



Nano Masters™
German varsity for Advanced Studies

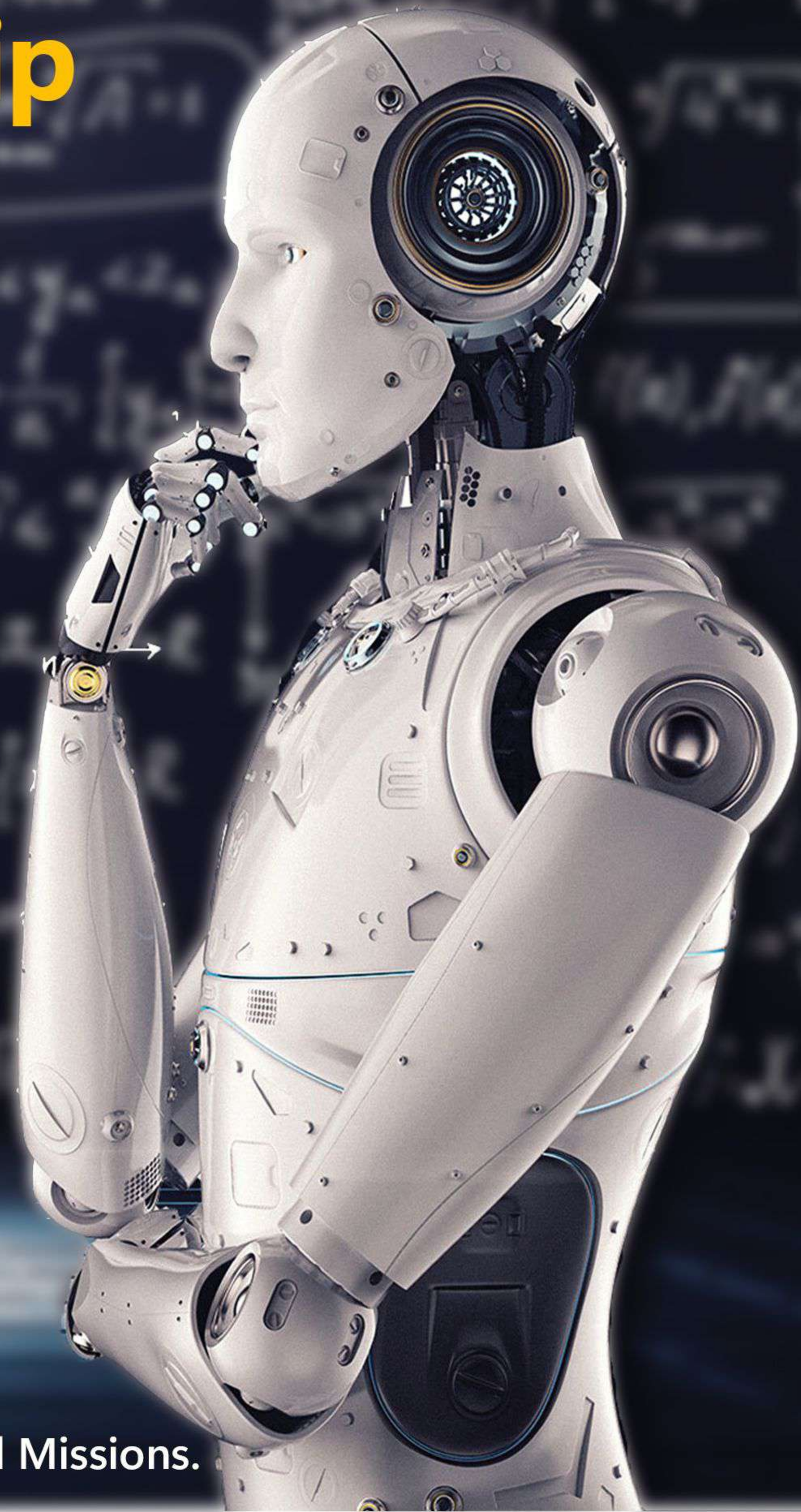


AI & Applications and Technology Leadership

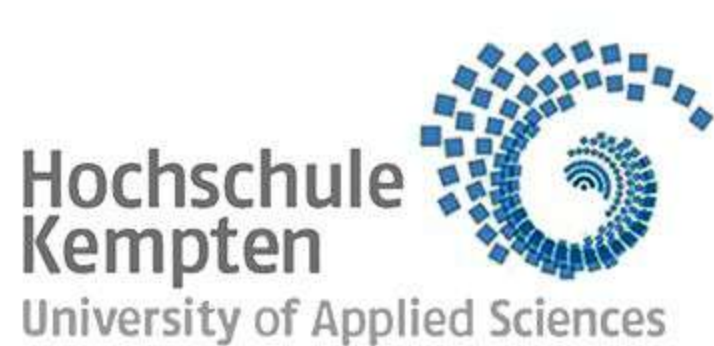
Opportunity to Become
Techno-Management Leaders

COURSE EXCELLENCES

- Industry Driven Curriculum
- Emerging Fields Focus
- Leadership Development
- Expert Instruction
- Flexible Learning
- Interactive Learning



Content & Certification as per **International** and **Indian** Skill Missions.



GERMAN VARSITY™
FOR ADVANCED STUDIES

ABOUT



"**NaNo Masters**" is a unique qualification program, designed by Germanvarsity along with German universities and industries, offering international students from partner universities with **cutting-edge knowledge and German equivalent qualifications**. This program equips students for success in **employment and higher education** in Germany, particularly at public universities and top industries.

- **Structure:** Five specializations with four sub-courses with (20 credits).
- **Flexibility:** Credit-based courses run parallel to home university studies (semesters 5-7).
Earn additional honors/minor degrees (subject to home university policies).
- **Benefits:** Gain a competitive edge with **industry-linked programs** and recognition from German employers.
Pursue prestigious Master's programs in German universities with courses delivered & assessed by our partners.

OUR UNIQUENESS

Our goal is to cultivate every engineering student into a Tech - Management Leader. To achieve this, we've implemented a curriculum that equally emphasizes **hands-on technological experience** through capstone projects and strategic thinking through **design thinking and innovation management**. This approach aligns with industry demands in both India and Europe. Initially, we offer this as a specialized minor or honors track for Indian students to acquire in-demand skills. Our long-term vision is to expand course opportunities to Europe by addressing and overcoming cultural barriers.



COURSE RESOURCES

Prof. Alexander Ferrein has **over 30 years** of experience with mobile robotics and artificial intelligence. Professor had expertise in the domains of neural networks and artificial intelligence. The professor has been a research professor at FH Aachen University of Applied Sciences since 2011. The professor has created numerous innovative applications and been involved in several research projects.



Prof. Alexander Ferrein
MOBILE AUTONOMOUS SYSTEMS & COGNITIVE ROBOTICS
INSTITUTE, ROBOTICS AND FOUNDATIONS OF
COMPUTER SCIENCE
FH Aachen University, Germany.

Prof. Bertram Lohmüller, a seasoned academic with **over 35 years** of experience at SGIT Steinbeis University, directs the Steinbeis Institute for Resource Management and Renewable Energies, which focuses on green technology transfer, innovation management, leadership, and strategic planning.



PROF. DR. BERTRAM LOHMÜLLER
DIRECTOR
Steinbeis Global Institute Tubingen (SGIT),
Steinbeis University

Mr. Marcel Stüttgen have involved in the field of Artificial Intelligence nad Mobile robotics since 2018. Under the guidance of Prof. Ferrien at FH – Aachen University of Applied Sciences, Marcel had expertise in the field of Artificial Intelligence and AI Networks. Marcel, had involved numerous academic and indurtial AI projects.



Mr. Marcel Stüttgen
DEPARTMENT OF ROBOTICS AND FUNDAMENTALS
OF COMPUTER SCIENCE
FH Aachen - University of Applied Sciences

COURSE MODULE OVERVIEW

PART - 1

MODULE

01

DESIGN THINKING

- Introduction into the course and clarification of the project work
- Introduction into Ideation & Design thinking
- Ideation & Design Thinking Part 1
- Ideation & Design Thinking Part 2
- Ideation & Design Thinking Part 3
- Methods of Idea Evaluation Part 1 + Discussion of project work
- Methods of Idea Evaluation Part 2
- Discussion of project work
- Methods of Idea Evaluation Part 3
- Colloquium project work

MODULE

02

INNOVATION LEADERSHIP

- Basics of innovation Part 1
- Basics of innovation Part 2 +Introduction to the E-Learning Modules
- Basics of innovation Part 3
- Where ideas come from Part 1
- Where ideas come from Part 2
- Where ideas come from Part 3
- Group work project/case study
- Presentations of the project work results
- Group work project/case study
- Group work project/case study

PART - 2

MODULE

01

INTRODUCTION TO AI & MOBILE ROBOTS

- Intro and Course Outline
- Robotics: Middleware
- Tutorial: Intro to ROS + Webots Simulation
- Robotics: Sensors
- Robotics: Kinematics
- Tutorial: Rviz and tf
- Robotics: Collision Avoidance and Control
- AI: Problem Solving through Search
- Robotics: Path planning
- Tutorial: ROS Navigation Package

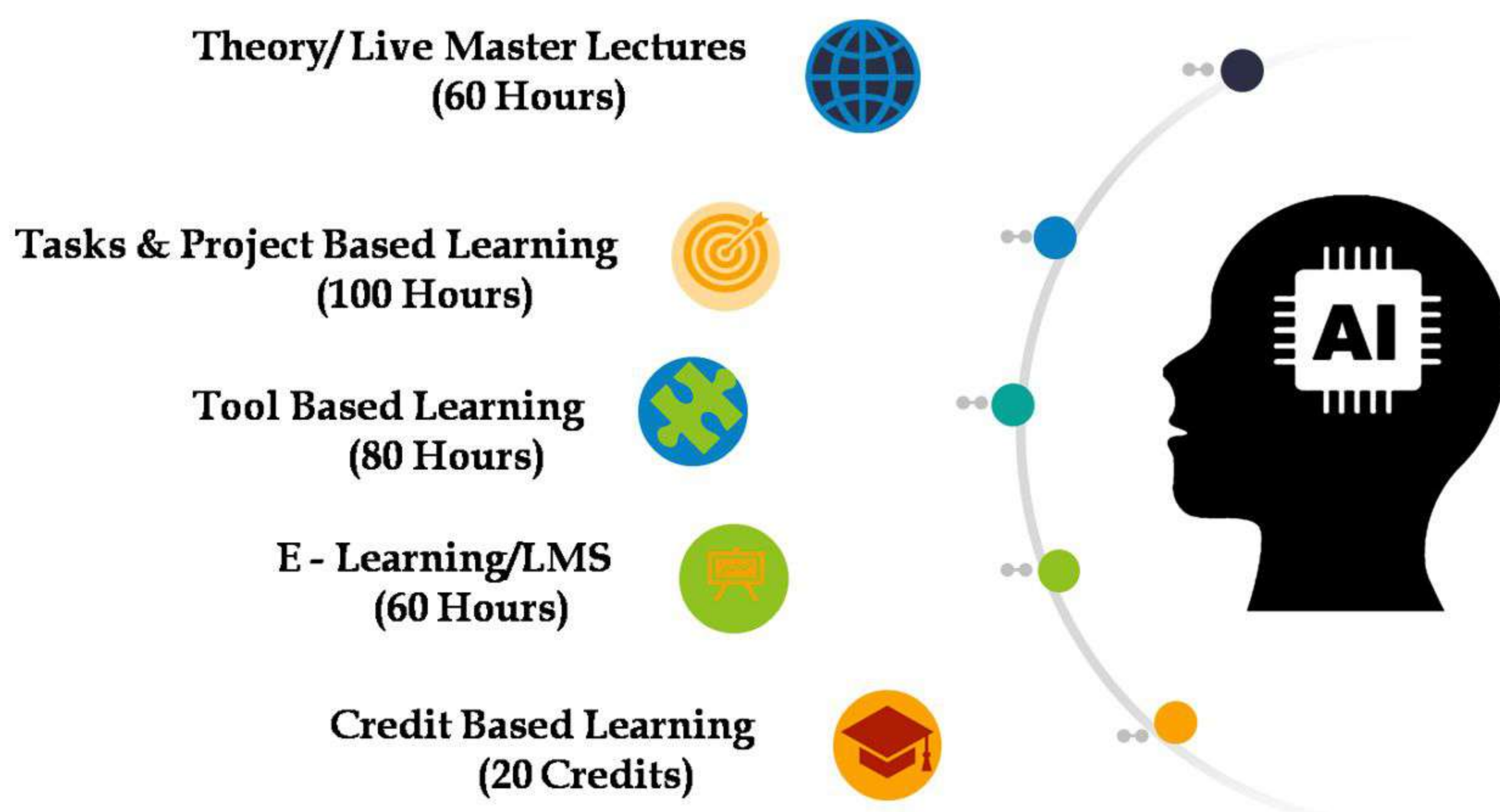
MODULE

02

ROBOT (MOBILE) PROGRAMMING & APPLICATIONS

- Robotics: Localisation
- Tutorial: AMCL
- Robotics: Computer Vision
- AI: Neural Networks
- Robotics: Object Classification with CNNs
- Tutorial: Computer Vision with ROS
- Robotics/AI: High-level Control
- Tutorial: ROS Actions
- Wrap-Up
- Tutorial: Final Practical Assignment

COURSE STRUCTURE



COURSE ACCREDITATION & CERTIFICATION

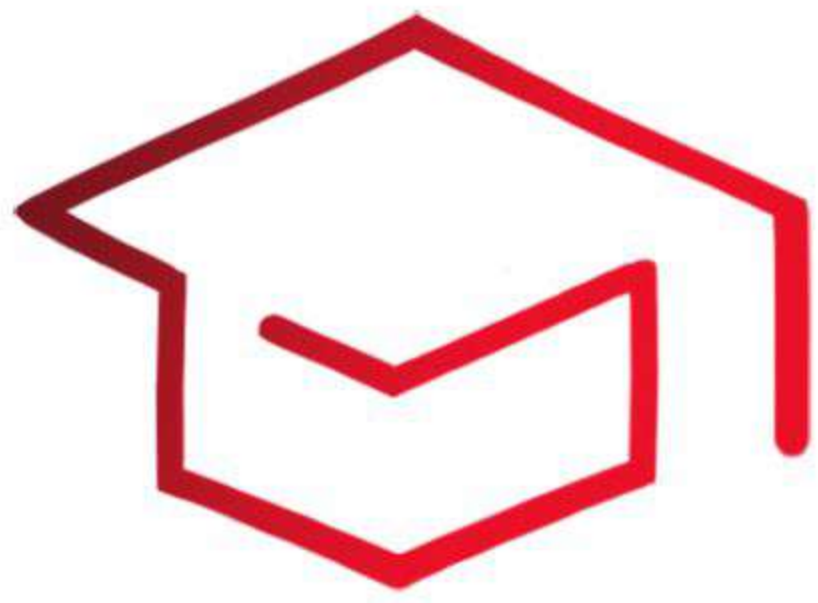


International

GermanVarsity have adopted **ESCO** (European Skills, Competences, and Occupations) standards for the content and certification processes.

National

Course, is accredited and certified by **ESSCI** and **MEPSC**, Government of India.



GERMAN VARSITYTM

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INDIAN OFFICE LOCATIONS

