COURSE OUTLINE

COURSE INFORMATION

COURSE TITLE AND DEPARTMENT	:	Computer Vision with AI integration
MICRO CREDENTIAL INDICATOR *(MICRO/NON-MICRO)*	:	
FOCUS AREA	:	AI
SKILL AREA	:	Computer Vision
TARGET INDUSTRY	:	All industries
TARGET GROUP	:	- Engineers - System Developers - Engineering or computer science students - Personnel with good computer literacy.
TYPE OF TRAINING *(E-LEARNING/NON-E-LEARNING)*	:	Hands-on Learning/ Non-E-Learning
TRAINING MODE *(FULL TIME/HALF TIME)*	:	Full Time
TYPE OF PROGRAMME *(TECHNICAL/NON-TECHNICAL)*	:	Technical
DURATION *(FULL DAY/HALF DAY)*	:	5 days of Full Day
MINIMUM TRAINING QUALIFICATION *(SPM/STPM/DIPLOMA/DEGREE)*	:	Degree

COURSE SUMMARY

OVERVIEW	:	This 5-day hands-on training program introduces participants to the exciting world of computer vision, with a focus on applying artificial intelligence to recognize, interpret, and act on visual data. Designed for beginners and mixed-level learners, the course takes a practical, step-by-step approach to building vision-based applications—from reading text and scanning barcodes to advanced object detection using AI models like YOLOE and YOLO-World. Participants will gain foundational knowledge, apply what they learn in guided activities, and conclude with an assessment project to showcase their skills.

OBJECTIVES	:	By the end of this course, participants will be able to: • Understand the Basics of Computer Vision Gain a clear understanding of what computer vision is and how it is applied in everyday industries such as manufacturing, logistics, and safety. • Apply OCR and Barcode Recognition Techniques Learn how to extract text from images and scan barcodes/QR codes using simple vision tools for real-world automation tasks. • Improve Image Quality for AI Models Develop skills in cleaning and preparing images (pre-processing) to help AI systems "see" better and make more accurate decisions. • Implement Object Detection with AI Models Use AI tools like YOLOE and YOLO-World to detect and recognize objects, both known and new, in still images or live camera feeds. • Design and Build End-to-End Vision Applications Integrate input, processing, detection, and output into a functional computer vision pipeline and create a mini project to demonstrate what you've learned.
METHODOLOGY	:	Our course employs a balanced mix of engaging learning activities. • **Knowledge Delivery**: Theoretical knowledge of computer vision and AI integration will be delivered through interactive lectures. • **Step-by-step Progress**: The training follows a structured path — starting from basic tasks like text reading, progressing to object detection, and finally building full vision systems. • **Practical Hands-On Exercise**: Hands-on activities and exercises will be carried out to help participants apply the concepts learned during the lectures. • **Visual and Interactive Learning**: Live demos and visual aids help simplify complex ideas, showing how models work and what the AI "sees" in real-time. • **Competency Check Assessment**: Learners complete a mini project on Day 5 to demonstrate their understanding, creativity, and ability to apply AI tools to solve practical problems.

TRAINING PROGRAM OUTLINE

DAY	TIME	SUBJECT *(LECTURE/BREAK)*	DESCRIPTION
1	0900 ~ 0930	LECTURE	Welcoming Session and Course Introduction
	0930 ~ 1030	LECTURE	Overview of Computer Vision Introduction to computer vision, AI, OCR and barcode scanning
	1030 ~ 1045	BREAK	Refreshment is provided
	1045 ~ 1300	LECTURE	Hands-on OCR and barcode scanning activities
	1300 ~ 1400	BREAK	Lunch is provided
	1400 ~ 1530	LECTURE	Accuracy testing and improvement discussion
	1530 ~ 1545	BREAK	Refreshment is provided
	1545 ~ 1700	LECTURE	Real-world application examples and wrap-up
2	0930 ~ 1030	LECTURE	Introduction to image pre-processing
	1030 ~ 1045	BREAK	
	1045 ~ 1300	LECTURE	Image pre-processing hands-on activities
	1300 ~ 1400	BREAK	
	1400 ~ 1530	LECTURE	Image enhancement for OCR / barcode/ object detection
	1530 ~ 1545	BREAK	
	1545 ~ 1700	LECTURE	Compare pre/post-processed results
3	0930 ~ 1030	LECTURE	Introduction to Modern Object Detection and Open-Vocabulary Models
	1030 ~ 1045	BREAK	
	1045 ~ 1300	LECTURE	Hands-on: Running a Pretrained Open-Vocabulary Detection Model
	1300 ~ 1400	BREAK	
	1400 ~ 1530	LECTURE	Understanding Labeling Concepts and Prompt Design
	1530 ~ 1545	BREAK	
	1545 ~ 1700	LECTURE	Evaluating Model Outputs
4	0930 ~ 1030	LECTURE	Introduction to Object Detection & AI Vision Systems
	1030 ~ 1045	BREAK	
	1045 ~ 1300	LECTURE	Hands-on: Running Object Detection with a Preconfigured AI Vision Toolkit
	1300 ~ 1400	BREAK	
	1400 ~ 1530	LECTURE	Custom Object Detection: Training Models for Specific Tasks
	1530 ~ 1545	BREAK	
	1545 ~ 1700	LECTURE	Evaluating, Optimizing, and Deploying Object Detection Models

5	0930 ~ 1030	BRIEFING	Project setup: select use case, plan system flow
	1030 ~ 1045	BREAK	
	1045 ~ 1300	ASSESSMENT	Develop computer vision solution based on given scenario
	1300 ~ 1400	BREAK	
	1400 ~ 1530	ASSESSMENT	Develop computer vision solution based on given scenario
	1530 ~ 1545	BREAK	
	1545 ~ 1700	PRESENTATION	Individual / group project presentation

TRAINER PROFILE

TRAINER NAME	:	1. Nur Hanani Ahmad Puaad 2. Noor Zamri Sudin 3. Chu Hui Voon 4. Kong Kah Chun
TRAINER PROFILE AND CERTIFICATES *(TTT & HRDCORP)*	:	SEE ATTACHED DOCUMENTS

COURSE ADMINISTRATION		
FEE *(6% SST INCLUSIVE)*	:	
DATE	:	
VENUE	:	

COMPANY REPRESENTATIVE		
NAME	:	
CONTACT NUMBER	:	
EMAIL	:	