B. Tech SEM I

Abusinesis to convenience representation and			llege of Engineering		
		(Government 2	Aided Autonomous Ir	istitute)	
			AY 2021-22		
			urse Information		
Progra			ation Technology)		
Class,	Semester	Final Year B. Te	ch., Sem VII		
Course	e Code	45T401			
Course	e Name	Data Mining	иншины далаганыны понко-режения широв чито «чито «чито»		
Desire	d Requisites:	Statistics and Ma	thematics		
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Te	aching Scheme		Examination S	Scheme (Marks)	
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2	THE RESIDENCE OF THE PROPERTY	s data mining tools.		ata mining.	
3			ques to handle real w	vorld problems	
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At the	end of the course, th				
CO1			hniques of data minir	1g	Understand
CO2			ing real life problems		Apply
CO3	Evaluate optimized	solution in data mi	ining using complex	and huge dataset	Evaluate
Modu	le	Mod	ule Contents		Hours
	Introduction:	Basic Concepts in	Data Mining		anna i andianina a sana i ain ai ai ai ain ain ain an air ai ain ann an ain an ain an ain an air an Amhainn ail an mh
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	Data Mining P			VC 1 17 1 1.	
Π				Mining, Knowledge	6
2000 ha (2000 de 100 de		Data generalization	i & summanzation.		
III	Association Ru		Association Rule of	eneration, correlation	7
111		aint based Associat		onoration, contraction	•
	Classification				
IV			classifier, Back propa	agation, Classification	7
		ction, ensemble clas			
	Cluster analys				
V	1	. •	nethods, (partitioning	g based, hierarchical	6
		pased, grid based),			
3.77		Mining Complex		mining tout datagata	6
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			Text Books		
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1			nagement Systems, 2		Landin, The
2				topics", 2 nd Edition, Per	arson, 2003
				Practical Machine Lear	
3	Techniques", 3rd Ed				
	and the second s			THE RESIDENCE OF THE PROPERTY	
			References		

1	Rajan Chattamvelli, "Data Mining Methods: Concepts & Applications", Narosa Publishing House International Publisher, 2010
2	Sushmita Mitra, Tinku Acharya, "Data Mining Multimedia, Soft Computing and Biometrics", WILEY Publication, 2003
3	
	Useful Links
1	https://nptel.ac.in/courses/106/105/106105174/
2	https://www.mygreatlearning.com/blog/data-mining-tutorial/
3	https://www.coursera.org/specializations/data-mining

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Assessm	ent Plan based	l on Bloom's Taxo	nomy Level	
Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

			AY	2021-22								
			Course I	nformation								
rog	gramn	1e	B.Tech. (Info	rmation Technol	ogy)							
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	Tea	aching Scheme		Examination	n Scheme (Marks)							
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I	II	Principles of Public				7						
		Distribution of Publ			hange							
		Authentication Fu			. 101	_						
Ι	V	Hash Functions, Me	•	tion Codes, Digit	tal Signatures	7						
****		Kerberos, X.509 Ce										
		IP & Web Security		tion Handar T-	agangulating Commit-							
		Payload, Combining			ncapsulating Security	6						
,	V				and Transport Layer	O						
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7		Perimeter Security										
		Intruders, Intruder I		rd Management.	Malwares	6						
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- Menezes, A. J., P. C. Van Oarschot, and S. A. Vanstone, "Handbook of Applied Cryptography", CRC Press, 2nd Edition, 2018
- Schneier, Bruce, "Applied Cryptography: Protocols & Algorithms", Wiley Publication, 2nd Edition, 2015

Useful Links

- https://www.researchgate.net/publication/26585503_Network_Security_Policies_and_Guideline s_for_Effective_Network_Management
- 2 https://www.tutorialspoint.com/information security cyber law/network security.htm
- 3 https://cis-india.org/internet-governance/publications/it-act/short-note-on-amendment-act-2008

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The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.

Assessment

Assessn	nent Plan base	ed on Bloom's Tax	onomy Level	
Bloom's Taxonomy Level	T1	Т2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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	ng Scheme	LA1	LA2	ESE	Total
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Tutorial		30	30	40	TOO
Practical	2 Hrs/Week				rentary type a prompt a state from a surp a physique conference poliment from a sub-office consecutive field to distin
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		g solution to solve		**************************************	Create
CO3 Dev	crop a data mini	ig solution to solve i	icai word prodici		
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	ls and Technique	n, Eibe Frank, and		ta Mining: Practical Pata Management Sy	
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		Ua	seful Links		

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-	2	https://nptel.ac.in/courses/110/107/110107095/	
-	3	https://www.coursera.org/specializations/data-mining	1

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	ee components of lab a E is a separate head of		LA2 and Lab ESE. A2 together is treated as In-Semester Evaluat	tion.	
Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks	
LA1	Lab activities,	Lab Course	During Week 1 to Week 6	20	
LAI	attendance, journal	Faculty	Marks Submission at the end of Week 6	30	
LA2	Lab activities,	Lab Course	During Week 7 to Week 12	20	
LAZ	attendance, journal	Faculty	Marks Submission at the end of Week 12	30	
Lab ESE	Lab activities,	Lab Course	During Week 15 to Week 18	40	
Lau ESE	attendance, journal	Faculty	Marks Submission at the end of Week 18	40	

Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

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Bloom's Taxonomy Level	LA1	LA2	Lab ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
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Apply	20	20	20	60
Analyze	5	5	10	20
Evaluate	and the second s	5	5	10
Create			5	5
Total	30	30	40	100

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Те	eaching Scheme		Examinatio	n Scheme (Marks)			
Lectur		LA1	LA2	Lab ESE	Total		
Tutori		30	30	40	100		
Practio	cal 2 Hrs/week	***************************************	Market				
Intera	ction 1 Hr		Cı	redits: 2			
			Course Objectives				
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2	To contribute or dev			ment	geografia des e y corto de el Aldre codo de la lactica del Maldrid Ladrid de Maldrid (Maldrid Maldrid		
3	To compare various	anny artification and a comparable points of the second part of the second part of the second part of the second					
4		ALTONOMICA CONTRACTOR	CO) with Bloom's	Caxonomy Level			
	end of the course, the				Apply		
CO1							
CO2							
CO3	Create open source s	oftware or contr	ibute to existing ope	n source software	Create		
Modu	la l	M	odule Contents		Hours		
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				al aspects of Open source			
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I				d Software Development	3		
				n source software, FOSS			
				nomy of FOSS, History of			
	Linux, Kernel Ve	ersions.					
	Open source de						
II	1 -	-	ource software development	2			
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III				ersion control (git/github),	2		
				localization, accessibility,			
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IV	Open source Via			Images, alternative to	2		
1 V			docker, Contained nerization of FOSS t				
	Configuration o						
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	Web Server Too		en Bellin Sellet Mark Seller and Assess About About Armen Arch And Seller Seller Asses Asses And	790014411141151414141416166666666666666666			
				LAMP, XAMPP, Apache,			
VI	l l			ems – WordPress, Joomla,	2		
			Magento, social netw		_		
		, 100ps, 1					
		List of Ex	periments / Lab Ac	tivities			

- 1. Compare the various Linux Distributions and their usage
- 2. Comparison of various Open Source tools: Project management
- 3. Comparison of various Open Source tools: bug tracking
- 4. Comparison of various Open Source tools: version control system
- 5. Comparison of various Open Source tools: CMS
- 6. Compilation and installation of Linux Kernel
- 7. Creation Of RPM/DEB packages
- 8. Excise the development of Open Source Software:-Develop simple software for basic needs such as calculator, editor or any small noticeable contribution in existing FOSS.
- 9. Configuration of Server based services and their uses
- 10. Docker container: An open source software development platform

Text Books

- Andrew M. St. Laurent, "Understanding Open Source and Free Software Licensing", First edition, O'Reilly Media, Inc, ISBN:9780596005818
- Paul Kavanagh, "Open Source Software: Implementation and Management", First edition, Digital Press, 2004, ISBN: 9780080492001.
- Stefan Koch, "Free/Open Source Software Development", First edition, Idea Group Publishing, 2004.

References

- Zhao Jiong, "A Heavily Commented Linux Kernel Source Code", Third edition, Old Linux Publications, 2019
- 2 Stefan Koch · "Free/Open Source Software Development", First edition, IGI Publishing, 2004, ISBN-13: 978-1591403692

Useful Links

- 1 https://bitnami.com/
 - 2 https://labs.play-with-docker.com/
 - 3 https://github.com/mit-pdos/xv6-public
 - 4 https://www.gnu.org/software/fsfe/projects/ms-vs-eu/halloween1.html

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CO3									***************************************		***************************************	2	the telephone of a self-term or companies. You concerns the	

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.

Assessment

There are three components of lab assessment, LA1, LA2 and Lab ESE.

IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.

Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks	
LA1	Lab activities,	Lab Course	During Week 1 to Week 6	20	
LAI	attendance, journal	Faculty	Marks Submission at the end of Week 6	30	
LA2	Lab activities,	Lab Course	During Week 7 to Week 12	20	
LAZ	attendance, journal	Faculty	Marks Submission at the end of Week 12	30	
Lab ESE	Lab activities,	Lab Course	During Week 15 to Week 18	40	
Laurisi	attendance, journal	Faculty	Marks Submission at the end of Week 18	40	

Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

Assessm	ent Plan based on	Bloom's Taxonon	ıy Level	
Bloom's Taxonomy Level	LA1	LA2	Lab ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5		HE CANTO AND A MAN REGION THAT CANNER STREET AND	05
Apply	20	20	20	60
Analyze	5	5	10	20
Evaluate	TO BE AND THE CONTROL OF THE CONTROL	5	5	10
Create			5	5
Total	30	30	40	100

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2			nanagement cycle for			
3	To il		evelopment techniqu	THE POST OF THE PO		
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CO1			automation testing to		errores in the material section is the section of t	Apply
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CO3			evelopment life cycl			Evaluate
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		est Case Design		ie Development		
II	1	_	_	ues. Black-box Tes	t Techniques, White-box	6
					evels of Software Testing	
	T	ypes of Softwa	re Testing:			
					g, System Testing, User	
III			ng, Sanity/Smoke T			7
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		ecurity Testing	ig), Osability Testing	g, Companionity 16	sung, Kenaomity Testing,	
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IV					ership, Teamwork, Project	6
				o Pagauraa Alla	ocation, Software Quality	
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* 7	A	ne Fundamenta	als of Agile Softw	ards ware Development	t, Extreme Programming, Testing in Traditional and	
v	A	ne Fundamenta spects of Agile	als of Agile Soft Approaches, The D	ards ware Development bifferences between	t, Extreme Programming, Testing in Traditional and Role and Skills of a Tester	6
V	A:	ne Fundaments spects of Agile gile Approache an Agile Team	als of Agile Soft Approaches, The D s, Status of Testing	ware Development Differences between in Agile Projects, Chods, Assessing Qu	Testing in Traditional and Role and Skills of a Tester uality Risks and Estimating	6

	DevOps Testing	
	DevOps, Version control with Git, Git, Jenkins, Maven, Integration with Jenkins,	
VI	Continuous Integration and Continuous Delivery CI/CD: Jenkins Creating	7
	pipelines, Setting up runners Containers and container orchestration (Dockers and	/
	Kubernetes) or application development and deployment.	

List of Experiments / Lab Activities

List of Experiments:

- 1. Demonstrate Debugging Tool.
- 2. Implement White Box Testing(Manual)
- 3.Implement Black Box Testing(Manual)
- 4.Implement Unit Testing(Automated): TestNG
- 5.Implement Performance Testing(Automated) using JMetre:
- 6. Demonstrate Test Management Tool:TestStuff
- 7. Demonstrate Test Management Tool:TestLink
- 8. Demonstrate Web-Test Automation Tool- Selenium IDE
- 9. Demonstrate Web-Test Automation Tool- Selenium Web-Driver
- 10.Demonstrate Project Management Tool:JIRA
- 11. Implement Test automation using DevOps.
- 12. Demonstrate project life cycle using Agile framework.

	12. Demonstrate project life cycle using Agile framework.

	Text Books
1	Glenford J. Myers, Corey Sandler, Tom Badgett, "The Art of Software Testing", Third edition, Wiley, 2011, ISBN: 978-1-118-13315-6
2	Ron Patton, Corey Sandler, Tom Badgett, "Software Testing", Second edition, Sams, 2005
3	Lisa Crispin and Janet Gregory, "Agile Testing: A Practical Guide for Testers and Agile Teams", First edition, Addison-Wesley Signature Series, 2009.
4	Teresa Luckey, Joseph Phillips, "Software Project Management For Dummies", First edition, Wiley, 2006, ISBN: 9780471749349.
	References
1	Lee Copeland, "A Practitioner's Guide to Software Test Design", First edition, Artech House, 2003, ISBN-13: 978-1580537919.
2	Joakim Verona · " <i>Practical DevOps</i> ", First edition, Artech House, 2016, ISBN-13: 9781785886522, 1785886525.
3	Henry "Software Project Management: A Real-World Guide To Success", First edition, Pearson Education, 2004, ISBN- 9788131717929, 8131717925.
	Useful Links
1	https://www.javatpoint.com/software-testing-tutorial
2	https://www.guru99.com/software-testing.html
3	https://www.getzephyr.com/insights/developing-devops-testing-strategy-benefits-best-practices-tools
4	https://www.softwaretestinghelp.com/agile-scrum-methodology-for-development-and-testing/

						CO-J	PO Ma	pping						
permitter in the committee of the commit	Programme Outcomes (PO)										PS	O		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	The state of the s	AND THE PARTY OF T	1	-10-14-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	3	.,,,.,,,,,,,,,,,,,,,,,,,,,,,,,,,,							2	
CO2							***************************************		2	and the table to prove the contract of the con	3		e constitution de seguine de destina que el seguine de la constitution	
CO3												2	COLUMN TO THE PROPERTY OF THE	The second secon

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.

The assessment is based on 2 in-semester evaluations (ISE) of 10 marks each, 1 mid-sem examination (MSE) of 30 marks and 1 end-sem examination (ESE) of 50 marks.

MSE is based on the modules taught till MSE (typically Module 1-3) and ESE is based on all modules with 30-40% weightage on modules before MSE and 60-70% weightage on modules after MSE.

Assessmen	iit I iaii baseu vii	Bloom's Taxono	my Level	
Bloom's Taxonomy Level	LA1	LA2	ESE	Total
Remember	ark-1980 (1970) 1970 (1970) 1970 (1970) 1970 (1970) 1970 (1970) 1970 (1970) 1970 (1970) 1970 (1970) 1970 (1970		To perform the first Add to the contract on the contract of the series description and find a debaute and an additional and an additional and an additional and additional additional and additional additional additional additional and additional a	
Understand	15	10		25
Apply	10	10	10	30
Analyze	5	10	10	25
Evaluate	The second of th		10	10
Create		Control of the Mantalana and Control of the Control	10	10
Total	30	30	40	100

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)

AY 2021-22

	A1 2021-22				
Course Information					
Programme	B.Tech. (Information Technology)				
Class, Semester	Final Year B. Tech., Sem VII				
Course Code	417491				
Course Name	Project 1				
Desired Requisites:					

Teachir	ig Scheme		Examinatio	n Scheme (Marks)
Lecture	an	LA1	LA2	Lab ESE	Total
Tutorial		30	30	40	100
Practical	6 Hrs/Week			White V gall and a served semble physics are suffered a demanded and an extra construction and a served semble and a served se	
Interaction	-		C	Credits: 3	

	Course Objectives						
1	To identify real life needs and project requirements						
2	2 To elaborate technical solutions through latest design & development tools						
3	To compare and analyze the IT platforms for efficient solutions						
	Course Outcomes (CO) with Bloom's Taxonomy Level						
At the er	d of the course, the students will be able to,						
CO1	Integrate project at every stage of the software development life cycle	Apply					
CO2	Recommend project plans that address real-world challenges	Evaluate					
CO3	Develop software projects with strategic goals	Create					

List of Experiments / Lab Activities

List of Experiments:

Project is to be carried out in a group of maximum 5 to 6 students.

Each group will carry out a project by developing any application software based on the following areas.

- 1. Application can be based on any trending new technology.
- 2. Application can be extension to previous projects.
- 3. Project group should achieve all the proposed objectives of the problem statement.
- 4. The work should be completed in all aspects of design, implementation and testing and follow software engineering practices.
- 5. Project reports should be prepared and submitted in soft and hard form along with the code and other dependency documents. Preferable use online code repositories (github/bitbucket)
- 6. Project will be evaluated continuously by the guide/panel as per assessment plan.
- 7. Presentation and report should use standard templates provided by department.

Project report (pre-defined template) should be prepared using Latex/Word and submitted along with soft copy on CD/DVD (with code, PPT, PDF, Text report document & reference material) or on an online repository.

Students should maintain a project log book containing weekly progress of the project.

1	Rajendra Kumbhar, "How to Write Project Reports, Ph. D. Thesis and Research Articles
1	Universal Prakashan, 2015
2	Marilyn Deegan, " Academic Book of the Future Project Report", A Report to the AHRC
Z	& the British Library, 2017

1	https://www.youtube.com/watch?v=0oSDa2kf5I8 (report writing)
2	
THE PARTY PA	
	Useful Links
1	https://pats.cs.cf.ac.uk/wiki/lib/exe/fetch.php?media=project-report.pdf
2	http://users.iems.northwestern.edu/~hazen/Writing%20Project%20Reports%202004a.pdf
3	https://www.upgrad.com/blog/java-project-ideas-topics-for-beginners/
4	https://www.geeksforgeeks.org/computer-science-projects/

						CO	-PO N	Iapp:	ing					
				Pr	ogran	ıme C)utco:	nes (PO)			VIII.	***************************************	PSO
Add Pales (1994) Albands was one dissolve also made over	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1		1	2		2	<u> </u>	***************************************					3	*************************************	and all desired and appropriate to the second and appropriate to t
CO2	***************************************				***************************************					2			2	
CO3				ARMANAINE			3			TTMAT ARTES ATT Mingroom Ingenty o	2		THE STATE OF THE S	1

Assessment

There are three components of lab assessment, LA1, LA2 and Lab ESE.

IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.

Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 15 to Week 18 Marks Submission at the end of Week 18	40

Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

Bloom's Taxonomy Level	LA1	LA2	Lab ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	4 For a constitution of a distribution of the Control of the Co	the season of th	CONTRACTOR OF THE STATE OF THE	
Apply	15	10	10	35
Analyze	5	10	5	20
Evaluate	5	5	10	20
Create	5	5	15	25
Total Marks	30	30	40	100

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute) AY 2021-22 **Course Information** B.Tech. (Information Techology) Programme Class, Semester Final Year B. Tech., Sem VII **Course Code** HOE485 Open Elective -3: Data Visualization and Interpretation **Course Name** Programming languages like C, C++ **Desired Requisites: Examination Scheme (Marks) Teaching Scheme** Total Lecture 3 Hrs/week **T1 ESE** Tutorial 20 20 60 100 _ **Practical** Credits: 3 Interaction **Course Objectives** To visualize the data into scientific form for interpretation and processing 1 2 To demonstrate data analysis using various libraries and techniques To compare a well-structured typeset articles, books, reports Course Outcomes (CO) with Bloom's Taxonomy Level At the end of the course, the students will be able to, Apply the key techniques to visualize data models Apply Analyze dataset and use appropriate visualization techniques Analyze CO₂ CO₃ Create articles, reports using Open source tool (LATEX) Create **Module Contents** Hours Module Introduction to Data Science -Overview of the Data Science process, Introduction to Data Science 5 I technologies, Introduction to Machine Learning, Regressions, Classification, Clustering, Recommendation Systems Working with Data in R – 8 П Variables, Vectors, Matrices, lists & Data frames, Logical vectored operators Image data type, Image representation, categorical data using Factors in R Data/Image Visualization using libraries – Using graphs to visualize data, Basic plotting in R, Manipulating the plotting Ш 6 window, Advanced plotting using lattice library in R. Image visualization in using Image processing tools Models in Machine Learning -Regression Models, Classification Models, Unsupervised Learning Models, Recommendation Models. Models considered: - Linear regression: lm() -IV 8 Logistic regression: glm() - Poisson regression: glm() - Survival analysis: Surv(), coxph() – Linear mixed models: lme() Data Reporting using LaTeX -LATEX Software installation, LATEX typesetting basics, LATEX math 6 V typesetting, Tables and matrices, Mathematics in Latex Case Studies -VI Titanic Survival analysis, face detection, Housing price prediction analysis, 6 Customer segmentation analysis, Iris data analysis Text Books Dr. Mark Gardner, Beginning R:statistical Programming Languages, Wrox (Amazon), Mar2013 1 2 Griffithas, Higham, Learning LATEX, Amazon, 2014 References Basic Data Analysis Tutorial, by Jacob Whitehill, Department of Computer Science, 1 University of the Western Cape, 24/07/2009 [UWCDataAnalysisTutorial.pdf] 2 NPTEL, Edx, Coursera (MOOC courses)

	Ticofal Live
1	Weful Links Module I https://www.coursera.org/learn/what-is-datascience?specialization=introduction-datascience#syllabus
2	Module II, III, IV and VI https://onlinecourses.nptel.ac.in/noc21_cs23/preview https://www.coursera.org/learn/r-programming/home/welcome
3	Module V https://www.overleaf.com/learn/latex/Free online introduction to LaTeX (part 1)

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	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1				2					MICHARIA NA PROPERTO ANTONIO PROPERTO AN	1	2		1	
CO2		1							~~~ ***********************************					1
CO3	1	***************************************	<u> </u>			<u> </u>					3	3		

Assessment

		on Bloom's Taxon	and the state of the second of	
Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

	W	alchand Colle (Government 2	ge of Engineer	ing, Sangli					
	on the second		AY 2021-22						
10.0		Cou	rse Information						
Progra	amme	B.Tech. (Information	tion Technology)						
	Semester	Final Year B. Tec							
Course		4IT411							
	e Name		tive 3: Software De	fined Network					
	d Requisites:		rks, Cloud Computi						
Desire	a Kequisites.	Computer Networ	iks, Cloud Compan	111g vanasamus vanasamus anamana manamahana manamahana manamahan anamanahan manamaha kada manamahan kada mahanbari					
Та	aching Scheme		Evamination	Scheme (Marks)					
Lectur		T1	T2	ESE	Total				
		20	20	60	100				
Tutori		20		OU .	TVV				
Practio				124					
Intera	ction -	on - Credits: 3							
			01: 4						
	m 11		urse Objectives						
1	To elaborate fundam	ratabar salara aspessor		AND THE RESERVE AND ADDRESS OF THE PROPERTY OF	Private Value Monte Value Valu				
2	To impart Software								
3	To introduce the net			_					
	The state of the s	irse Outcomes (CO	and the second state of the second	axonomy Level					
	end of the course, the Interpret the abstract			ad naturalir	Understand				
CO1		The state of the s			Analyze				
CO2	_	es to software defined	Allaryze						
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CO3	Develop a network	runction for data ce	ntre applications		Create				
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		ng Device and SD		round, The Modern					
I		ditional Switch Are			7				
	Forwarding Tab								
		Introduction to SDN							
п		SDN Implications: Research and Innovation, Cost, Industry, Data Centre							
11	Innovation, Data Centre Needs, Real Time Case Study of Data Centre,								
		letwork Virtualizati	on, Network Functi	on Virtualization					
		Open Flow Protocol and SDN OpenFlow: Flow Table structure, Flowtable Actions, Flow messages, Legacy							
III					7				
	Methods.	Mechanisms Evolve Toward SDN, SDN Applications, Alternate SDN Methods.							
	SDN in Data Co	entre		ra ya dhahadanda inin amadan arasa kadi yana 1888. Angistak a ja mindi da Bala dha sakara katan saka maya maya					
				eling Technologies for					
IV				re, Ethernet Fabrics in	7				
				re, Open SDN versus					
		Data Centre, Real-V	Vorld Data Centre I	mplementations.					
	Application of		Global Network	View, Wide Area					
v		•		, Campus Networks,					
				ork Functions, Optical	6				
Na control and con		vs. P2P/Overlay N		- 1					
	Network Funct	ion Virtualization		The state of the s					
VI	_	ork Virtualization			6				
	Virtualization ar	nd Data Plane I/O, S	services Engineered	Path					

References Thomas D. Nadeau, "Software Defined Networks, An Authoritative Review of	dition, Wiley publication, 2016. homas Erl, Zaigham Mahmood and Ricardo Puttini," Cloud Computing: Concepts, Technology Architecture", Pearson, 1st Edition, 2010
References Thomas D. Nadeau, "Software Defined Networks, An Authoritative Review of	Architecture", Pearson, 1st Edition, 2010
Thomas D. Nadeau, "Software Defined Networks, An Authoritative Review of Networks,	References
Programmability Technologies", Ken Gray Publisher, August 2013, ISBN: 978-1-4493-4230-2	homas D. Nadeau, "Software Defined Networks, An Authoritative Review of Network rogrammability Technologies", Ken Gray Publisher, August 2013, ISBN: 978-1-4493-4230-2.
	Useful Links
	tps://www.katacoda.com/courses/kubernetes tps://aws.amazon.com/
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CO3	2		***************************************		***************************************		With a first on a place and a section of the sectio			(***)**	di ni nika ili ju di pri di Immiri, military ili jugaridan	**************************************		3

Assessm	ent Plan based	l on Bloom's Taxor	iomy Level	
Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create		THE PART OF THE PA	5	5
Total	20	20	60	100

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Progra	ımme			ation Technology)		
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Course				ctive 3 :Visual Con	nputing	
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Te	achins	g Scheme		Examination	n Scheme (Marks)	
Lectur		3 Hrs /week	T1	T2	ESE	Total
Tutori			20	20	60	100
Practio			militar original distances of the more Areas and reduced MAA (A), A VIII A militarili de a contra sid Companient			
Interac		_		C	redits: 3	
		REPORTED AND VIOLATION AND AND AND AND AND AND AND AND AND AN	West of the state		noch verschaft dem versche der der der setzert versche Landere verschaft der der Schale verschaft der der der	
			Co	ourse Objectives		
1	To el	aborate need of		nics application in v	visual computing	
2					imitives like: line, circle,	polygon etc.
3	To re	present and tra	nsform the media	data for application	n development	
	1 0			CO) with Bloom's '	Taxonomy Level	
CO1	-Control from the state of the second	BAROLO ARBITRA NA CARROLO DE LA CARROLO DE PROPERTO DE LA CARROLO DE LA CARROLDO DEL CARRO	students will be a mitives using Ope			Analyze
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CO2	.,,.,			bjects using OpenC	řL.	Apply
CO3	Imple	ement clipping	algorithm on lines	s using OpenGL.		Apply
	1					h
Modu	STATE OF THE STATE			ule Contents		Hours
	1	raphics Primi		,.	. 1 .1	
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			s, character attrib		ioration, into attribution,	
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П				tion, scaling), matr		6
- 11			coordinates, con	posite transform	ations, reflection and	
		nearing D Viewing		BOOM OVER THE STREET BY A STRE	contracts the contract at this interest of a distant of the deal through the distance of the d	
		ewing pipel	ine and coor	rdinates system,	window-to-viewport	_
Ш					line clipping (cohen-	7
			- bersky, NLN), p			
	31	D concepts and	d object represen	tation:	The second secon	
	1				ons, meshes, curved lies	_
IV	- 1			s, spline represe		7
	i	terpolation me irfaces	anous, Bazier ci	irves and surfaces	s, B-spline curves and	
		D transformat	ion		dipanteria non submittante de partir de la contra del la contra del la contra del la contra del la contra de la contra del la contra	
V	i			n, composite transf	ormation	6

VI	3D viewing: viewing pipeline and coordinates, parallel and perspective transformation, view volume and general (parallel and perspective) projection transformations	6
	Text Books	
1	Edward Angel: Interactive Computer Graphics- A Top Down approach with OpenG Pearson Education, 2008	L, 5th edition.
2	Shallini Govil-Pai, Principles of computer Graphics, Springer	
	References	
1	M MRaiker, Computer Graphics using OpenGL, Filip learning/Elsevier	3,1 15 3,2 4,4 15 4,5 15 15 15 15 15 15 15 15 15 15 15 15 15
2	Donald Hearn & Pauline Baker: Computer Graphics with OpenGL Version,3r Pearson Education,2011	d/ 4thEdition,
	Useful Links	
1	https://www.cs.uregina.ca/Links/class-info/405/WWW/Lab1/	
2	http://people.csail.mit.edu/hasinoff/320/	
3	http://www.cs.toronto.edu/~kyros/courses/320/	

						CO-I	PO Ma	apping								
	Programme Outcomes (PO)													PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
CO1	2					**************************************	**************************************					2		2	<u> </u>	
CO2	1			1	2		CMT 4/18/dr afff fritz					***************************************	1		 	
CO3	3	2							***************************************					***************************************		

Assessment

Bloom's Taxonomy Level	T1	Т2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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	And the state of t			AY 2021-22			
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Progra	amme			tion Technology)		makes makes he had now the form of the second the secon	
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Cours	e Nam	e	Professional Elec	tive 3: High Perfor	mance Computing		
		uisites:	Parallel Computi				
T. A.				T			
Lectur		g Scheme 3 Hrs/week	T1	T2	Scheme (Marks) ESE T	'otal	
Tutori		J IIIS/ WEEK	20	20		Total 100	
			20	<u> </u>	UV		
Practi- Intera					dits: 3	***************************************	
Intera	ction		400 000 000 000 000 000 000 000 000 000	Cre	aus: 3	mense file de la secución de la companya de la comp	
			Cou	urse Objectives			
1	To in	troduce proces	s communication in	n parallel programs		Annual Commence and Commence of the Commence o	
2	To el	aborate the effe	ect of process comn	nunication on the pe	erformance of parallel program	ns	
3	To de	fine algorithm	s in parallel process	sing for a given prol	olem	The second secon	
)) with Bloom's Ta	ixonomy Level		
	·	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	students will be ab			Apply	
CO1 Select appropriate methodologies to solve the real-world problem CO2 Analyse the algorithm to optimize the communication and computation costs							
CO2 CO3	-	***************************************		gineering problems		Analyze Create	
COS	Desig	gir uic appropri	ate algorithm for ca	ignicering producins	and provided two plants as a forest a series southernooned recording the series of the	Cicate	
Modu	le		Mo	odule Contents		Hours	
I	O			uce, Prefix Sum,	Scatter Gather, All to All	7	
II	À	nalytical Mod	lelling of Parallel F		nularity on performance	6	
III	A	nalytical Mod	lelling of Parallel F			7	
IV	D	ense matrix al	lgorithms	plications, Solving		7	
V	S	orting	etwork, Bubble sort			6	
VI	G	raph Algorith IST, SSSP, AP	ıms			6	
1			l Gupta, George Ka		," Introduction to parallel co	mputing",	
_			rson Education ,20 m . Kevin Dow		nance Computing", OpenS	tax CNX	
2	1	cations, 2021	m , novm bow	u, ligh l'orjonn	unice companing, opens		
				References			
1	E .	owitz, Sahni R any Press, Nev	ajasekaran, "Comp		Computer Science, W. H. Fre	eman and	
				Lix D "L.4 J4	ion to Parallel Computing",	Caringan	

	Useful Links
1	https://onlinecourses.nptel.ac.in/noc20_me61/preview
2	https://www.geeksforgeeks.org/introduction-to-parallel-computing/
3	https://hpc.llnl.gov/training/tutorials/introduction-parallel-computing-tutorial

	Programme Outcomes (PO)												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1					3	Andrian a Addition areas a recognision accessor	**************************************			1		1			
CO2		1			2								1	5. E. 1984, 1864, go to b. de 1964, to a separate a sep	
CO3	1	2					PERSONAL PROPERTY OF THE PERSONAL PROPERTY OF				***************************************			2	

Assessment

		on Bloom's Taxon		
Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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	***************************************			ded Autonomous Inst Y 2021-22	illule) 	
				se Information		
Proor	amme		B.Tech. (Informa			
	, Seme		Final Year B. Tec			
	se Code		HETHIH			
	se Nam			tive 3 : System Pro	gramming	
		uisites:		nd Operating Syste		
1	Ceachir	ng Scheme		Examination	Scheme (Marks)	
Lectu	re	3 Hrs/week	T1	T2	ESE	Total
Tutor	·ial	***	20	20	60	100
Pract	ical	_				
Intera	action	-		Cre	dits: 3	
object and the background property of						
				rse Objectives		
1			ncepts in systems p			
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3	To de		ots of high level prog			
	Y		rse Outcomes (CO	Construction of the contract o	xonomy Level	
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CO2		alyze the worki		al loadon		Analyze
CO3	10 00	mpare various o	compilers, linkers ar	id loaders		Analyze
Mod	ula		Mo	dule Contents		Hours
I		Systems Program Languages, Too Overview of I Processors, Lan	mming, Machine Si ols, Life Cycle of a Language Processo	tructure, Interfaces, Source Program, I rs Programming activities, Program	ware, Software Hierarchy, Address Space, Computer Levels of System Software Languages and Language Execution, Fundamental of	7
П		Assemblers: E Assembler, As Assemblers, On Algorithm of	lements of Assem sembler Design ne-Pass Assembler	bly Language Pro Criteria, Types o s, Single pass A embler, Multi-Pas	ogramming, Design of the of Assemblers, Two-Passessembler for Intel x86 as Assemblers, Advanced wo pass assembler,	6
п	I	Macro and Ma Expansion, Nes Pre-processor, I Basic Tasks of	acro Processors: In ted Macro Calls, A Design of a Macro a Macro Processor,	troduction, Macro dvanced Macro Fa Assembler, Functi Design Issues of N	Definition and Call, Macro cilities, Design Of a Macro ions of a Macro Processor Macro Processors, Features Processors, One-Pass Macro	7
IV	7	Linkers and Lo Linker, Self-Re Structured Prog Sequential and Schemes, Abso	elocating Programs grams, Dynamic Li Direct Loaders,	, Linking in MSI nking, Loaders, D Compile-and-Go cating Loaders, Pra	nking Concept, Design of a DOS, Linking of Overlay ifferent Loading Schemes Loaders, General Loade actical Relocating Loaders v/s Loaders	7 r 7
V		Scanning and Grammar, Amb Parsing, Botton YACC, Compil Data Structure u	Parsing: Programmiguity in Grammation up Parsing, Landers: Causes of Larg	ming Language G c Specification, Sca guage Processor ge Semantic Gap, E Scope Rules, Memo	rammars, Classification of anning, Parsing, Top Down Development Tools, LEX Binding and Binding Times ory Allocation, Compilation	6

1	Interpreters & Debuggers: Benefits of Interpretation, Overview of Interpretation, The Java Language Environment, Java Virtual Machine, Types of Errors, Debugging Procedures, Classification of Debuggers, Dynamic/Interactive Debugger	6
	Text Books	
1	D M Dhamdhere, System Programming, McGraw Hill Publication, second revised edition,	2009
2	Srimanta Pal, System Programming, Oxford University Press, 2011	
3	R.K. Maurya & A. Godbole, System Programming and Compiler Construction, Dreamtec 2014	n Press,
	References	
_	I cloud I Deal Code CC	
I	Leland L. Beck, System Software – An Introduction to Systems Programming, Pearson Ed Asia, 3 rd edition, 2000	ucation
2	Asia,3 rd edition, 2000	ucation
2	Asia, 3 rd edition, 2000 Santanu Chattopadhyay, System Software, Prentice-Hall India, 2007 R K Maurya and Anand A Godbole System Programming and Compiler Construction (I Labs), Dreamtech Press, 2014	
	Asia,3 rd edition, 2000 Santanu Chattopadhyay, <i>System Software</i> , Prentice-Hall India, 2007 R K Maurya and Anand A Godbole <i>System Programming and Compiler Construction (I</i>	
	Asia,3 rd edition, 2000 Santanu Chattopadhyay, System Software, Prentice-Hall India, 2007 R K Maurya and Anand A Godbole System Programming and Compiler Construction (I Labs), Dreamtech Press, 2014	
3	Asia,3 rd edition, 2000 Santanu Chattopadhyay, System Software, Prentice-Hall India, 2007 R K Maurya and Anand A Godbole System Programming and Compiler Construction (I Labs), Dreamtech Press, 2014 Useful Links	

						CO-I	PO Ma	pping		-				
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CO2		1			2		*					1	1	***************************************
CO3	1	2	1	1		<u> </u>	T					<u> </u>		2.

Assessment

The assessment is based on 2 in-semester evaluations (ISE) of 10 marks each, 1 mid-sem examination (MSE) of 30 marks and 1 end-sem examination (ESE) of 50 marks.

MSE is based on the modules taught till MSE (typically Module 1-3) and ESE is based on all modules with 30-40% weightage on modules before MSE and 60-70% weightage on modules after MSE.

Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create	and an annual property of the control of the contro		5	5
Total	20	20	60	100

B. Tech SEM-II

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute) AY 2021-22 **Course Information** Programme B.Tech. (Information Techology) Class, Semester Final Year B. Tech., Sem VIII Course Code HITHTI Course Name Techno-Socio Activity **Desired Requisites: Teaching Scheme Examination Scheme (Marks)** Lecture LA₁ LA2 **ESE** Total Tutorial 30 30 40 100 Practical 2 Interaction Credits: 1 **Course Objectives** 1 To propose a structured and rational solution to address the relevant skills 2 To motivate students towards the desirous need of industry, economy and society To provide opportunity to integrate IT based solutions with various enterprises Course Outcomes (CO) with Bloom's Taxonomy Level At the end of the course, the students will be able to. Employ the programme for welfare of society and environment CO₁ Apply Appraise pragmatic skills for national and international competitions CO₂ Analyze Recommend and propose engineering solution for industry and community CO₃ Evaluate List of Experiments / Lab Activities Assessment is based on the rubric decided by department Student can undertake any techno-socio activity as listed below but not limited to: Each student or group of students may work for the welfare of the environment, society through programmes such as tree plantation, blood donation campaigns etc. 2. Each student or group of students participating in technical events/competition/exhibition. 3. Certification of the MOOC courses (beyond syllabus) / Programming competition/ interaction with industry 4. Developing any innovative gadget / solution / system and technology transfer in the interest of Nation / Society / Institute (WCE) 5. Publishing papers /articles in national / international conferences / journals or similar contributions 6. Coordinating students' clubs / services like SAIT/WLUG/Lab administration or any other Organizing techno-socio activity for the students / community in rural areas, unprivileged areas **Text Books** 1 References 1 Useful Links **CO-PO Mapping Programme Outcomes (PO)**

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CO2				2		3			
CO3					200		2		

Assessment

There are three components of lab assessment, LA1, LA2 and Lab ESE.

IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.

Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks
T A 1	Lab activities,	Lab Course	During Week 1 to Week 6	30
LA1	attendance, journal	Faculty Marks Submission at the end of W		30
T 4.2	Lab activities,	Lab Course	During Week 7 to Week 12	30
LA2	attendance, journal	Faculty	Marks Submission at the end of Week 12	30
Lab ESE	Lab activities,	Lab Course	During Week 15 to Week 18	40
Lao ESE	attendance, journal	Faculty	Marks Submission at the end of Week 18	40

Week I indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

Assessm	ent Plan based on	Bloom's Taxonon	ıy Level	
Bloom's Taxonomy Level	LA1	LA2	Lab ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand		a galant von ment i juga et ament et a penemen er et en er en		05
Apply	20	20	20	60
Analyze	10	5	10	20
Evaluate		5	5	10
Create			5	5
Total	30	30	40	100

Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

AY 2021-22

	Course Information
Programme	B.Tech. (Information Technology)
Class, Semester	Final Year B. Tech., Sem VIII
Course Code	HIT492
Course Name	Project - 2
Desired Requisites:	Project - 1

Teaching	Scheme		Examinatio	n Scheme (Marks)	
Lecture	-	LA1	LA2	Lab ESE	Total
Tutorial	-	30	30	40	100
Practical	16 Hrs/Week				
Interaction			Cr	edits: 08	ha announced district the second of the seco

	Course Objectives	
1	To identify real life needs and project requirements	
2	To elaborate technical solutions through latest design & development tools	
3	To compare and analyze the IT platforms for efficient solutions	
	Course Outcomes (CO) with Bloom's Taxonomy Level	
At the e	nd of the course, the students will be able to,	
CO1	Integrate project at each stage of the software development life cycle	Apply
CO2	Recommend project plans that address real-world challenges	Evaluate
CO3	Develop software projects with strategic goals	Create

List of Experiments / Lab Activities

List of Experiments:

Project is to be carried out in a group of maximum 5 to 6 students. Project is to be carried based research paper from journals.

Each group will carry out a project by developing any application software based on the following areas.

- 1. Application can be based on any trending new technology.
- 2. Application can be extension to previous projects.
- 3. Results of the project is to be tested and validated against standard data set.
- 4. Project group should achieve all the proposed objectives of the problem statement.
- 5. The work should be completed in all aspects of design, implementation and testing and follow software engineering practices.
- 6. Project reports should be prepared and submitted in soft and hard form along with the code and other dependency documents. Preferable use online code repositories (github/bitbucket)
- 7. Project will be evaluated continuously by the guide/panel as per assessment plan.
- 8. Presentation and report should use standard templates provided by department.
- 9. Preferably student should present/publish article.

Project report (pre-defined template) should be prepared using Latex/Word and submitted along with soft copy on CD/DVD (with code, PPT, PDF, Text report document & reference material) or on an online repository.

Students should maintain a project log book containing weekly progress of the project.

	Text Books
1	Rajendra Kumbhar, "How to Write Project Reports, Ph. D. Thesis and Research Articles", Universal Prakashan, 2015
2	Marilyn Deegan, "Academic Book of the Future Project Report", A Report to the AHRC & the British Library, 2017

	References
1	https://www.youtube.com/watch?v=0oSDa2kf5I8 (report writing)
	Useful Links
1	https://pats.cs.cf.ac.uk/wiki/lib/exe/fetch.php?media=project-report.pdf
2	http://users.iems.northwestern.edu/~hazen/Writing%20Project%20Reports%202004a.pdf
3	https://www.upgrad.com/blog/java-project-ideas-topics-for-beginners/
4	https://www.geeksforgeeks.org/computer-science-projects/

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	Programme Outcomes (PO)											PS	O	
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CO3		***************************************					3				2			1

Assessment

There are three components of lab assessment, LA1, LA2 and Lab ESE.

IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.

Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 15 to Week 18 Marks Submission at the end of Week 18	40

Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

Bloom's Taxonomy Level	LA1	LA2	Lab ESE	Total
Remember	auraka da Aura derinaria derinaria dia da da derinaria dia da			
Understand	AND THE RESERVE OF THE PROPERTY OF THE PROPERT	ALANA BALIFE MANAGEMENT MANAGEMENT AND		as tree processes pro-recognitive properties of carried banks to the total state of the state of
Apply	15	10	10	35
Analyze	5	10	5	20
Evaluate	5	5	10	20
Create	5	5	15	25
Total Marks	30	30	40	100

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			Co	urse Information		
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Cour	se Nam	e		ective 4:Wireless N	etworks	
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****		Scheme		Examination	Scheme (Marks)	
Lectu	re	3 Hrs/week	T1	T2	ESE	Total
Tutor	'ial	-	20	20	60	100
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CO1			f wireless network		THE CONTRACT	Understand
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CO3				advanced wireless		Analyze
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	1		ction and Basics			
I	80	2.11 protocol	stack basics, RF sp		ns, unlicensed band usage,	7
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1	Eldad Perahia and Robert Stacey," Next Generation wireless LANS 802.11n and 802.11ac", 2nd edition, Cambridge University Press, 2013
2	Mathew Gast, 802.11 'Wireless Networks: The Definitive Guide', 2nd Edition, OReily, 2009
	References
1	Mathew Gast, "802.11n: A Survival Guide: Wi-Fi Above 100 Mbps", OReilly, 2012
2	Mathew Gast, "802.11ac: A Survival Guide: Wi-Fi at Gigabit and Beyond", OReilly, 2012
	Useful Links
1	https://onlinecourses.nptel.ac.in/noc19_ee48/preview
2.	https://onlinecourses.swayam2.ac.in/ugc19_cs10/preview

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CO3		1				1			******************				······································	2

Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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	Semester	Final Year B. Tech., Se	em VIII	THE STATE OF THE S	
	e Code	4ET 432			
	e Name	Professional Elective 4		Construction of the Constr	Y11104A.111111111111111111111111111111111
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ntera	ction -		Cred	its: 3	
4	т-:		Objectives		
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2		ced knowledge of Graph and			
3		structures and algorithms in			
		Course Outcomes (CO) wi		konomy Level	
		the students will be able to,			
CO1		problems using advanced d	ata structures		Apply
CO2	Compare differe	nt data structures		The second second	Analyse
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JUS	Evaluate time co	mplexity of different algorit	thms		Evaluate
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Assessment

Assessm	ent Plan based	on Bloom's Taxon	omy Level	
Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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			COMPLETE AND AND AND ADDRESS OF THE PARTY OF	ourse Objectives		
1			us component of so		The state of the s	
2	To in	npart soft com	puting concepts to	solve engineering a	nd optimization proble	ms.
3	To el		n intelligence meth			
				O) with Bloom's T	Taxonomy Level	
all an instrumental principal annual of the state of			e students will be a			
CO1			oft computing conc			Apply
CO2			ng of swarm intelli			Analyze
CO ₃	Justi	fy the soft con	puting technique for	or given problem		Evaluate
	- Value 1 Nation					
Modu			Modu	ile Contents	3 A	Hours
I	H N	etworks, App	lication scope of	, components of So ANN, Fuzzy Logion, Hard vs. Soft Co	ft Computing- Neural c, Genetic algorithm, mputing.	5
II	A F A Se L	rtificial neura undamental C NN, importan eparability, A	al network (ANN) Concept, Evolution t terminologies of ND,OR, EXOR p	of Neural netwo ANN, Mc-Culloch problem solving b	rk, Basic models of Pitts Neuron, Linear y ANN, Supervised ANN to real world	7
Ш	In tra	enetic algoritated algoritated algoritated algoritated algoritated algorithm, the	sic operators and loss-over, reproductions algorithm, see schema theore	ction and mutation simple genetic algor		7
IV	In In	n troduction t o troduction, Cl	classical set and the assical set (crisp set set) set) criship function, De	fuzzy sets et) Fuzzy sets and th	neir properties, Fuzzy cation to Fuzzy logic	6
V	A D O B (A	istributed cooptimization (Facteria Foragi ABC), Biogeo Igorithm (GSA	ptimization (ACO ordination and green green green green green (ACO), Differential ng Optimization (I graphy-Based Opt	roup communicati Evolution (DE), H BFO), Artificial B imization (BBO), sion Method (GEM	multi-agent system, on, Particle Swarm farmony search (HS), see Colony algorithm Gravitational Search I) Teaching Learning	8

V	Applications of soft computing Hybrid System, Applications in image processing, optimization of TSP using GA/ANN, GA based Internet search technique, soft computing based hybrid fuzzy controller, Application of soft computing in multiple disciplines. Top research article in soft computing from high reputed journals.	6
	Text Books	
1	Jyh-Shing Roger Jang, Chuen-Tsai Sun, and EijiMizutani "Neuro Fuzzy and Computational Approach to Learning and Machine Intelligence", Prentice Hall,	
2	Goldberg, David E, "Genetic Algorithms in Search, Optimization and Manadalison Wesley, New Delhi, 1989.	
3	Sivanandam S N and Deepa S N, "Principles of Soft computing", Wiley India Ec	lition., 2008.
	References	
1	Timothy J. Ross, "Fuzzy Logic with Engineering Application", Tata McGraw 2004.	Hill, New Delhi,
2	Robert J Schalkff, "Artificial Neural Networks", McGraw Hill, New Delhi, 1997	
3	Sivanandam S N and Deepa S N, "Introduction to Genetic algorithms", Heidelberg, 2008.	Springer Verlag,
V (44)(4)	Useful Links	
1	https://onlinecourses.nptel.ac.in/noc20_cs17/preview	
2	http://www.soft-computing.de/linkC.html	

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CO2		2		2											
CO3					3						Mariana romani saratana	1			

Assessment

Bloom's Taxonomy Level	T1	T2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create			5	5
Total	20	20	60	100

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Lecture		3 Hrs/week	T1	T2	ESE	Total
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CO3		ment deep lea ater vision.	rning techniques	tor natural lang	guage processing and	Apply
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Modu	le		Module	Contents		Hours
I	M L P N	IcCulloch Pitts earning Algor ower of MLP eural Networ	ithm, Multilayer l s, Sigmoid Neuro	Iding Logic, Per Perceptrons (Mons, Gradient Dons, Power of	rceptrons, Perceptron LPs), Representation Descent, Feedforward Feedforward Neural	7
II	G G A	Optimizations i tradient Descered Descered Descered Descered Description of the Descrip	n Gradient Desce nt (GD), Momentu GD, AdaGrad, R	ent: ım Based GD, 1	Nesterov Accelerated n, Bais correction in	6
Ш	R st In w	opping, Data- ijecting noise ise Pre-traini	Bias Variance T-set augmentation	n, Parameter e methods, Dro vation functio	regularization, Early sharing and tying, opout. Greedy Layer ons, Better weight	7
IV	E ar	eep Learning igen values and its interpretectorial Repres	for word encodin d eigen vectors, E etations, Singular	g-Natural Langusis, Principal Value Decords: One hot rep	guage Processing: Component Analysis mposition, Learning resentation of words,	7
V	C C G	onvolutional I onvolutional N oogLeNet, Re uided Backp	Neural Networks leural Networks,	for Computer \ LeNet, AlexNe Convolutiona	t, ZF-Net, VGGNet, l Neural Networks,	6
VI	R R	ecurrent Neur ecurrent Neura	al Networks: al Network, Back		hrough time(BPTT), TT, GRU, LSTM.	7

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1	Aurelien Concept.													
2	Eugene (2019)	Charnia	ık, "In	itrodu	ction 1	o Dee	p Lea	rning	", The	MIT I	Press (Cambrid	ge, 1st I	Edition,
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Assessment

Bloom's Taxonomy Level	T1	Т2	ESE	Total
Remember	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Understand	5	5	10	20
Apply	10	5	15	30
Analyze	5	5	15	25
Evaluate		5	15	20
Create	AND THE RESIDENCE AND ADMINISTRATION OF THE PROPERTY OF THE PR	200 A. M. S. A. ALAMAN AND M. P. A. AMBONIN DO B. ALBONIN AND M.	5	5
Total	20	20	60	100