

# AIB552 Deep Learning & Neural Networks

**Level:** 5

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY JAN

## **Synopsis:**

This course AIB552 Deep Learning & Neural Networks aims to teach students essential knowledge of deep learning and artificial intelligence. Students can learn varied deep learning models, including convolutional neural networks, natural language processing, recommender system, and generative models. The emphasis of this course would be placed on practical skills with deep learning. Students can also learn the trends and ethics of deep learning. Finally, students will learn how to develop and implement suitable deep learning models to solve real-world business problems.

## **Topics:**

- Introduction to Machine Learning
- Introduction to Deep Learning and Neural Networks
- Introduction to Python and Pytorch
- Hands on Deep Learning Practice
- Convolutional Neural Networks
- Natural Language Processing
- Explainable Machine Learning
- Recommender System
- Ethics of Artificial Intelligence
- Generative Models
- Deep Learning Applications for Business
- Data Visualization and Analysis

## **Textbooks:**

Deep Learning 2017 Ian Goodfellow, Yoshua Bengio, and Aaron Courvill MIT Press  
ISBN-13: 9780262337373

**Learning Outcome:**

- Distinguish between machine learning and deep learning
- Construct suitable deep learning models for business applications
- Assess the trends of deep learning and artificial intelligence
- Recommend deep learning models to solve business problems
- Prepare high-dimensional datasets by Python and Pytorch
- Evaluate the result of deep learning models

**Assessment Strategies - Regular Semester (Evening Class):**

<b>Components</b>	<b>Description</b>	<b>Weightage Allocation (%)</b>
Overall Continuous Assessment	PRE-CLASS QUIZ 1	10
	PARTICIPATION 1	15
	GROUP BASED ASSIGNMENT 1	25
Overall Examinable Components	ECA	50
<b>Total</b>		<b>100</b>

\*The information listed is subject to review and change.