Name of the Program(s): - Diploma in AI (Artificial Intelligence) and Machine Learning Engineering (DAIMLE), Advanced Diploma AI (Artificial Intelligence) and Machine Learning Engineering (ADAIML), or Certified AI Application Engineer (CAIAE™) or Certified Artificial Intelligence Engineer (CAIE™), or Certified Artificial Intelligence Consultant (CAIC™).

Are you interested in earning your Diploma in Artificial Intelligence (AI) and Machine Learning Engineering (MLE) Professional degree? (DAIMLE or ADAIML or CAIAE or CAIC) ™ certification, but you're unsure how to start the process? While this is a great step for your individual career, it doesn't have to be a complex one really if you study from GEPEA. This is the ultimate guide on DAIMLE™ or ADAIML ™ or CAIAE, or CAIE, CAIC certification and it can be your easy roadmap for navigating this process. You may explore some common questions you might have about Artificial Intelligence and Machine Learning certification holder.

What is Artificial Intelligence (AI) and AI and ML Diploma Program?

Intelligent machines have 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.

The program attempts to nurture aspirants in some of the core ideas and also provide the skill in Machine Learning (ML), Deep Learning and Artificial Intelligence (AI) that would help the students to raise their level to work on real world problems with cutting edge AI & ML strategies.

What is objective of Artificial Intelligence and Machine Learning Training?

The course is designed to make the participants capable of solving industry standard problems in artificial intelligence. After completing the course, the participants will be capable of doing the following.

• They will be able to formulate the right AI problems that can be solved with the raw data available.

• They will be able to apply various machine learning algorithms on structured data to develop machine learning models and compare them to obtain the most suitable model and by using suitable metrics.

• They will be able to develop suitable machine learning models using unstructured data using various machine learning algorithms including deep learning, natural language processing methods, computer vision and reinforcement learning.

ARTIFICIAL INTELLIGENCE OR MACHIENE LEARNING ENGINEERING PROFESSIONAL TRANINGS
Training Hours: *80 hours or 100 hours.*

Program Duration: 6 Months (Diploma) or 1 Year (Advanced Diploma or Certifications).

Admission Requirements: Diploma or an associate degree in IT (Information Technology) or Computer Science or the global equivalent degree.

Other Requirements: Basic Programming Knowledge or prerequisites are needed to take this course, but have some extra skills using laptop/computer and internet, E-mail for communications will help.

Training Delivery: The course duration will comprise 60 hours or 80 hours of self-study home based or lecture based delivery. The 60 or 80 hours will be delivered in 10 sessions online distance learning based on given course materials.

Syllabus Outline

Serial No.	Syllabus component	Assignment **TMA** (Tutor Mark Assignment) or **Case Study**	Board Questions (**OBS** = Open Book System) Exam.	**MCQ** (Multiple Choice Questions) 10 Questions (each @ 2 marks)
	9 parts will count 7 hours each (9 courses x 7 hours study each = 63 hours total) + Project Exercises Minimum 17 hours **= Grand Total 80 Hours. OR** **Advanced Diploma or Certification** **9 parts will count 7 hours each** (9 parts Lessons x 7 hours study each= 63 hours total + Additional One Course @ 7 Hours) + Project Exercises Minimum 30 hours **= Grand Total 100 Hours.**	**45**	**35**	**20**
1	**Diploma in AI (Artificial Intelligence) and Machine Learning Engineering (DAIMLE),** **Advanced Diploma AI (Artificial Intelligence) and Machine Learning Engineering (ADAIML) or Certified AI Application Engineer (CAIAE), or Certified Artificial Intelligence Engineer (CAIE™) or Certified Artificial Intelligence Consultant (CAIC™).**	*80 Hours (Time) or 100 Hours (Time)*		
	SEMESTER -1 **1) Artificial Intelligence & Essentials of AI:** **Artificial Intelligence – A Modern Approach:** i. Artificial Intelligence ii. Problem Solving iii. Knowledge, Reasoning and Planning iv. Uncertain Knowledge and Reasoning v. Learning vi. Communicating, Perceiving and Acting **Essentials of Artificial Intelligence (AI):** Part 2: Search Part 3: Knowledge Presentation (Logic) Part 4: Knowledge Presentation (Other Techniques) Part 5: AI Systems	**45** 7 Credit Hours @ per Subject	**35**	**20**

	2) Introduction to Machine Learning: Introduction Destiny Estimation Optimization Online learning and Boosting Conditional Densities Kernels and Function Spaces Linear Models **3) Machine Learning Basic Concepts:** Terminology Data Types The Data Science Process Machine Learning Interdisciplinary Fields Machine Learning Definition Supervised VS Unsupervised Learning Train, Validation and Test etc. **4) Dive into Deep Learning:** Introduction Preliminaries Linear Neutral Networks Multilayer perceptions Deep Learning Computation Modern Convolutional Neural Networks Modern Recurrent Neural Networks Attention Mechanisms Computational Performance Natural Language Processing: Applications Appendix: Mathematics for deep learning **5) Reinforcement Learning:** 1. The reinforcement learning Problem **i. Tabular Solution Methods** 2. Multi-arm Bandits 3. Finite Markov Decision Processes 4. Dynamic Programming 5. Monte Carlo Methods 6. Temporal-Difference Learning 7. Eligibility Traces 8. Planning and Learning with Tabular Methods **ii. Approximate Solution Methods** 9. On-policy Approximation of Action Values 10. Off-policy Approximation of Action Values 11. Policy Approximation **iii. Frontiers** **12.** Psychology **13.** Neuroscience **14.** Applications and Case Studies	7 Credit Hours @ per Subject		

SEMESTER -2

6) Industrial Automation and Robotics: AUTOMATION BASIC LAW AND PRINCIPLES BASIC PNEUMATIC AND HYDRAULIC SYSTEMS PUMPS AND COMPRESSORS FLUID ACCESSORIES CYLINDERS AND MOTORS CONTROL VALVES CIRCUITS PNEUMATIC LOGIC CIRCUITS FLUIDICS ELECTRICAL AND ELECTRONIC CONTROLS TRANSFER DEVICES AND FEEDERS ROBOTICS ROBOTICS SENSORS ROBOT PROGRAMMING APPLICATIONS OF ROBOTS **7) Industrial and Service Robots:** **Industrial Robotics (**Robotics 1**)** Evolution toward industrial robots The first industrial robot Robots – a 50-year journey Diffusion industrial robots in operation worldwide Diffusion robots by main applications Annual supply new robots by industrial sectors Annual supply new installations in top markets (countries) Industrial & service robots A day in the life of an industrial robot What a robot should do and what cannot do Rise in Industrial And Service Robots Significance Of This Area Of Study Service Robot Case Studies in Silicon Valley Dissecting The Controversy About The Robotics Industry Service robots: The next big productivity platform Robots will replace customer service agents – thank god for that Rise of the service robots; comparison to industrial robots Business service robots: The invisible unarmed The robots are coming Moving beyond traditional methods of automation Will Robots Take Over Field Service? **8) Automatic Speech Recognition:** Automatic Speech Recognition Speech Recognition Architecture Applying the hidden Markov Model Feature Extraction: MFCC vectors Computing Acoustic Likelihoods The Lexicon and Language Model	7 Credit Hours @ per Subject		

Search and Decoding Embedded Training Evaluation: Word Error Rate ### 9) **Data Analysis and Visualization using Python:** Introduction to Data Science with Python The importance of Data Visualization in Business Intelligence Data Collection Structures File I/O processing and Regular Expressions Data Gathering and Cleaning Data Exploring and Analysis Data Visualization **OPTIONAL SUBJECTS (For advanced Diploma student have to complete/choose one subject from below mentioned alternatives):** ### Advanced Machine Learning with Deep Learning ### Industrial Automation and Control ### Service Robots ### Introduction to Intelligent Robotics ### Speech and Language Processing ### Pattern Recognition and Machine Learning ### Explorations in AI and Machine Learning **FOLLOWING ADDITIONAL TASKS SHOULD HAVE TO DONE BY PARTICIPANTS OR STUDENTS:** a) Artificial Intelligence and Machine Learning Engineering Certification Test MCQ Questions answer practicing b) Artificial Intelligence and Machine Learning Engineering Test Board Questions/TMA (Tutor Mark Assignment) c) Artificial Intelligence and Machine Learning Engineering Case Studies **Exercises and projects** **Some Videos Lectures on AI and Machine Learning (A to Z):** i) Artificial Intelligence Full Course | Artificial Intelligence Tutorial for Beginners https://www.youtube.com/watch?v=JMUxmLyrhSk https://www.youtube.com/watch?v=SJ_6TD6X8UE	7 Credit Hours @ per Subject 7 Credit Hours @ per Subject		

ii)	Artificial Intelligence Course | AI Full Course | Artificial Intelligence Tutorial https://www.youtube.com/watch?v=PXwUEJVSAeA			
iii)	Python Artificial Intelligence Tutorial - AI Full Course for Beginners in 9 Hours https://www.youtube.com/watch?v=XIrOM9oP3pA			
iv)	Artificial Intelligence Full Course in Python | Artificial Intelligence Tutorial https://www.youtube.com/watch?v=jRTRjORaKQU			

	Project/Thesis/Case Studies			
	Student have to take a Project/Thesis/Case studies as per their major subject in order to complete his/her Diploma/Advanced Diploma. - In case Project/Thesis, respective students should submit 25 to 45 (A4 Size) pages long report. *Course Tutor or Concern Authority will assign/fix Project/Thesis Topic or Title with consultation with respective student.* - In Case Studies, respective students should submit case studies answer script in written form to the GEPEA within stipulated time frame. *Concern Authority will assign case studies question paper in time.*			
	TOTAL HOURS REQURIED TO BE COMPLETED FOR THE AI and MLE DIPLOMA/ADVANCED OR PROFESSIONAL CERTIFICATIONS = 9 parts will count 7 hours each (9 courses x 7 hours study each = 63 hours total) + Project Exercises Minimum 17 hours **= Grand Total 80 Hours. OR Advanced Diploma or Certification 9 parts will count 7 hours each** (9 parts Lessons x 7 hours study each= 63 hours total + Additional One Course @ 7 Hours) + Project Exercises Minimum 30 hours **= Grand Total 100 Hours.**			

WHY STUDY ARTIFICIAL INTELLEGIENCE (AI) AND MACHIENE LEARNING ENGINEERING DIPLOMA?

AI AND MEL contributes in Economy, Business, and Industries in many ways such as Artificial intelligence can benefit the economy by helping the evolution of work. Robots and AI will help people perform their tasks better, not take their jobs. The combination of man and machine will be unstoppable. With deep learning and machine learning, AI can become smarter over time, thus increasing a business' efficiency. AI will also significantly reduce the probability of human error

and study historical data to cut costs. Facial recognition, pattern identification, and digital content analysis will be huge. Academic research, health sciences, and tech companies will enjoy enhanced capabilities.

CAREERS SCOPE OF INFORMATION TECHNOLOGY AND COMPUTER SCIENCE?

Careers in both AI and MEL (Machine Learning Engineering) can take you in many directions, but they do have distinct paths.

• AI Engineer
• AI Research Scientist, Machine Learning Researchers.
• Data Engineer, Data Scientist. Data Mining and Analysis.
• Software Engineer
• Business Intelligence (BI) Developer and so on.

COURSE MATERIAL

Besides using the traditional books GEPEA has also modernized the learning process by providing students with online portal consisting of –

- **Study Materials (Soft copies)** – PDF of books are provided to students making studies nomadic & convenient. GEPEA Department of Students Affairs will assign Study Materials via Email or other methods after registration and admission.

- The focal point of **GEPEA** study materials is enhancing Practical Education. **GEPEA** Kit provided to applicants is a world full of practical scenarios, explanation in terms of facts rather than theoretical phrases. Customized to be self-explanatory & easy to understand.

- **Faculty Guidance** – GEPEA panel of intellectuals guide students personally with regards to any query through email about any concept in the notesprovided, being the author of the same.

EXAMINATION

GEPEA Professionals are given the privilege to answer exams from any examination center in the world along with the freedom to pick the exam schedule for the same, as time permits in the particular examination months of GEPEA. Students are allotted 2 modes of examinations – Home Based/Center Based.

- Question papers would be drafted by **GEPEA** panel of veteran professors which would be TMA (Tutor Mark Assignment), OBS (Open Book System) and MCQ study pattern. A single course will consist 100 marks based on these three pattern of exam types. In each program will consist a major (Thesis Research) course or theory in order to complete the respective Diploma Program.

- This unique & novel methodology teaches a student how to assess business situations and make decisions based upon those assessments, allowing students to display their potential.

- In case of home based/distance learning exams question paper would be emailed to the students, which they would have to answer & courier back to GEPEA office or GEPEA directed authority in therespectable exam slab.

- Candidate also has the option of appearing for Center Based Examination wherein they would have to visit one of the many GEPEA exam centers &complete answering the exam in the duration of 3 hours which wouldn't be an open book examination.

CASE STUDY METHOD & STUDY MATERIAL:

Today communication systems have advanced so much that it is much easier, convenient and quicker to gain expertise via online distance learning. GEPEA offer potential students the opportunity to study through an autonomous online distance learning program. This means that people who can't get traditional further education can still achieve what they want and get their qualifications through Online Distance Learning. That gives the opportunity for a much wider range of people to get the qualifications that they want. Today, thanks to technological advances, higher education is more readily available to those who want it.

GEPEA is an institute of excellence offering widest range of autonomous programmes in the field of Business Management and different Professional Training education. In response to the rapidly changing economic environment and the process of globalization, the Academy has made sustained efforts to bring an international perspective to all its wide range of areas and activities.

BENEFITS AND FETURES:

(i) **Flexible Programs & Curriculum:** You can earn and study at the same time! From GEPEA International Curriculum, Flexibility is the biggest advantage of distance learning courses. This stands true especially if you are a working professional. Not everyone has the luxury of taking their own time to finish their studies. For those who had to take a break from studies to start working, such courses are a boon and provide the opportunity to pursue higher education.

(ii) **Saves Time & Energy:** You save up a lot of time and energy on commuting. You can stay at any place and pursue a course that is available at GEPEA. Or you might be based out of a remote village or town which does not have enough options for higher studies. Distance learning courseseliminate these obstacles.

(iii) **MCQ, Case Based Learning:** MCQ, A Case-based approach engages students in discussion of specific situations, typically real-world examples of European, American, African, Asian and Indian companies. Allowing the students to put their theoretical knowledge to practice.

(iv) **Study at your own Pace**: Not everyone has the same pace of learning. Some students pick up things fast, others need time to grasp a concept. Oneof the biggest advantages of distance learning is that you can study at a pace that is comfortable for you.

(v) **Saves Money:** These courses are almost always cheaper as compared to their on-campus counter-parts. You also cut down on the costs incurred while commuting etc.

(vi) **Personal Fulfillment:** An MBA is the key to unlocking both a professionally and personally rewarding future. Education is the foundation upon which you can build lifelong business and personal achievements. The GEPEA MBA program is designed to enrich your personal life, as well as tokeep you informed about a constantly changing industry.

(vii) **Convenient:** You can submit your assignment with the click of a button or simply drop it off at a post-office! It's sometimes as simple as that!

(viii) **24X7 Access to Study Material & fellow Students:** This is the best way to study if you are comfortable with internet and technology. You can access your study material online whenever you want and also clear doubts, exchange views and discuss with your virtual class-mates!

(ix) **Study any Topic You Want:** Since you'd already have all your books/online study material with you, you can pick up any topic/chapter that interests you and tackle that first! This way your interest in the subject is

sustained.

(x) **Higher Level of Self-Confidence:** The knowledge gained through our Correspondence MBA program will enhance your effectiveness in your current position and help define your future career path. It will sharpen your skills in critical business areas, giving you the self-confidence youneed to become a leader in your profession.

(xi) **Specialization:** We provide more than 80 specializations which allow students to gain additional knowledge and background on specific businesstop.

ACCREDITATIONS AND RECOGNITIONS:

ITQSM Accredited & International Partnered Professional Academies.

GEPEA has proudly claimed the Excellence in Online Distance Learning Award presented by its Governing Body Really Matters as a token of appreciation for providing top notch education to professionals globally. This solely proclaims that GEPEA is one of the best Professional Academy in the field of online distance learning.

PROFESSIONAL FACULTIES:

GEPEA Faculty members are highly professional, qualified & experienced. Professors provide substantial assistance through 24*7 web support. Each & every query regarding studies, assignments, cases, projects, research are resolved on time & responded with clear, relevant answers on par with syllabus. They update themselves from time totime about the changing market scenario & syllabus. Thus working professionals have chance to get resourceful information by interacting with professorsthrough web-support from time to time. Timely communication & assistance is key to our successful association with our students & our professors believe in same.

GEPEA (Global Educational & Professional Excellence Academy)

In case any query, please feel free to contact us via E-Mail: gepea.official@gmail.com , office@gepea.eu or visit Website: www.gepea.eu or www.gepea.education