

## Business Transformation using Artificial Intelligence (BTAI)

<b>Credits</b>	3
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<b>Program</b>	MBA (BM)
<b>Term and Academic Year</b>	Term V, MBA 2019-21

### Introduction

AI provides a myriad of opportunity to reinvent your business just as was possible with the emergence of new technologies such as computing the internet, and mobile devices. However, businesses now need to figure out how to create value for their customers using artificial intelligence, and what business model makes it competitive and profitable. This course will discuss all the major artificial intelligence technologies and their applications in business transformation. We will discuss a framework (called MEDS, which will help business organizations in transforming their business. The course would be useful who aspire to be Chief Artificial Intelligence Officer.

### Student Learning Outcomes

- Learn all the key AI technologies (high-level view) and Business Transformation waves
- Get exposed to various AI applications in Business Transformation
- An AI framework (called MEDS) that will facilitate Business Transformation

### Required Textbook

- Human + Machine: Reimagining Work in the Age of AI by H. James Wilson and Paul Dougherty

## Tentative Session Plan

Session	Description	Study Materials	Remark
<b>Business Transformation using AI - What</b>			
1	<ul style="list-style-type: none"> <li>• Introduction to Course Content</li> <li>• 'Three 'A's of Artificial Intelligence'               <ul style="list-style-type: none"> <li>○ Amplification</li> <li>○ Articulation</li> <li>○ Automation</li> </ul> </li> <li>• 4P's of AI               <ul style="list-style-type: none"> <li>○ Projection – using AI to be more intelligent with forecasting business and customer needs</li> <li>○ Production – Optimizing business output</li> <li>○ Promotion – Effective marketing and targeting right channels,</li> <li>○ Provide – enhancing customer satisfaction through value drivers</li> </ul> </li> <li>• Big Data, Cloud Computing and AI – Big data and cloud computing as an enabler of AI</li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
2	<ul style="list-style-type: none"> <li>• Business Transformation - Three waves of business Transformation               <ul style="list-style-type: none"> <li>○ Standardized processes</li> <li>○ Automated processes</li> <li>○ Adaptive processes</li> </ul> </li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
3	<ul style="list-style-type: none"> <li>• Artificial Intelligence               <ul style="list-style-type: none"> <li>○ Deep learning and subsets: deep neural networks (DNN), recurrent neural networks (RNN), and feed-forward neural networks (FNN)</li> </ul> </li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
4	<ul style="list-style-type: none"> <li>○ Machine Learning - Supervised learning, Unsupervised learning, Semi-supervised learning, Reinforcement learning, Neural network</li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
5	<ul style="list-style-type: none"> <li>○ AI Capabilities - Predictive systems, Local search (optimization), Knowledge representation, Expert systems (inference), Computer vision, Audio and signal processing, Speech to text, Natural language processing (NLP)</li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
6	<ul style="list-style-type: none"> <li>○ AI Applications Component - Intelligent agents, Collaborative robotics (cobots), Biometrics, facial, and gesture recognition, Intelligent automation, Recommendation systems, Intelligent products, Personalization,</li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques

	Text, speech, image, and video recognition, Extended reality		
<b>Business Transformation using AI - Why</b>			
7	<ul style="list-style-type: none"> <li>AI in Business <ul style="list-style-type: none"> <li>AI in Production, Supply Chain, and Distribution (Manufacturing Industry)</li> </ul> </li> </ul>	Chapter 1 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
8	<ul style="list-style-type: none"> <li>AI in Back-office Operations, such as settlements, clearances, record maintenance, regulatory compliance, accounting, HR, and IT services (Service Industry)</li> </ul>	Chapter 2 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
9	<ul style="list-style-type: none"> <li>AI in R&amp;D and Business Innovation</li> </ul>	Chapter 3 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
10	<ul style="list-style-type: none"> <li>AI in Customer Service, Sales, and Marketing</li> </ul>	Chapter 4 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
<b>Business Transformation using AI (OR Reimagining Processes with AI) – How</b>			
11-12	<ul style="list-style-type: none"> <li>Process <ul style="list-style-type: none"> <li>Dynamic and Adaptable</li> <li>Process as a hub and Spokes (unlike earlier nodes with a straight line)</li> </ul> </li> <li>Missing the Middle <ul style="list-style-type: none"> <li>Human Only (Lead, Empathize, Create, Judge)</li> <li>Human Complement Machine (Train, Explain, and Sustain) - Three Roles Humans Play in Developing and Deploying Responsible AI</li> <li>Machine Complement Human (Amplify, Interact, Embody) - Three Ways AI Unleashes New Levels of Productivity</li> <li>Machine Only (Transact, Iterate, Predict, Adapt)</li> </ul> </li> </ul>	Chapter 5 and 6 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
13 - 17	<ul style="list-style-type: none"> <li>What are the actual steps for Re-imagining business processes? How should managers proceed?</li> <li>MELDS Framework (Mindset, Experimentation, Leadership, Data, Skills)</li> </ul>	Chapter 7 and 8 of Textbook + Handout	Case Study, Exercise, Tools, And Techniques
	<ul style="list-style-type: none"> <li><u>M</u>indset: Imagine Processes That Might Be <ul style="list-style-type: none"> <li>discover and describe</li> <li>co-create</li> <li>scale and sustain</li> </ul> </li> </ul>		
	<ul style="list-style-type: none"> <li><u>E</u>xperimentation: Imagine an Experiment</li> </ul>		

	<ul style="list-style-type: none"> <li>○ Build-Measure-Learn</li> </ul>		
	<ul style="list-style-type: none"> <li>• <b>Leadership:</b> Imagine a Blended Culture of People and Machines <ul style="list-style-type: none"> <li>○ Use Human Checkpoints</li> <li>○ Minimize “Moral Crumple Zones”</li> <li>○ Consider Legal, Psychological, and Other Issues</li> </ul> </li> </ul>		
	<ul style="list-style-type: none"> <li>• <b>Data:</b> Imagine a Data Supply Chain <ul style="list-style-type: none"> <li>○ Think Dynamically</li> <li>○ Widen Access and Increase Variety</li> <li>○ Increase Velocity</li> <li>○ Enable Discovery</li> <li>○ Fill the Missing Middle</li> </ul> </li> </ul>		
	<ul style="list-style-type: none"> <li>• <b>Skills:</b> Eight New Fusion Skills for an AI Workplace <ul style="list-style-type: none"> <li>○ Rehumanizing Time</li> <li>○ Responsible Normalizing</li> <li>○ Judgment Integration</li> <li>○ Intelligent Interrogation</li> <li>○ Bot-based Empowerment</li> <li>○ Holistic Melding</li> <li>○ Reciprocal Apprenticing</li> <li>○ Relentless Reimagining</li> </ul> </li> </ul>		
18	<ul style="list-style-type: none"> <li>• Ensuring appropriate governance <ul style="list-style-type: none"> <li>○ Establish clear policies regarding data privacy, decision rights, and transparency</li> <li>○ Set up governance structures to monitor possible errors and problems (for example, overreach in program trading)</li> <li>○ Set up communications practices to explain AI-related decisions</li> <li>○ Consider the impact on employment and invest in developing the workforce that AI will complement</li> </ul> </li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
19	<ul style="list-style-type: none"> <li>• Measuring the effectiveness of AI implementation <ul style="list-style-type: none"> <li>○ Assets – depth of AI technologies, cumulative and anticipated spend</li> <li>○ Usage – metrics around customer usage, product development pipelines, and Financial Management</li> <li>○ Labor – AI resource per worker, and impact on overall workforce</li> </ul> </li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques
20	<ul style="list-style-type: none"> <li>• Ethical and social implications of AI integration</li> <li>• Course Summary</li> </ul>	Handout	Case Study, Exercise, Tools, And Techniques

## **Tentative Evaluation Plan**

- Class Participation: 30%
- Quiz: 30%
- End-term: 40%

## **Academic Integrity**

- Attendance: I will mark you ABSENT if you are not present in the classroom at the time of attendance. The attendance policy of the school will be enforced.
- Class participation: I suppose you to take part in the class discussion.
- Plagiarism: You will be awarded ZERO if plagiarism is detected in your assignment/project.
- Assignment and project submission dates: Students should adhere to the deadlines of assignment/project submission. I will entertain no reason if you miss the deadline.
- Content of the course: The faculty may modify the course outline/evaluation composition at his discretion during the course.