

# International Summer School- Manipal University Jaipur [ISSMUJ]-2025

**[Hybrid Mode]**



## Course Overview

### **Name of Course- Generative AI, Prompt Engineering and Large Language Models for Everyone**

Name of instructor: Dr. Vaibhav Bhatnagar and Dr. Linesh Raja

Session: May-July 2025

Language of instruction: English

Number of contact hours: 36

Credit awarded: 03

Prerequisite: NA

### **Objective of Course/Project:**

- Introduce the foundational concepts of Generative AI and Large Language Models (LLMs) in an accessible manner.
- Explain how models like ChatGPT, DALL-E, and others generate human-like text and content.
- Familiarize learners with the underlying architecture of LLMs, such as transformers.
- Enable participants to apply generative AI tools in diverse domains like education, business, healthcare, and the arts.

### **Syllabus:**

An Introduction to Artificial Intelligence, Introduction to Generative AI, Commonly Used Generative AI Platforms, Prompt Engineering, Working with Prompts, Generative AI in the Office Environment, Generative AI in Various AI Tools, Introduction to Large Language Models, Generative AI Project Lifecycle, Sequential Data, RNNs, Encoder Decoder Model.

### **Organisation of Course/Project:**

Total contact Hours: 36		
1st week:	10 hrs (classes)	An Introduction to Artificial Intelligence, Introduction to Generative AI, Commonly Used Generative AI Platforms

2nd week:	10 hrs (classes)	Prompt Engineering, Working with Prompts, Generative AI in the Office Environment, Generative AI in Various AI Tools
3rd week:	10 hrs (classes)	Introduction to Large Language Models, Generative AI Project Lifecycle
4 <sup>th</sup> week:	6 hrs (Classes)	Sequential Data, RNNs, Encoder Decoder Model

**Mode of lectures:** Hybrid

**Course/Project Plan:**

Lecture no.	Topic	Lecture mode	Instructor
L: 1-3	An Introduction to Artificial Intelligence, Foundations of Artificial Intelligence, Applications and Implications of Artificial Intelligence	Lecture	Dr. Vaibhav Bhatnagar
L: 4-5	Introduction to Generative AI, Fundamentals of Generative AI, Applications of Generative AI	Lecture	Dr. Vaibhav Bhatnagar
L: 6-7	Commonly Used Generative AI Platforms, Introduction to Chatgpt, Introduction to Gemini, Introduction to Copilot	Lecture	Dr. Vaibhav Bhatnagar
L: 8-9	Prompt Engineering, Harnessing the Power of Prompt Engineering	Lecture	Dr. Vaibhav Bhatnagar
L: 10-11	Working with Prompts, Working with Advanced Prompts	Lecture	Dr. Vaibhav Bhatnagar
L:12-13	Generative AI in the Office Environment, Generative AI in Education	Lecture	Dr. Vaibhav Bhatnagar
L:14-15	Generative AI in Digital Marketing, Generative AI in Agriculture	Lecture	Dr. Vaibhav Bhatnagar
L: 15-19	Generative AI in Healthcare, Generative AI in Art and Music	Lecture	Dr. Linesh Raja
L:20-21	Generative AI for Programming	Lecture	Dr. Linesh Raja
L: 22-25	Generative AI for Programming	Lecture	Dr. Linesh Raja

L: 26-30	Introduction to Large Language Models	Lecture	Dr. Linesh Raja
L: 31-34	Generative AI Project Lifecycle	Lecture	Dr. Linesh Raja
L: 35-36	Sequential Data, RNNs, Encoder Decoder Model	Lecture	Dr. Linesh Raja

### Brief profile of the instructors:



Dr. Vaibhav Bhatnagar is currently serving as an Associate Professor in the Department of Computer Applications, School of Computer Science, Manipal University Jaipur, India. Academically, he holds a PhD, an M. Tech. (Data Science), and an MCA (Silver Medalist), along with a BCA degree, in which he was awarded the Gold Medal. With over a decade of academic and research experience in reputed educational institutions, he has made significant scholarly contributions, authoring more than 50 research papers indexed in Scopus and Web of Science, including over five publications in Quartile I journals. He earned his PhD at the early age of 27

in the domain of Information Technology. He has successfully completed a research project funded by the Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Government of India, as well as a student research project funded by DST, Government of Rajasthan. He has served as Guest Editor for several special issues in Web of Science-indexed journals and is also the author of three ISBN-certified books. His current research interests focus on data visualization, deep learning, and data analytics. He holds industry certifications in Tableau and other data visualization tools and brings extensive teaching experience in Tableau, Power BI, Looker Studio, and various data analytics techniques, catering to both national and international students.



Dr. Linesh Raja is currently working as an Associate Professor at the Department of Computer Applications, Manipal University Jaipur, India. Additionally, he is also the Deputy Director of Corporate Relations & Placements at MUJ. Altogether he has 15+ years of teaching and research experience. In the year 2021, he completed one DST-SERB Matrix-funded project in the capacity of co-investigator. He earned a Ph.D. in computer science in the year 2015 from JNU, Jaipur. Before that, he completed his master's and bachelor's degree from Birla Institute of Technology, Mesra,

Ranchi, India. Dr. Linesh is the domain expert of computer programming and data visualization. He delivered several workshops and seminars in the field of data visualization. Dr. Linesh has published several research papers in the field of medical imaging, wireless communication, mobile network security, and the Internet of things in various reputed national and international journals. He has chaired various sessions of international conferences. He has also edited a Handbook of Research on Smart Farming Technologies for Sustainable Development, IGI Global. At the same time, he is also acting as a guest editor of various reputed journal publishing houses, such as Taylor & Francis, Inder science, and Bentham Science.