



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester
20AM7E06	AI Chatbots	VII	AI&DS	5	2025-26	09-06-2025
Pre-requisites: Basic Knowledge on Artificial Intelligence and Machine Learning						
COURSE OUTCOMES						
1	Develop an in-depth understanding of conversation design, including onboarding, flows, utterances, entities, and personality.					
2	Design, build, test, and iterate a fully-functional, interactive chatbot using a commercial platform.					
3	Deploy the finished chatbot for public use and interaction.					
4	Understanding the fundamentals of chatbot technology					
5	Understand the advantages, limitations, and appropriate use cases for each architecture.					
Unit	Out Comes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Cont act Hour	Delivery Method
UNIT-I: Introduction						
I	CO1: Develop an in-depth understanding of conversation design, including onboarding , flows, utterances, entities, and personality	1.1.1	Benefits from Chatbots for a Business	T1	1	Chalk ,talk
		1.1.2	A Customer-Centric Approach in Financial Services	T1	1	Chalk ,talk
		1.1.3	Chatbots in the Insurance Industry	T1	1	Chalk ,talk
		1.1.4	Conversational Chatbot Landscape	T1	2	Chalk ,talk
		1.2.1	Identifying the Sources of Data	T1	1	PPT
		1.2.2	Chatbot Conversations	T1	1	Chalk ,talk
		1.2.3	Training Chatbots for Conversations	T1	1	Chalk ,talk
		1.2.4	Personal Data in Chatbots	T1	1	PPT
		1.2.5	Introduction to the General Data Protection Regulation (GDPR)	T1	2	Chalk, talk,PPT
			CBS	Chatbot Deployment Trends	T1	1
		Total			12	



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UNIT-II: Chatbot Development Essentials						
II	CO2: Design, build, test, and iterate a fully-functional, interactive chatbot using a commercial platform.	2.1.1	Customer Service-Centric Chatbots	T2	1	Chalk ,talk
		2.1.2	Chatbot Development Approaches	T2	1	Web Resources
		2.1.3	Rules-Based Approach	T2	1	Chalk , talk
		2.1.4	AI-Based Approach	T2	1	Chalk ,talk
		2.1.5	Conversational Flow	T2	1	Web Resources
		2.1.6	Key Terms in Chatbots	T2	1	Web Resources
		2.1.7	Utterance, Intent	T2	2	Chalk ,talk, ppt
		2.1.8	Entity, Channel	T2	1	PPT
		2.1.9	Human Takeover	T2	1	Web Resources
		2.1.10	Use Case: 24x7 Insurance Agent	T2	2	Chalk ,talk
		CBS	Future of Chatbots: Challenges and Opportunities	T2	1	PPT
Total					13	
UNIT-III: Building a Chatbot Solution						
III	CO3: Deploy the finished chatbot for public use and interaction.	3.1.1	Business Considerations	T1	1	Chalk ,talk
		3.1.2	Chatbots Vs Apps	T1	1	Chalk ,talk, ppt
		3.1.3	Growth of Messenger Applications	T1	1	Web Resources
		3.1.4	Direct Contact Vs Chat	T1	1	NPTEL video
		3.1.5	Business Benefits of Chatbots	T1	1	PPT
		3.1.6	Success Metrics	T3	1	PPT
		3.1.7	Customer Satisfaction Index	T3	1	Web Resources
		3.1.8	Completion Rate, Bounce Rate	T3	1	Chalk ,talk
		3.1.9	Managing Risks in Chatbots Service	T3	1	Chalk ,talk
		3.1.10	Generic solution Architecture for Private Chatbots	T3	2	Chalk ,talk
		CBS	Emerging Chatbot Trends	T3	1	PPT
Total					12	



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UNIT-IV: Natural Language Processing						
IV	CO4: Understanding the fundamentals of chatbot technology.	4.1.1	Understanding, and Generation	T1	1	PPT
		4.1.2	Chatbot Architecture	T1	1	Web Resources
		4.1.3	Popular Open Source NLP and NLU Tools	T1	2	Chalk ,talk
		4.1.4	Natural Language Processing	T1	1	PPT
		4.1.5	Natural Language Understanding	T1	1	Chalk ,talk
		4.1.6	Natural Language Generation	T1	1	Web Resources
		4.1.7	Natural Language Applications	T1	1	Web Resources
	CBS	Advancements in Conversational AI and NLP Technologies	T3	1	PPT	
				Total	8	
UNIT-V: Introduction to Microsoft Bot						
V	CO5: Understand the advantages, limitations, and appropriate use cases for each architecture.	5.1.1	RASA, and Google Dialog flow	T3	1	Web Resources
		5.1.2	Microsoft Bot Framework	T3	1	Chalk ,talk
		5.1.3	Introduction to QnA Maker	T3	2	Chalk , talk PPT
		5.1.4	Introduction to LUIS	T3	2	PPT
		5.1.5	Introduction to RASA	T3	1	Web Resources
		5.1.6	RASA Core	T3	2	Chalk ,talk
		5.1.7	RASA NLU	T3	1	Web Resources
		5.1.8	Introduction to Dialog flow	T3	1	Chalk ,talk, ppt
		5.2.1	Chatbot Integration Mechanism	T3	1	Chalk ,talk
		5.2.2	Integration with Third-Party APIs	T3	1	Chalk ,talk
		5.2.3	Connecting to an Enterprise Data Store	T3	1	Web Resources
		5.2.4	Integration Module	T3	1	Chalk ,talk
	CBS	Future Trends and Innovations in Chatbot Technologies	T3	1	PPT	
				Total	17	
CUMULATIVE PROPOSED PERIODS					62	



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Text Books:


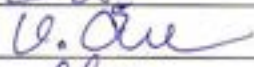
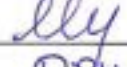

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1.	Abhishek Singh, Karthik Ramasubramanian, Shrey Shivam, —Building an Enterprise Chatbot: Work with Protected Enterprise Data Using Open Source Frameworks, ISBN 978-1-4842-5034-1, Apress, 2019.
2.	Michael McTear (2020), "Conversational AI: Dialogue Systems, Conversational Agents, and Chatbots", <i>Morgan & Claypool Publishers</i> .
3.	Sumit Raj (2019), "Building Chatbots with Python: Using Natural Language Processing and Machine Learning", <i>Apress</i>

Reference Books:

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1.	Janarthanam and Srin, Hands-on chatbots and conversational UI development: Build chatbots and voice user interfaces with C (1 ed.), Packt Publishing Ltd, 2017. ISBN 978-1788294669.
2.	Galitsky, Boris., Developing Enterprise Chatbots (1 ed.), Springer International Publishing, 2019. ISBN 978-303004298
3.	Kelly III, John E. and Steve Hamm, Smart machines: IBM's Watson and the era of cognitive computing (1 ed.), Columbia University Press, 2013. ISBN 978-0231168564.
4.	Abhishek Singh, Karthik Ramasubramanian and Shrey Shivam, Building an Enterprise Chatbot (1st ed.), Springer, 2019. ISBN 978-1484250334.

Web Details

1.	https://www.chatbots.org/
2.	https://www.ibm.com/blog/chatbot-development-guide/
3.	https://towardsdatascience.com/a-guide-to-natural-language-processing-for-chatbots-37c3677d1a0b
4.	https://rasa.com/
5.	https://cloud.google.com/dialogflow

	Name	Signature with Date
i. Faculty	Mr.B.Suneel Kumar	
ii. Course Coordinator	V.Subrahmanayam	
iii. Module Coordinator	Dr.G.Sudhakar	
iv. Program Coordinator	Dr.B.RAMA KRISHNA	


Principal