



Shri Vile Parle Kelavani Mandal's

Dwarkadas J. Sanghvi College of Engineering

(Autonomous College Affiliated to the University of Mumbai)

Scheme and Detailed Syllabus of DJS22 Honors

Program in Immersive Technologies

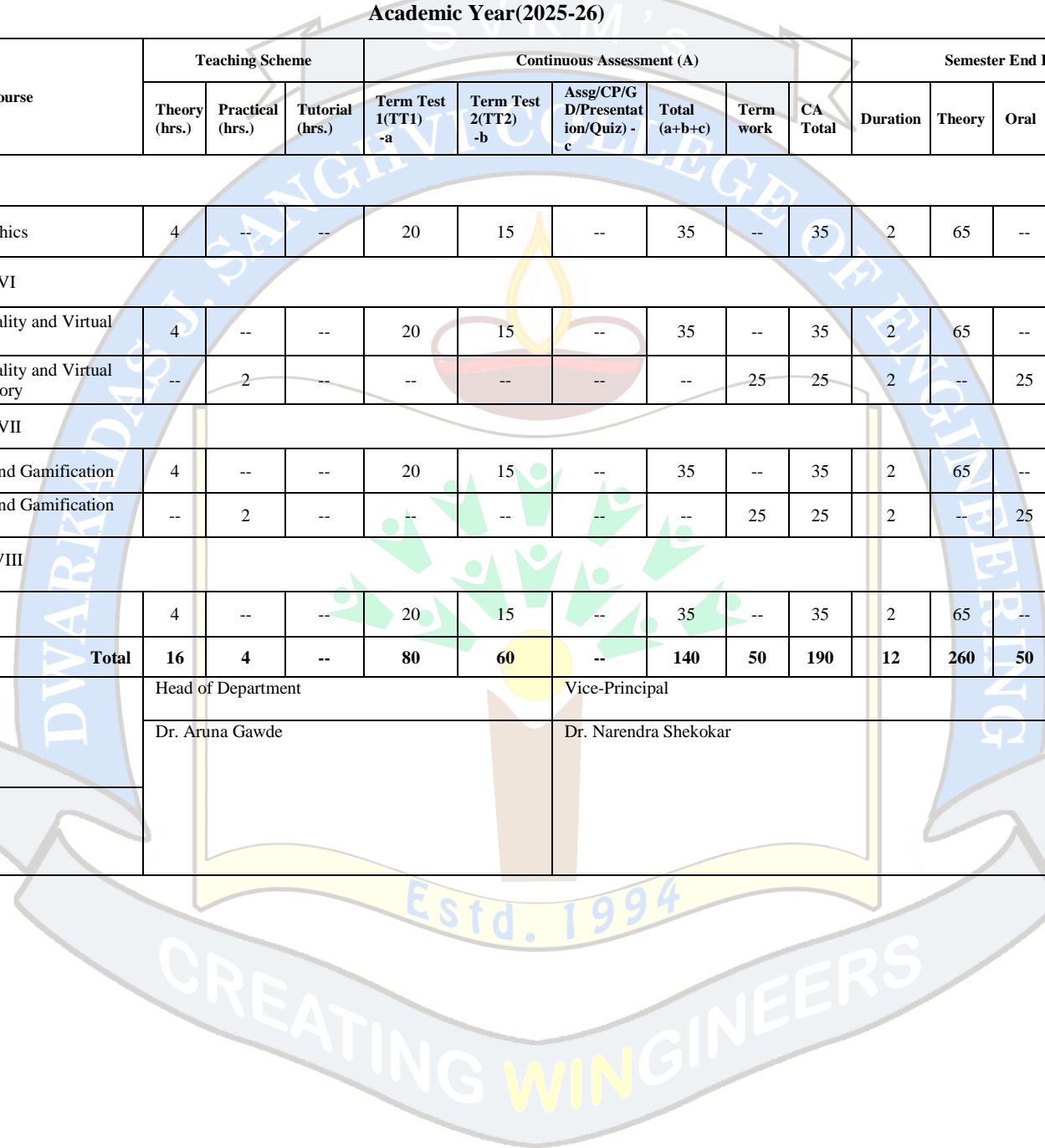
Revision: 2024

With effect from the Academic Year: 2024-2025



Proposed Scheme for Final Year Undergraduate Program in Artificial Intelligence and Machine Learning: Semester VII (Autonomous)
Academic Year(2025-26)

Sr. No .	Course Code	Course	Teaching Scheme			Continuous Assessment (A)						Semester End Examination (B)						Aggregate (A+B)	Credits
			Theory (hrs.)	Practical (hrs.)	Tutorial (hrs.)	Term Test 1(TT1) -a	Term Test 2(TT2) -b	Assg/CP/GD/Presentation/Quiz) -c	Total (a+b+c)	Term work	CA Total	Duration	Theory	Oral	Pract	Oral & Pract	SEE Total		
Sem V																			
1	DJS22AMHN1C1	Computer Graphics	4	--	--	20	15	--	35	--	35	2	65	--	--	--	65	100	4
Sem VI																			
2	DJS22AMHN1C2	Augmented Reality and Virtual Reality	4	--	--	20	15	--	35	--	35	2	65	--	--	--	65	100	4
3	DJS22AMHN1L1	Augmented Reality and Virtual Reality Laboratory	--	2	--	--	--	--	--	25	25	2	--	25	--	--	25	50	1
Sem VII																			
3	DJS22AMHN1C3	Game Design and Gamification	4	--	--	20	15	--	35	--	35	2	65	--	--	--	60	100	4
4	DJS22AMHN1L2	Game Design and Gamification Laboratory	--	2	--	--	--	--	--	25	25	2	--	25	--	--	25	50	1
Sem VIII																			
5	DJS22AMHN1C4	Metaverse	4	--	--	20	15	--	35	--	35	2	65	--	--	--	65	100	4
Total			16	4	--	80	60	--	140	50	190	12	260	50	--	--	310	500	18
Prepared by: Name and Signatures (with date)			Head of Department					Vice-Principal									Principal		
			Dr. Aruna Gawde					Dr. Narendra Shekokar									Dr. Hari Vasudevan		
Checked By Name and Signatures (with date)																			





Continuous Assessment (A):

Course	Assessment Tools	Marks	Time (mins)
Theory	a. Term Test 1 (based on 40 % syllabus)	20	1hr
	b. Term Test 2 (on next 40 % syllabus)	15	
	Total marks (a + b)	35	--
Audit course	Performance in the assignments / quiz / power point presentation / poster presentation/group project / any other tool.	--	As applicable
Laboratory	Performance in the laboratory and documentation.	25	
Tutorial	Performance in each tutorial & / assignment.	--	
Laboratory & Tutorial	Performance in the laboratory and tutorial.	--	

Continuous Assessment (B):

Course	Assessment Tools	Marks	Time (hrs.)
Theory / * Computer based	Written paper based on the entire syllabus.	65	02
	* Computer based assessment in the college premises.	--	
Oral	Questions based on the entire syllabus.		--
Practical	Performance of the practical assigned during the examination and the output / results obtained.		--
Oral & Practical	Project-based courses - Performance of the practical assigned during the examination and the output/results obtained. Based on the practical performed during the examination and on the entire syllabus.	25	As applicable



Program: Artificial Intelligence & Machine Learning	B.Tech.	Sem: VII
Course: Game Design and Gamification (DJS22AMHN1C3)		
Course: Game Design and Gamification Laboratory (DJS22AMHN1L2)		

Prerequisite: Computer Graphics, Virtual Reality and Augmented Reality.

Course Objectives: The course introduces the students to the application of game-design elements and game principles. The objective of the course is to develop problem-solving capabilities using

Course Outcomes: On completion of the course, learner will be able to:

1. Understanding game design fundamentals
2. Analyze Game Mechanics and Dynamics
3. Building foundation for the game.
4. Analyze Opponent Moves in Gamification

Detailed Syllabus: Game Design and Gamification (DJS22AMHN1C3)		
Unit	Description	Duration
1	Introduction to Game Design: Motivation, Types of games, Different aspects of game design; Different components in a game, Game engines, Design Schemas, Game Design Fundamentals	06
2	The Design Process: Iterative Design, Commissions, Game creation, Game Modification, Game Analysis, Design Process, Scripted Game Design, Play Testing, Game Mechanics and Dynamics: Feedback and Re-enforcement, Designing for engagement Game Mechanics in depth, Putting it together, Case study of 8 queen's problem	10
3	Rules of Digital Games: Rule as a Whole, What are Rules, Types of Rules: constitutive, operational, and implicit, Case Study: Rules of Tetris, Why Rules.	08
4	Foundations of Gamification: Definition of Gamification, Why Gamify, Examples and Categories, Gamification in Context, Resetting Behavior, Replaying History, Gaming foundations: Fun Quotient, Evolution by loyalty, status at the wheel, the House always wins.	08
5	Developing Thinking: Re-framing Context: Communicology, Apparatus, and Post-history, Concepts Applied to Video games and Gamification, Rethinking 'playing the game' with Jacques Henriot, To Play Against: Describing Competition in Gamification, Player Motivation: Powerful Human Motivators, Why People Play, Player types, Social Games, Intrinsic versus Extrinsic Motivation, Progression to Mastery. Case studies for Thinking: Tower of Hanoi.	12



6	Opponent Moves in Gamification: Reclaiming Opposition: Counter gamification, Gamed Agencies: Affectively Modulating Our Screen- and App- Based Digital Futures, Remodeling design, Game Mechanics, Designing for Engagement, Case study of Maze Problem.	08
	Total	52

Books*Text books:*

1. "Doing Things with Games, Social Impact through Play" by Elizabeth Goins (Publisher: CRC Press, 2021).
2. "The Art of Game Design: A Book of Lenses, Third Edition" by Jesse Schell (Publisher: CRC Press, 2019).
3. "Games, Design and Play: A Detailed Approach to Iterative Game Design" by Colleen Macklin and John Sharp (Publisher: Addison-Wesley Professional, 2016).
4. "Gamify: How Gamification Motivates People to Do Extraordinary Things" by Brian Burke (Publisher: Bibliomotion, 2014).
5. Mathias Fuchs, Sonia Fizek, Paolo Ruffino, Niklas Schrape, "Rethinking Gamification", Meson Press, ISBN (Print): 978-3-95796-000-9, <http://projects.digital-cultures.net/meson-press/files/2014/06/9783957960016-rethinkinggamification.pdf>, ISBN (PDF): 978-3-95796-001-6, 2014.
6. Ernest Adams, "Fundamentals of Game Design", 3rd Edition, New Riders; ISBN-10: 0321929675, 2013 .
7. Characteristics of Games" by George Skaff Elias, Richard Garfield, and K. Robert Gutschera (Publisher: MIT Press, 2012)

References:

1. Scott Nicholson, "A User-Centered Theoretical Framework for Meaningful Gamification," Proceedings of the 8th Games Learning and Society Conference (2012) .
2. B.J. Fogg, "A Behavior Model for Persuasive Design", Proceedings of the 4th international Conference on Persuasive Technology (ACM, 2009)
3. Joey Lee and Jessica Hammer, "Gamification in Education: What, How, Why Bother?" Academic Exchange Quarterly 15.2, 2011.
4. Steffen P. Walz and Sebastian Deterding, eds., "The Gameful World: Approaches, Issues, Applications", MIT Press, 2015, (selected chapters), chapter. 18 (Gamification and the Enterprise)
5. Juho Hamari and Vili Lehdonvirta, "Game Design as Marketing: How Game Mechanics Create Demand for Virtual Goods," International Journal of Business Science and Applied Management 5:14 (2010) .
6. Roger E. Pedersen, "Game Design Foundations", Jones & Bartlett Learning; 2009, Second Edition, ISBN-10: 1598220349.
7. Kevin Werbach and Daniel Hunter, "For the Win: How Game Thinking Can Revolutionize Your Business", (Wharton Digital Press, 2012).
8. "Reality is Broken: Why Games Make Us Better and How They Can Change the World" by Jane McGonigal (Publisher: Penguin Books, 2011).
9. "Rules of Play: Game Design Fundamentals" by Katie Salen Tekinbas and Eric Zimmerman (Publisher: MIT Press, 2003).



10. Katie Salen and Eric Zimmerman, "Rules of Play: Game Design Fundamentals", MIT Press, , ISBN 0-262- 24045-9, 2003.
11. Byron Reeves and J. Leighton Read, "Total Engagement: Using Games and Virtual Worlds to Change the Way People Work and Businesses Compete", (Harvard Business Press, 2009) (selected chapters).

Online Resources:

1. [Introduction to Game Design | Coursera](#)
2. [Microsoft Word - 2WS0404HunickeR.doc \(northwestern.edu\)](#)
3. [The Game Design Resource Guide. I rounded up a list of references for... | by Alexia Mandeville | Medium](#)
4. [\(1\) \(PDF\) Digital Games and Gamification in Education: Chapter 11 – Assessment Based Games and Gamification \(researchgate.net\)](#)
5. [1 - Gamifying the development of critical thinking in education - Drimify](#)
6. [Gamification \(edtechbooks.org\)](#)
7. [LitReview Gamification 12FEB19.pdf \(advanced-hindsight.com\)](#)

Suggested Experiments:

Game Design and Gamification Laboratory (DJS22AMHN1L2)	
Sr. No	Title of Experiment
1.	Analyze a game and describe it in terms of its core elements, game mechanics, rules
2	Gamification Definition Video: Create a video, animation, or screencast up to ten minutes long, which explains the concept of gamification. Imagine you are describing to a friend or relative what this course is about, and why it's an important topic. To the extent possible, anticipate and address possible misunderstandings. Humor and creativity are encouraged!
3	Spend some time playing a casual online/mobile game, such as Candy Crush Saga, Clash of Clans, or Words with Friends. (These are just examples; it can be any game of your choosing, so long as you didn't already use it for a prior assignment.) Analyze the techniques the game uses to motivate players to participate, and to keep playing. Are they effective? Why or why not?
4	Identify two games. Do a comparative analysis that explains which system you think is most successful, and why. Give specific examples of design aspects that you find effective or ineffective.
5	Casual Games: Spend some time playing a casual online/mobile game, such as Candy Crush Saga, Clash of Clans, or Words with Friends. (These are just examples; it can be any game of your choosing.) Answer the following questions, drawing on the concept discussed in the course: Is the game fun? Why or why not? What could a business learn from this game?
6	Application Comparison: Compare the use of gamification in two of the four application categories, viz., Marketing, Workplace, Learning, Behavior Change. How would a successful gamification system differ in the two situations, and how would it be similar? In which do you think gamification can be more effective?
7	Develop a simple digital game or gamified system that incorporates the selected game mechanics. Ensure that the game addresses a specific objective (e.g., learning a concept)
8	Mini Project

Minimum eight tutorials from the above suggested list or any other tutorial based on syllabus will be included, which would help the learner to apply the concept learnt.



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(Autonomous College Affiliated to the University of Mumbai)

NAAC Accredited with "A" Grade (CGPA : 3.18)



Prepared by

Checked by

HoD

Vice Principal

Principal

