligence if done by human. That means, AI is not specifically related to computer science. This is a field of study that incorporates human behavior, biology, psychology, and even linguistic.

AI is Computational models of human behavior and Humans' Thought. AI is systems which behave intelligently and rationally. Its helps in developing programs that behaves & operates (externally & internally) like humans. AI has great significance in near future and it has power to change the life of world.

In other words, we can mention that AI deals with simulation of intelligent behavior in computers and demonstrates the capability of machine to imitate intelligent human behavior.

## **WHY ONE SHOULD STUDY ARTIFICIAL INTELLIGENCE**

**Wide Scope:** AI is amazingly interesting study area that mixes computer science, cybernetics, philosophy, economics, Biology, Chaos theory and fuzzy logic together. Artificial Intelligence has a lot of scope in India mainly because we have a lot of population and also because a majority of that population is below the age of 35. We can already find a lot of companies like Amazon and Google dominating by selling their products like Alexa and Google Home which can help the consumers automate some tasks by speaking.

Although, we do not have a whole of lot of physical devices in India which can be automated since India is far behind the newer technologies that are being used in the world. But in a few years I'm sure India will have a lot of people making use of AI in one way or the other.

Once the government provides education to the rural areas of India, it will bring out a lot more people in the market who will be eligible to use such technology. Since they are literate, this allows them to be able to use AI for their own tasks. Most of which will be done through phones, since this class of people won't have the financial backing to buy an Alexa, per say.

As of now we can only have AI in India in the backend services. Not as a frontier like Alexa, as it will be too early for the Indian public to understand and make use of it. With the strong promotions done by the current BJP government towards Digital India, we see that the number of people using smartphones have more than doubled in these past few years. And the rise of Jio has performed as a catalyst bringing out free internet to the people of India, thus making a commendable push towards a more digital and Smarter India.

**Opportunities in AI field:** Just as Google, Oracle, Microsoft, and Amazon are battling to serve the cloud computing and machine learning needs of the US government, the next three to five years may lead to a similar dynamic within India. As the Indian government pushes for digitization and enacts more AI initiatives, private firms will flock to win big contracts – adding to the pool of funds to develop new technologies and spin out new AI and data science-related startups. More and more Indian startups and established tech firms are beginning to implement AI in their products and services. In the field of AI, the possibilities are truly endless. Every another day we find new dimensions of inventions in AI like Google's plan to build quantum processors or crowd –funding efforts for robotic assistants like Jibo

## **WHY THERE IS NEED OF GOOD AI COURSE**

Computer science and artificial intelligence go hand-in-hand towards creating AI development. As there is huge job opportunity in upcoming years in the field of AI, India would need significantly more resources to meet the demand. Students who are interested in machine intelligence require basic knowledge in many aspects of computer science like computational language and algorithms. There

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are meager artificial intelligence courses in India which are running to groom AI resources. An advance certificate course on AI can bridge the gap between demand and supply of AI resource.

### **WHO SHOULD OPT ARTIFICIAL INTELLIGENCE?**

Candidates who have keen interest in studying mathematics, especially mathematical logic, are most suitable for the course. They get to learn about sciences, particularly Physics and Biology. For the biological approach to AI, they need to be broadly familiar with psychology and the physiology of the nervous system. They would also be adequately proficient in programming languages such as C, and Prolog. Computer scientists who can work on real life challenging problems should definitely opt for the course to get better at basic machine languages. Candidates interested in Mathematics, programming languages and sciences, should ideally go for the course.

Truly exciting thing about AI course is that the jobs which you are aiming at present may evolve into something beyond your imagination by the time you start working in the field.

### **Diploma in AI ELIGIBILITY**

**Bachelor's/Master's degrees in Computer Science/Engineering/Math/Statistics/Economics/Science**

#### **Key Features**

- Interactive classroom sessions
- Projects and practical assignments after each module
- Guaranteed Internship and placement assistance
- Faculty from the industry
- Work on Live Projects

#### **DURATION OF COURSE: 1 YEAR**

#### **COURSE OUTLINE**

<b>SEMESTER # 01: THEORY</b>				
<b>SL:NO</b>	<b>CODE</b>	<b>TITLE</b>	<b>DESCRIPTION</b>	<b>MARKS</b>
01	BITI - 1806101	Fundamental of AI	This course dives into the implementation technologies behind the AI, and further explores how these mechanisms and associated technologies architecture work.	100
02	BITI - 1806102	Fundamental of Machine learning	This course will cover the definition of machine learning, characteristics & use.	100
03	BITI - 1806103	Computer programming	This course will cover Different kind of programming uses in computer program, characteristics & kinds of program.	100
04	BITI - 1806104	Fundamental of Searching Algorithm	Complex Data Searching topics are addressed by this course, which introduces searching algorithm patterns with common threats.	100
<b>SEMESTER # 01: PRACTICAL</b>				
01	BITI – 1806105	AI Lab	A hands-on lab during which participants apply the patterns, concepts, techniques, and mechanisms	50

			covered in AI.	
02	BITI - 1806106	Computer programming Lab	A hands-on lab during which participants will practice on Computer programming.	50
<b>TOTAL</b>				<b>500</b>

<b>SEMESTER # 02: THEORY</b>				
<b>SL:NO</b>	<b>CODE</b>	<b>TITLE</b>	<b>DESCRIPTION</b>	<b>MARKS</b>
01	BITI - 1806201	AI programming	This course covers the essential building blocks to learn AI programming.	100
02	BITI - 1806202	Natural-language processing	This course covers the essential building blocks of Natural-language. Topics include the definition of language, characteristic, and processes of Natural-language.	100
03	BITI - 1806203	Fundamental of Data analysis	This course dives into the Data operation, management and further explores how these mechanisms & architecture works.	100
04	BITI - 1806204	System Architecture	This course will cover the Architecture of AI systems & how all things work together.	100
<b>SEMESTER # 02: PRACTICAL</b>				
01	BITI - 1806205	AI programming Lab	A hands-on lab during which participants apply the patterns, models, concepts, techniques, and mechanisms covered in AI programming, in-order to solve programming problems.	50
02	BITI - 1806206	Internship & Project	This topic will cover to make a live project of Artificial intelligence.	50
<b>TOTAL</b>				<b>500</b>