DELLTechnologies

intel.

Intel® AI for Future
Workforce

Building An AIOT Ready Workforce

Artificial intelligence holds the potential to make a profound impact on the next generation of workforce. World Economic Forum in its Future of Jobs Report 2020 states that 97 million new jobs will be created across 26 countries by 2025."*

* IBM: AI will necessitate employees to reskill in the next 3 years, ETHRWorldME (indiatimes.com)

Transforming Tomorrow's Workforce through **AI Excellence**

With the technology and business landscape continuing to change at an unprecedented pace, equipping students with industry-ready skills is now of paramount importance.

Dell Technologies, in collaboration with Intel, is bringing forth a comprehensive AI empowerment program - Intel® AI for Future Workforce - to empower the workforce of tomorrow with necessary AI skills for employability in the digital economy.
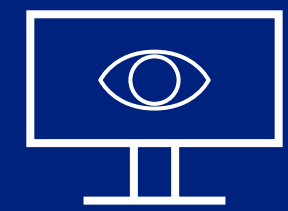
AI Domains Covered in the Program
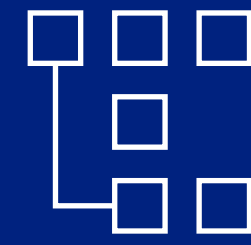
Statistical Data

Natural Language Processing

Computer Vision

Intel's AI for Future Workforce program is very relevant in today's time. Training quality was excellent. I learnt various new AI, Data analysis and visualization tools. Excited to take it ahead to students."
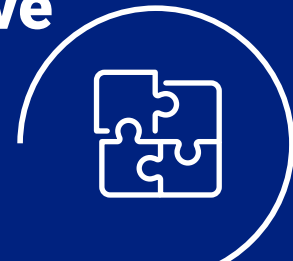
Pritam Ghosh, Lecturer,
ICV Polytechnic Jhargram, West Bengal

Customizing Programs to
Individual Requirements

The program offers two choice for institutes to integrated AI skills in their existing curricula.

Intel® AI for Future Workforce Elective Program

Intel® AI for Future Workforce Core Program
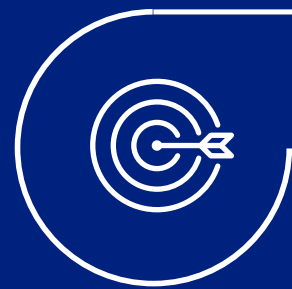
" AI for Future Workforce Program is truly insightful and engaging! I feel more confident in my understanding of AI concepts now. Thank you for such a valuable experience.

Teena Sajwan,
Student, MCA, 2nd year, Punjab University, Chandigarh

Building Future Employability for AI-driven Jobs
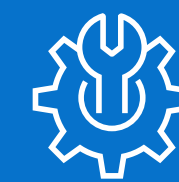
Industry-focused trade applications featuring machine learning algorithms

Guided and capstone projects featuring industry use cases in SD, NLP and CV

Industry-tailored, simulated trainings enabling student to solve real-life industry challenges

Intel® AI for Future Workforce Elective program

Accelerate the Path to Building AI-based Solutions

The elective program provides 108 hours of content with a focus on industry-tailored capstone projects. Integrated over two semesters, this course enables students to demonstrate their technical AI and non-technical competencies in building AI-based solutions.

► Foundation (46h[1])

Programming Fundamentals (7h)

9. Introduction to Programming using Python (3h)

10. Python Functions & Packages (NumPy, Pandas, Scikit Learn) (4h)

Industry Use of AI – Part 2 (Coding Approach) (24h)

11. Common Trade Applications of AI (24h)
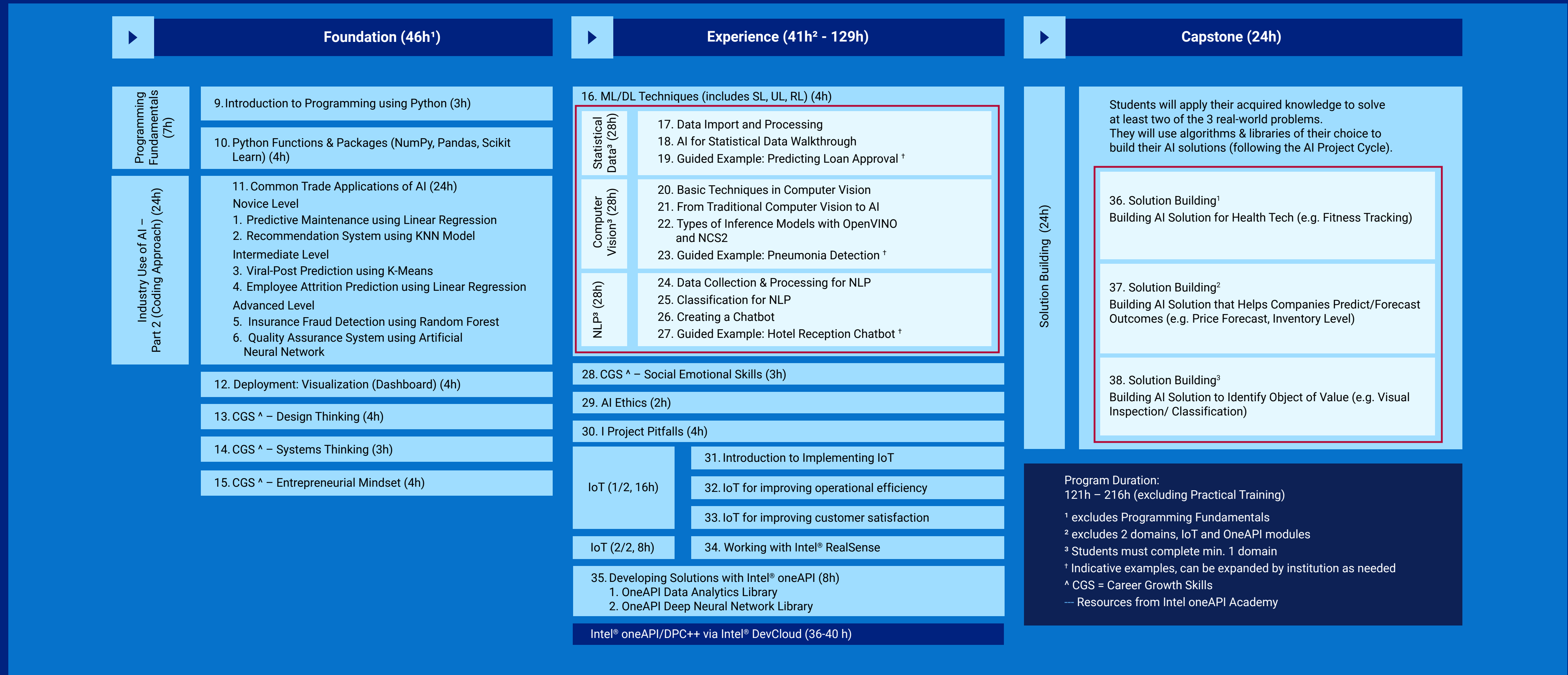Novice Level
1. Predictive Maintenance using Linear Regression
2. Recommendation System using KNN Model
Intermediate Level
3. Viral-Post Prediction using K-Means
4. Employee Attrition Prediction using Linear Regression
Advanced Level
5. Insurance Fraud Detection using Random Forest
6. Quality Assurance System using Artificial Neural Network

12. Deployment: Visualization (Dashboard) (4h)

13. CGS ^ – Design Thinking (4h)

14. CGS ^ – Systems Thinking (3h)

15. CGS ^ – Entrepreneurial Mindset (4h)

► Experience (41h[2] - 129h)

16. ML/DL Techniques (includes SL, UL, RL) (4h)

Statistical Data[3] (28h)
17. Data Import and Processing
18. AI for Statistical Data Walkthrough
19. Guided Example: Predicting Loan Approval [†]

Computer Vision[3] (28h)
20. Basic Techniques in Computer Vision
21. From Traditional Computer Vision to AI
22. Types of Inference Models with OpenVINO and NCS2
23. Guided Example: Pneumonia Detection [†]

NLP[3] (28h)
24. Data Collection & Processing for NLP
25. Classification for NLP
26. Creating a Chatbot
27. Guided Example: Hotel Reception Chatbot [†]

28. CGS ^ – Social Emotional Skills (3h)

29. AI Ethics (2h)

30. I Project Pitfalls (4h)

IoT (1/2, 16h)
31. Introduction to Implementing IoT
32. IoT for improving operational efficiency
33. IoT for improving customer satisfaction

IoT (2/2, 8h)
34. Working with Intel® RealSense

35. Developing Solutions with Intel® oneAPI (8h)
1. OneAPI Data Analytics Library
2. OneAPI Deep Neural Network Library

Intel® oneAPI/DPC++ via Intel® DevCloud (36-40 h)

► Capstone (24h)

Students will apply their acquired knowledge to solve at least two of the 3 real-world problems.
They will use algorithms & libraries of their choice to build their AI solutions (following the AI Project Cycle).

Solution Building (24h)

36. Solution Building[1]
Building AI Solution for Health Tech (e.g. Fitness Tracking)

37. Solution Building[2]
Building AI Solution that Helps Companies Predict/Forecast Outcomes (e.g. Price Forecast, Inventory Level)

38. Solution Building[3]
Building AI Solution to Identify Object of Value (e.g. Visual Inspection/ Classification)

Program Duration:
121h – 216 (excluding Practical Training)

[1] excludes Programming Fundamentals
[2] excludes 2 domains, IoT and OneAPI modules
[3] Students must complete min. 1 domain
[†] Indicative examples, can be expanded by institution as needed
^ CGS = Career Growth Skills
--- Resources from Intel oneAPI Academy

Intel® AI for Future Workforce Core program
Accelerate the Path to In-demand AI Skills

This 216-hour AI curriculum equips participants with essential skills for industry-oriented AI solutions. The customizable course will be implemented as a standalone program spanning over 4 semesters, supplemented by additional modules provided by participating educational institutions. The participants will also get a chance to work on industry-level problems through simulated apprenticeship.

Awareness (6h)

1. Emerging Technologies – AI (1h)
2. AI Made Easy – Demystification (1h)
3. What is Inside AI (1h)
4. Impact of AI on Your Future (Surviving AI) (1h)
5. Inclusive AI (1h)
6. Control Your AI Destiny (1h)

Foundation (50h[1] - 57h)

Industry Use of AI - Part 1 (No-Code) (Using Analytics Software, No Programming Required) (11h)

7. Introduction to AI Project Cycle (1.5h)
8. Common Trade Applications of AI (9.5h)
   - Predictive Maintenance
   - Recommendation System
   - Viral Post Prediction
   - Employee Attrition Prediction
   - Insurance Fraud Detection
   - Quality Assurance System

Programming Fundamentals (7h)

9. Introduction to Programming using Python (3h)
10. Python Functions & Packages (NumPy, Pandas, Scikit Learn) (4h)

Industry Use of AI – Part 2 (Coding Approach) (24h)

11. Common Trade Applications of AI (24h)
    Novice Level
    1. Predictive Maintenance using Linear Regression
    2. Recommendation System using KNN Model
    Intermediate Level
    3. Viral-Post Prediction using K-Means
    4. Employee Attrition Prediction using Linear Regression
    Advanced Level
    5. Insurance Fraud Detection using Random Forest
    6. Quality Assurance System using Artificial Neural Network

12. Deployment: Visualization (Dashboard) (4h)
13. CGS ^ – Design Thinking (4h)
14. CGS ^ – Systems Thinking (3h)
15. CGS ^ – Entrepreneurial Mindset (4h)

Experience (41h[2] - 129h)

16. ML/DL Techniques (includes SL, UL, RL) (4h)

Statistical Data[3] (28h)

17. Data Import and Processing
18. AI for Statistical Data Walkthrough
19. Guided Example: Predicting Loan Approval [†]

Computer Vision[3] (28h)

20. Basic Techniques in Computer Vision
21. From Traditional Computer Vision to AI
22. Types of Inference Models with OpenVINO and NCS2
23. Guided Example: Pneumonia Detection [†]

NLP[3] (28h)

24. Data Collection & Processing for NLP
25. Classification for NLP
26. Creating a Chatbot
27. Guided Example: Hotel Reception Chatbot [†]

28. CGS ^ – Social Emotional Skills (3h)
29. AI Ethics (2h)
30. I Project Pitfalls (4h)

IoT (1/2, 16h)

31. Introduction to Implementing IoT
32. IoT for improving operational efficiency
33. IoT for improving customer satisfaction

IoT (2/2, 8h)

34. Working with Intel® RealSense

35. Developing Solutions with Intel® oneAPI (8h)
    1. OneAPI Data Analytics Library
    2. OneAPI Deep Neural Network Library

Intel® oneAPI/DPC++ via Intel® DevCloud (36-40 h)

Capstone (24h)

Students will apply their acquired knowledge to solve at least two of the 3 real-world problems. They will use algorithms & libraries of their choice to build their AI solutions (following the AI Project Cycle).

Solution Building (24h)

36. Solution Building[1]
Building AI Solution for Health Tech (e.g. Fitness Tracking)

37. Solution Building[2]
Building AI Solution that Helps Companies Predict/Forecast Outcomes (e.g. Price Forecast, Inventory Level)

38. Solution Building[3]
Building AI Solution to Identify Object of Value (e.g. Visual Inspection/ Classification)

Program Duration:
121h – 216h (excluding Practical Training)

[1] excludes Programming Fundamentals
[2] excludes 2 domains, IoT and OneAPI modules
[3] Students must complete min. 1 domain
[†] Indicative examples, can be expanded by institution as needed
^ CGS = Career Growth Skills
--- Resources from Intel oneAPI Academy

Practical Training (4 months+)

39 Practical Training (4 months)

Industry Training Attachment to trade - relevant employers

Simulated Training Trade-relevant sample project for Students not working with employers

AI for Education Sample Project (to be provided by the educational institute)

Perfection in Practice
The Implementation Methodology

The program is executed using the train-the-trainer approach, where AI capabilities will be built among faculty members who then will train and educate the students.

Establishing the AI Lab
Infrastructure to help participants create industry-ready solutions.

Faculty Enablement
30-hour training for nominated faculty members by Intel trainers. On successful completion will be certified by Dell Technologies and Intel.

Curriculum Mapping
Mapping and integrating the program curriculum into current institution curricula, facilitated by Intel trainers.

Student Training
Trained professors will educate the students based on the predetermined curriculum. On successful completion, which includes submitting capstone project for elective program and simulated practical training for core program, students would be certified by Intel and Dell Technologies.

Program Outcome
The Path to Achievement

The program paves the way for the participants to create industry-oriented guided and capstone projects using software like **Python, OpenVINO™ Toolkit, Intel® OneAPI, Intel® Endpoint Management Assistant (Intel® EMA), and more.**

Participants will get a chance to work on the following industry-oriented capstone projects based on the program and elective of choice.

AI Domain	Capstone Projects
SD	Building the AI model to predict crypto currency.
Computer Vision	Analyzing the customer demographic for e-Auto shop by creating a CV model
NLP	Designing an NLP model comprising chatbot, sentiment analysis for an e-commerce website.

The educational institutions opting for Intel® AI for Future Workforce Core program will also have the chance to participate in practical training in a **simulated industry ecosystem.**

Certification on
Successful Completion

Students will be awarded certificates on successful completion of required projects and training and showcasing their technical skills and problem-solving ability in a professional environment.

Intel® AI for Future Workforce Elective

Certification on completing Capstone projects for the elective program.

Intel® AI for Future Workforce Core program

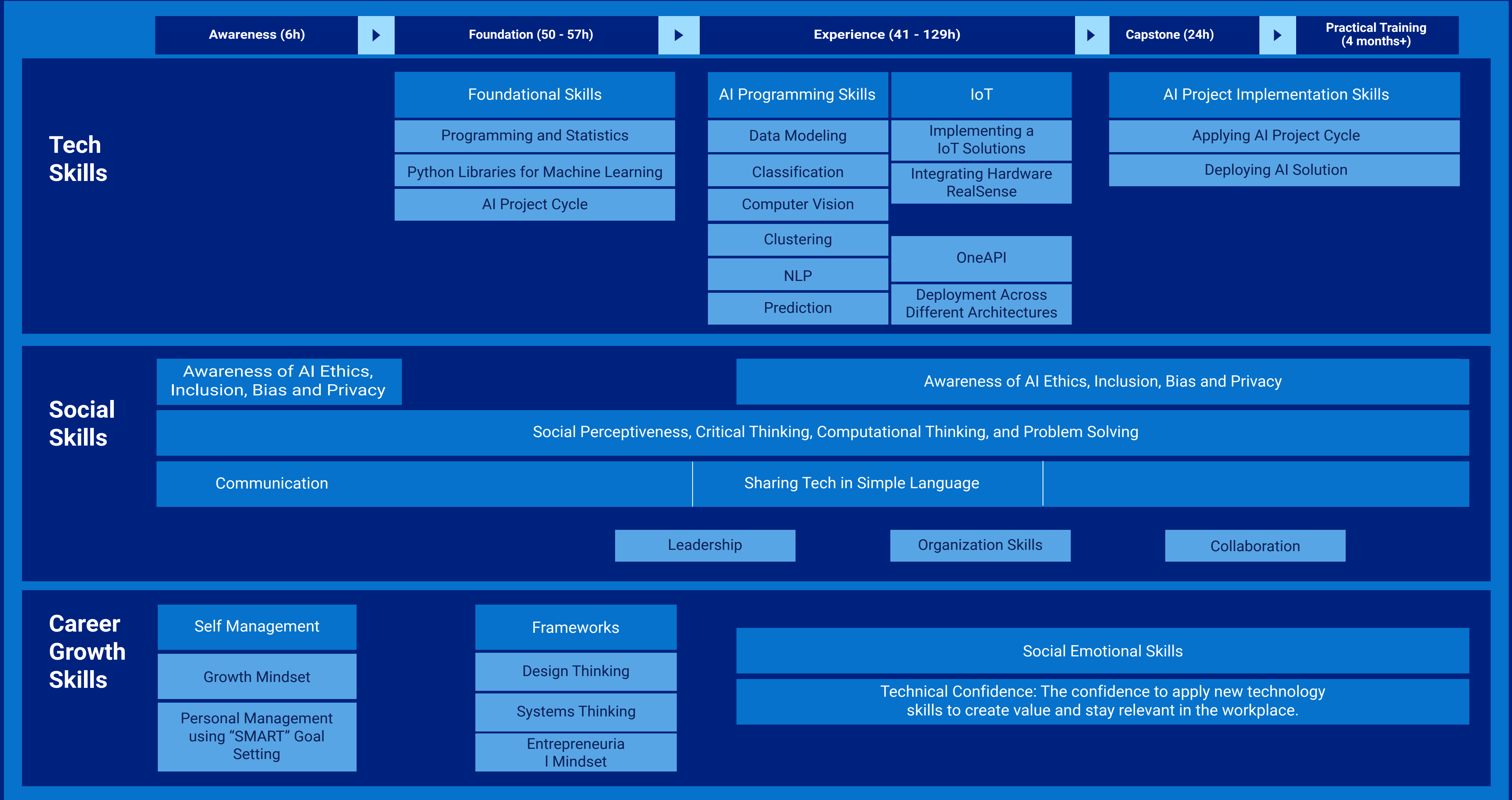Certification on completing Capstone projects & practical training for the core program.

Measuring AI Excellence by Delivering Outcomes

Awareness (6h)	▶	Foundation (50 - 57h)	▶	Experience (41 - 129h)	▶	Capstone (24h)	▶	Practical Training (4 months+)

Tech Skills

	Foundational Skills	AI Programming Skills	IoT	AI Project Implementation Skills
	Programming and Statistics	Data Modeling	Implementing a IoT Solutions	Applying AI Project Cycle
	Python Libraries for Machine Learning	Classification	Integrating Hardware RealSense	Deploying AI Solution
	AI Project Cycle	Computer Vision		
		Clustering	OneAPI	
		NLP		
		Prediction	Deployment Across Different Architectures	

Social Skills

Awareness of AI Ethics, Inclusion, Bias and Privacy	Awareness of AI Ethics, Inclusion, Bias and Privacy

Social Perceptiveness, Critical Thinking, Computational Thinking, and Problem Solving

Communication	Sharing Tech in Simple Language	

Leadership	Organization Skills	Collaboration

Career Growth Skills

Self Management	Frameworks	
Growth Mindset	Design Thinking	Social Emotional Skills
Personal Management using "SMART" Goal Setting	Systems Thinking	Technical Confidence: The confidence to apply new technology skills to create value and stay relevant in the workplace.
	Entrepreneurial Mindset	

Empowering AI
Readiness with Right Tools

The course is filled with a plethora of projects and simulated practical trainings that focus on the development of solutions for real industry problems. Equip your students to achieve optimal outcomes with the required AI-optimized software. **Dell Precision Workstations** have been optimized to ensure that your AI hardware and software stack will run fast and without headaches.

| Professional-grade hardware | Scalable & customizable hardware configuration | Compatible and optimized performance | Powerful computation for AI tasks |

Empowering Aspirations with the Right Toolset
Entry-level Products

With entry-level products, students can embark on their AI journey and run statistical data analytic projects.

Recommended

OptiPlex 7010 Tower
Designed to Deliver greater productivity.

12th Gen Intel Core i5-12500 Processor, 8GB, 512GB, Intel Integrated Graphics, AX211+ BT 5.2 Wireless, Win 11 Pro, 3Yr Onsite Warranty.

Recommended

Monitor E2222H

Optional

Headset WH1022 – SnP

Optional

Webcam - WB3023

Taking Expertise to a Notch Higher

Intermediate-Level Products

With these products, students can run statistical data analytics and natural language processing projects, along.

Recommended

OptiPlex 7010 Plus Tower

13th Gen Intel Core i5-13500 Processor, 16GB, 512GB, Intel Integrated Graphics, AX211+ BT 5.2 Wireless, Win 11 Pro, 3Yr Onsite Warranty

Recommended

Latitude 3340 2 in 1

13.3 FHD touch Display, 13th Gen Intel Core i5-1335U Processor, 8GB Memory, 256GB Storage, Intel(R) Intel Iris Xe Graphics, AX211+ BT 5.2, Win 11 Pro, 3Yr Onsite Warranty

Recommended

Monitor E2222H

Optional

Headset WH1022 – SnP

Optional

Webcam - WB3023

Optional

Pen PN5122W

Unleashing Possibilities in the AI Realm
Advanced-Level Products

With these products, students can run statistical data analytics, natural language processing, and computer vision projects - the fundamental components of the Intel® AI for Future Workforce Core program.

> The Intel AI for Future workforce course opened my eyes to the vast possibilities of AI in various industries. I now feel confident and ready to embrace the AI-driven future.

Ayushi,
Student, BCA 2nd Year,
Chandigarh University, Mohali

Precision 3460 SFF

13th Gen Intel Core i7-13700 Processor, 16GB, 1TB SSD, Nvidia T1000, 8GB Graphics, 8GB Graphics, AX211+ BT 5.2 Wireless, Win 11 Pro, 3Yr Onsite Warranty

Recommended

Precision 3460 SFF

13th Gen Intel Core i5-13500 Processor, 16GB, 512GB, Nvidia T1000, 4GB Graphics, AX211+ BT 5.2 Wireless, Win 11 Pro, 3Yr Onsite Warranty.

Recommended

Recommended
Monitor P2222H

Optional
Headset WH1022 – SnP

Optional
Webcam - WB3023

Optional
Pen PN5122W

Optional
LFD P6524QT

Optional
OptiPlex 7000 XE

Optional

Latitude 3340 2 in 1

13.3 FHD touch Display, 13th Gen Intel Core i5-1335U Processor, 16GB Memory, 512GB Storage, Intel(R) Intel Iris Xe Graphics, AX211+ BT 5.2, Win 11 Pro, 3Yr Onsite Warranty

" "

I participated in Intel AI for Future Workforce Program. Very useful sessions covered information about so many AI tools and algorithms. I learnt a lot of new things which is much needed to enhance knowledge, guide our students better and make them ready for future career opportunities. Thanks to Chandigarh University and Intel for the efforts to organize the training program for the faculties.

Gaganjot Kaur,
Assistant Professor,
Chandigarh University, Mohali, Punjab

For more information, connect with a Dell Technologies representative at
India.Solutions@Dell.com