

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 1/5	
Branch	Computer Science & Engineering			Semester		VI	
Course Code			Course Name	Network and Cyber Security			
Course Outcome- 1		Identify Information system security issues and attacks.			Teach Hrs	Marks	
Learning Outcome 1		Explain fundamental concepts of information system			8	10	
Contents		Introduction to information system, PAIN: privacy, authentication, integrity, Non-repudiation, issues in information security, goals of information system, architecture of information system, privacy policy of information system.					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Learning Outcome 2		Illustrate the concept and issues of hacking			8	10	
Contents		Introduction to hacking, types of hacking: phishing, cookie theft, Dos, DNS Spoofing, types of hackers: black ,grey, white hackers, ethical hacking, penetration testing, issues in ethical hacking					
Method of Assessment		Internal pen paper test					
Learning Outcome 3		Explain the DoS (Denial of Service Attack)			8	10	
Contents		Denial of service attacks, Flooding attack, distributed denial of service attacks, application based bandwidth attack, defense against DoS, responding to DoS					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Course outcome 2		Describe cryptography, encryption and decryption techniques			Teach Hrs	Marks	
Learning Outcome 4		Determine the common type of cryptographic ciphers			10	10	

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 2/5		
Branch	Computer Science & Engineering				Semester		VI	
Course Code			Course Name	Network and Cyber Security				
Contents		Basic elementary cryptography, Steganography, characteristics of modern cryptography, cryptography techniques : encryption decryption, hash function, MaC, introduction to ciphers, types of ciphers : substitution cipher ,transposition ciphers , block ciphers (AES and DES) techniques						
Method of Assessment		External: End semester theory examination (Pen paper test).						
Learning Outcome 5		Compare symmetric and asymmetric encryption systems			9	10		
Contents		Components of cryptosystem,Types of cryptosystem: symmetric and Asymmetric key encryption, challenges of symmetric and asymmetric cryptosystem,Key management in cryptography: public and private key cryptosystem, challenges of public key system.Attacks of cryptosystem: passive attack ,active attack						
Method of Assessment		Internal: Pen paper test						
Learning Outcome 6		Apply authentication techniques			7	10		
Contents		Introduction to authentication, need of authentication Authentication techniques:- message authentication, digital signature Encryption Algorithm: RSA Algorithm.						
Method of Assessment		External: Laboratory observation and viva voce.						
Course outcome 3		Determine data protection Techniques from intrusion and other threats						
Learning Outcome 7		Examine security policies of Operating System			6	10		
Contents		Introduction to Intrusion detection system , Intrusion prevention system, Security policies of operating system.						
Method of Assessment		External: Laboratory observation and viva voce.						

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 3/5	
Branch	Computer Science & Engineering			Semester		VI	
Course Code			Course Name	Network and Cyber Security			
Learning Outcome 8		Distinguish between different types of security threats			8	10	
Contents		Introduction of malware, types of malware: Viruses, Trojan horse, malicious codes , logic bombs, ransom wares, zombies Security threats to system : hacking ,cracking, sneaking					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Learning Outcome 9		Explain firewall securities of windows			10	10	
Contents		Introduction to firewalls, Types of Firewalls, Need of firewalls, Function of firewalls, enabling and disabling firewalls, User Management in firewall , VPN Security Basic functions of Antivirus, advantages and disadvantages of antivirus, Differentiate between Firewalls and Antivirus, some examples of ant viruses.					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Course outcome 4		Analyze the Regulatory framework for ensuring a Secure Cyberspace					
Learning Outcome 10		Classify particulars of cyber Security			7	10	
Contents		Introduction to cyber space, cyber-attacks and its types, cyber-crime, cyber terrorism, the state and Private Sector in Cyberspace. Difference between cyber security and information security					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Learning Outcome 11		List steps to ensure security of web browser			8	10	
Contents		E-mail security services, concept of web services, characteristics of web services, architecture of web services, components of web services, implementation of web browser security, web security standards.					
Method of Assessment		Internal : Laboratory observation / Lab File					

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 4/5		
Branch	Computer Science & Engineering				Semester		VI	
Course Code			Course Name	Network and Cyber Security				
Learning Outcome 12		Elaborate features of any mobile security app				7	10	
Contents		Wireless security basics: concepts, access points, network, standards, wi-fi authentication modes, Wireless threats and its types, Security challenges in mobile device and cloud security						
Method of Assessment		Internal : Laboratory observation						
Learning Outcome 13		Demonstrate security vulnerabilities of e-commerce				8	10	
Contents		Essentials of e-commerce security, steps to ensure security, electronic payment system, types of electronic payment system, security in electronic payment system.						
Method of Assessment		External: Laboratory observation and viva voce.						
Course Outcome - 5		Summarize security standards and cyber laws				Teach Hrs	Marks	
Learning Outcome 14		Discuss the Cyber security standards and its basic laws				8	10	
Contents		Cyber Law overview and its objectives, Introduction to Cyber Security Regulations and strategies, Roles of International Law, Basics of ISO27001, Introduction to Indian IT Act 2000, IPR laws, offenses and penalties.						
Method of Assessment		External: End semester theory examination (Pen paper test).						
Learning Outcome 15		Interpret Legal information security governance and regulatory issues.				8	10	
Contents		Security audit procedures, Developing security policies, disaster recovery, legal privacy information and the law						
Method of Assessment		Internal: Short Answer Type Test/Quiz/Pen Paper Test						

REFERENCE BOOKS:

S No	Title & Publication	Author
1	Cryptography and Network Security (principles and approaches)	William Stallings Pearson Education
2	Principles of Information Security	Whitman, Thomson.
3	Network Security Essentials (Applications and Standards)	William Stallings Pearson Education
4	https://en.wikipedia.org/wiki/Information_Technology_Act,_2000	
5	https://en.wikipedia.org/wiki/IT_law	
6	E-books/E-tools/Relevant software to be used as recommended by AICTE/NITTTR/RGPV	

Suggested List of Experiments:

1. Write a program to implement concept of authentication. (Collect a password from user and test for user validity).
2. Write a program to implement the concept of RSA algorithm.
3. Install intrusion detection software and monitor behavior of other software.
4. Install and configure windows firewall
5. Install and configure security protocols on windows.
6. Configure browser security with different extensions.
7. Install and configure SMTP sever.
8. Install and configure antivirus software for security.
9. Configure wireless network and its security protocol.
10. Study and implementation of e-commerce security protocols and software.
11. Setup secure network in laboratory.

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 1/5	
Branch	Computer Science and Engineering			Semester	VI		
Course Code		Course Name	E-Governance and Digital Marketing				
Course Outcome - 1		Utilize available resources to present entrepreneurship project report			Teach Hrs	Marks	
Learning Outcome 1		Explain basics for entrepreneurship development (Cognitive domain)			9	10	
Contents		<ul style="list-style-type: none">• Entrepreneur: Concept, Characteristics, Functions of Entrepreneur / Start up, Obstacle in entrepreneurship• Form of Business Organization: Sole proprietorship, Partnership, Cooperation• Scheme of assistance by available entrepreneurial support agencies, Commercial banks and financial institutions for Small Scale Industries(SSi)/Start-up at National, State and Other level (NIESBUD, NSIC, SIDO, EGB, MSME, NABARD, AIC, MPCON, SIDBI, DIC, TBI)					
Method of Assessment		Internal: Mid semester theory examination (Pen paper test).					
Learning Outcome 2		Illustrate SSI Project Planning, Selection, Formulation and Appraisal (Cognitive domain)			9	10	
Contents		<ul style="list-style-type: none">• SSI Project Planning: Definition, Types of planning, Importance of planning, Steps in planning• Selection: Search of Idea/Opportunity, Selection/Short listing of opportunity & Viability assessment• Formulation: Stages of formulation• Project Report: Scope of project report, content & format• Appraisal: Need of Project Appraisal & Steps of Project Appraisal					
Method of Assessment		External: End semester theory examination (Pen paper test).					
Learning Outcome 3		Construct to present project report for a given/available SSI/start-up (Psychomotor domain)			6	10	
Contents		Steps and Exercises on preparation and presentation of project report: <ul style="list-style-type: none">• Preliminary project report including technical, economic and market feasibility,• Detect common errors in project report					

	preparations/presentation.			
Method of Assessment	Internal Practical Observation			
RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 2/5
Branch	Information Technology		Semester	V
Course Code	501	Course Name	E-Governance and Digital Marketing	
Course Outcome - 2	Utilize activities related to E Commerce & E Governance			Teach Hrs
Learning Outcome 4	Explain business model and payment method of E-Commerce (Cognitive domain)			10
Contents	<ul style="list-style-type: none"> Electronics Commerce: Introduction, advantages and disadvantages. E-Commerce Business model: B2B, B2C, C2C, Four C's rule E-Commerce Payment: Payment Gateway, Modes of Electronic Payment, Threats & protections for e-commerce payment system E-Marketplace 			
Method of Assessment	External: End semester theory examination (Pen paper test).			
Learning Outcome 5	Explain Electronic Governance and Mobile Governance basics (Cognitive domain)		6	10
Contents	<ul style="list-style-type: none"> E-Governance: Introduction, Models, lifecycle, PPP (Public Private Partnership), Visit e-governance sites (Eg. MP E Seva, MP Online) as part of Tutorials E-Security and Cyber laws M-Governance: Concept 			
Method of Assessment	Internal: Mid semester theory examination (Pen paper test).			
Learning Outcome 6	Make use of E Commerce payment method and E governance portal (Psychomotor domain)		6	10
Contents	<ul style="list-style-type: none"> Use Payment gateway method (Credit card, Debit card, Net banking, UPI and E-wallet) on website/mobile app Student will make sure to trained/help at least 5 student of institute performing E-governance portal(e-scholarship, e- 			

	granthalaya, MP Online, mp edistrict) activities and submit/present report for evaluation			
Method of Assessment	External: Laboratory observation and viva voce.			
RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 3/5
Branch	Information Technology		Semester	V
Course Code	501	Course Name	E-Governance and Digital Marketing	
Course Outcome - 3	Apply techniques on available tools for digital marketing		Teach Hrs	Marks
Learning Outcome 7	Explain fundamental of Digital Marketing (Cognitive domain)		9	10
Contents	<ul style="list-style-type: none"> • Digital marketing : Concept, Process, Application, Advantages, Limitation, Examples • Digital marketing Verses Traditional marketing • Digital marketer: Definition, Role • Visibility: Concept, Types and Example • Visitors Engagement: Concept , Landing page and Conversion Page(Thank you page) • Converting Traffic into Leads • Inbound Marketing and Outbound Marketing 			
Method of Assessment	External: End semester theory examination (Pen paper test).			
Learning Outcome 8	Explain types of Digital Marketing (Cognitive domain)		9	10
Contents	<ul style="list-style-type: none"> • Search Engine Marketing <ul style="list-style-type: none"> ◦ Search Engine Optimization(SEO) ◦ PPC(Pay Per Click) • Social Media Marketing • Display Advertising: Contextual Targeting Vs Behavioural Targeting • Content Marketing & Blogging • Email Marketing- Email Ethics, Webmail, Bulk Email • Mobile marketing – Eg. Bulk SMS • Affiliate marketing • Video Marketing 			
Method of Assessment	External: End Semester theory examination (Pen paper test).			

Learning Outcome 9		Make use of available tools and techniques for digital marketing (Psychomotor domain)		6	10
Contents		<ul style="list-style-type: none">• Develop a Thank you page , Landing Page• Develop a campaign for Search Engine Marketing by using of available tool (like Google AdWords)• Construct blog by using available tool (like blogger)• Construct an ethical e-mail to attract customer about your enterprise brand product			
Method of Assessment		External: Laboratory observation and viva voce.			
RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 4/5
Branch	Information Technology			Semester	V
Course Code	501	Course Name	E-Governance and Digital Marketing		
Course Outcome - 4		Apply SEO(Search Engine Optimization) tools and techniques to improve search on web		Teach Hrs	Marks
Learning Outcome 10		Explain SEO basics (Cognitive domain)		6	10
Contents		<ul style="list-style-type: none">• Search Engine: Concept, Importance, Working• Search Engine Algorithms: concept, characteristics• SEO: Need, Importance• SEO Terminologies : SERP, On Page & Off Page, Related Search, Search Trends• SEO Working : Crawling, Indexing and Ranking• Backlinks: Concept, Importance, Dofollow & Nofollow• How to Get Backlinks?			
Method of Assessment		External: End semester theory examination (Pen paper test).			
Learning Outcome 11		Utilize SEO guidelines for website search improvement (Cognitive domain)		6	10
Contents		<ul style="list-style-type: none">• Understanding domain names & domain extensions• Website Structure• Iframes / frames effects on SEO• URL Rewriting Techniques (301, 302)• Measuring and Tracking - UTM(Urchin tracking module)• Keyword: Keyword Research, Types, Research Methodology,			

		Competition Analysis <ul style="list-style-type: none">• Off Page SEO : Page Rank, RSS(Rich Site Summary) Feeds• Case Study on available SEO Tool (Example Google Search Console)				
Method of Assessment		External: End semester theory examination (Pen paper test).				
Learning Outcome 12		Make use of available tools and technique of SEO in Web project (Psychomotor domain)		6	10	
Contents		<ul style="list-style-type: none">• Develop OnPage SEO with Title Tag, Meta Tags, Canonical Tag, Header, footer, Anchor Links, image tag, Navigation Menu , Filename, 404 Implementation• Develop an HTML and XML sitemap• Develop Robots file• Develop .htaccess file• Identify different “keywords” for Web Project optimization				
Method of Assessment		Internal Practical Observation				
RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 5/5	
Branch	Information Technology			Semester	V	
Course Code	501	Course Name	E-Governance and Digital Marketing			
Course Outcome - 5		Perform Social Media Marketing Activities			Teach Hrs	Mark s
Learning Outcome 13		Explain social media marketing and terminologies (Cognitive domain)			6	10
Contents		<ul style="list-style-type: none">• Social Media: Concept, Paradigms & Psychology• Social Media Marketing: Concept, Laws, Advantages, Disadvantage, Strategy, Community building Platform (Eg. Facebook, LinkedIn, Instagram, Twitter)• Difference between Social Media Optimization (SMO) and Social Media Marketing (SMM)• Social Media Terminology: hashtag, trends, pin, tweet, emoji, traffic				
Method of Assessment		External: End semester theory examination (Pen paper test).				

Learning Outcome 14	Demonstrate digital analytical tool to monitor measure and optimize digital marketing activities on web. (Cognitive domain)	6	10
Contents	<ul style="list-style-type: none"> • Web Analytics: Concept, Characteristics • Traditional V/S Contemporary Web Analytics • Case study on available Digital analytical tool (Eg. Google Analytics) 		
Method of Assessment	Internal Term Work		
Learning Outcome 15	Develop own sample business page and post advertisement on social media (Psychomotor domain)	6	10
Contents	<ul style="list-style-type: none"> • Sample business page on available social media platform (Eg. Facebook) • Sample Ad Campaign on available social media platform (Eg. Facebook, LinkedIn, Instagram) with events & offer of the day likewise concepts 		
Method of Assessment	External: Laboratory observation and viva voce.		

REFERENCE BOOKS:

S No	Title & Publication	Author
1	Entrepreneurship Development - published by S Chand and Sons, New Delhi	Dr N P Srinivasan, Dr C B Gupta
2	Entrepreneurship Development	Sangeeta Sharma
3	Projects planning, analysis, selection, financing, implementation and review – published by Tata McGraw Hill	Prasanna Chandra
4	Information Technology And E-Governance – published by New Age International (P) Ltd.	N Gopalsamy
5	Fundamentals of Digital Marketing - published by Pearson.	Puneet Bhatia
6	Digital Marketing for Dummies published by Wiley	Ryan Deiss and Russ Hennesberry
7	Digital Marketing - published by Oxford Publication	Vandana Ahuja
8	Digital Marketing: From Fundamentals to Future	Swaminathan T. N and Karthik Kumar
9	https://www.javatpoint.com/digital-marketing	
10	https://www.youtube.com/user/googleanalytics	

11	E-books/E-tools/Relevant software to be used as recommended by AICTE/NITTTR/RGPV	
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RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	1	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize available resources to present entrepreneurship project report										
LO Description		Explain basics for entrepreneurship development										
SCHEME OF STUDY												
S. No.	Learning Content				Teaching – Learning Method	Description of T-L Process		Teac h Hrs.	Pract. /Tut Hrs.	LRs Required		Remarks
1	<ul style="list-style-type: none">Entrepreneur: Concept, Characteristics, Functions of Entrepreneur / Start up, Obstacle in entrepreneurshipForm of Business Organization: Sole proprietorship, Partnership, CooperationScheme of assistance by available entrepreneurial support agencies, Commercial banks and financial institutions for Small Scale Industries(SSi)/Start-up at National, State and Other level (NIESBUD,NSIC, SIDO, EGB, MSME, NABARD, AIC, MPCON, SIDBI, DIC, TBI)				Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		9	NIL	Handouts, chalk board, PPT, text book, charts, video film.		
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment			Maximum Marks		Resources Required			External / Internal	
1	Paper pen test		Student will be asked basics of entrepreneur and go through government agencies required to set up various small scale industry / startup			10		Test paper + Rating scale			Internal	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Internal: Progressive examination (Pen paper test).												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	2	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize available resources to present entrepreneurship project report										
LO Description		Illustrate SSI Project Planning, Selection, Formulation and Appraisal										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks		
1	<ul style="list-style-type: none">SSI Project Planning: Definition, Types of planning, Importance of planning, Steps in planningSelection: Search of Idea/Opportunity, Selection/Short listing of opportunity & Viability assessmentFormulation: Stages of formulationProject Report: Scope of project report, content & formatAppraisal: Need of Project Appraisal & Steps of Project Appraisal		Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	9	NIL	Handouts, chalk board, PPT, text book, charts, video film.					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks	Resources Required				External / Internal		
1	End semester theory examination		Student will be asked question on SSI project basics		10	Question paper + rating scale				External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	3	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize available resources to present entrepreneurship project report										
LO Description		Construct to present project report for a given/available SSI/start-up										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks					
1	Steps and Exercises on preparation and presentation of project report: <ul style="list-style-type: none">Preliminary project report including technical, economic and market feasibility,Detect common errors in project report preparations /presentation.	Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will demonstrate major components inside the lab to students, students will practice, provide quiz, assignment etc., teacher will conduct remedial and tutorials.	NIL	6	Handouts, chalk board, PPT, text book, charts, video film.						
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required				External / Internal				
1	Practical Observation Practical Assignment/Quiz	Student will be asked to prepare and present project report after visit of SSI/Startup in nearby area	10	Observation schedule/check-list /rating scales /rubrics/Quiz				Internal				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Teachers instruct/encourage student to visit local small scale enterprise/incubation centre to come up with an idea for developing startup with project report												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				2	1	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize activities related to E Commerce & E Governance										
LO Description		Explain business model and payment method of E-Commerce										
SCHEME OF STUDY												
S. No.	Learning Content			Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks	
1	<ul style="list-style-type: none">Electronics Commerce: Introduction, advantages and disadvantages.E-Commerce Business model: B2B, B2C, C2C, Four C’s ruleE-Commerce Payment: Payment Gateway, Modes of Electronic Payment, Threats & protections for e-commerce payment systemE-Marketplace			Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	9	NIL	Handouts, chalk board, PPT, text book, charts, video film.				
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks	Resources Required				External / Internal		
1	End semester theory examination		Student will be asked question on E Commerce		10	Question paper + rating scale				External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				2	2	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize activities related to E Commerce & E Governance										
LO Description		Explain Electronic Governance and Mobile Governance basics										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks		
1	<ul style="list-style-type: none">E-Governance: Introduction, Models, lifecycle, PPP (Public Private Partnership), Visit e-governance sites (Eg. MPSEva, MPOnline) as part of TutorialsE-Security and Cyber lawsM-Governance: Concept		Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6	NIL	Handouts, chalk board, PPT, text book, charts, video film.					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks		Resources Required			External / Internal		
1	Paper pen test		Student will be asked basics of e-gov and m-gov		10		Test paper + Rating scale			Internal		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Internal: Progressive examination (Pen paper test).												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				2	3	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Utilize activities related to E Commerce & E Governance										
LO Description		Make use of E Commerce payment method and E governance portal										
SCHEME OF STUDY												
S. No.	Learning Content			Teaching –Learning Method		Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks	
1	<ul style="list-style-type: none">Use Payment gateway method (Credit card, Debit card, Net banking, UPI and E-wallet) on website/mobile appStudent will make sure to trained/help at least 5 student of institute performing E-governance portal(e-scholarship, e-granthalaya, MPOnline, mpedistrict) activities and submit/present report for evaluation			Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial		Teacher will demonstrate major components inside the lab to students, students will practice, provide quiz, assignment etc., teacher will conduct remedial and tutorials.		NIL	6	Handouts, chalk board, PPT, text book, charts, video film.		
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment			Maximum Marks		Resources Required			External / Internal	
1	Laboratory test by observation		Student will be asked to submit report of self using and helping other student of institute whom they helped in using E governance portal			10		Observation schedule/check-list /rating scales /rubrics			External	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Teacher will ensure every student guide/help at least 5 students of other branch of institute in using E governance portal(MPOnline, Scholarship or other)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				3	1	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply techniques on available tools for digital marketing										
LO Description		Explain fundamental of Digital Marketing										
SCHEME OF STUDY												
S. No.	Learning Content			Teaching – Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required		Remarks	
1	<ul style="list-style-type: none">Digital marketing : Concept, Process, Application, Advantages, Limitation, ExamplesDigital marketing Verses Traditional marketingDigital marketer: Definition, RoleVisibility: Concept, Types and ExampleVisitors Engagement: Concept , Landing page and Conversion Page(Thank you page)Converting Traffic into LeadsInbound Marketing and Outbound Marketing			Interactive classroom teaching, demonstration , quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		9	NIL	Handouts, chalk board, PPT, text book, charts, video film.			
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks		Resources Required			External / Internal		
1	End semester theory examination		Student will be asked question on digital marketing fundamental		10		Question paper + rating scale			External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				3	2	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply techniques on available tools for digital marketing										
LO Description		Explain types of Digital Marketing										
SCHEME OF STUDY												
S. No.	Learning Content			Teaching – Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required		Remarks	
1	<ul style="list-style-type: none">Search Engine Marketing<ul style="list-style-type: none">Search Engine Optimization(SEO)PPC(Pay Per Click)Social Media MarketingDisplay Advertising: Contextual Targeting Vs Behavioral TargetingContent Marketing & BloggingEmail Marketing- Email Ethics, Webmail, Bulk EmailMobile marketing – Eg. Bulk SMSAffiliate marketingVideo Marketing			Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		9	NIL	Handouts, chalk board, PPT, text book, charts, video film.			
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment			Maximum Marks		Resources Required			External / Internal	
1	End semester theory examination		Student will be asked question on types of digital marketing			10		Question paper + rating scale			External	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				3	3	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply techniques on available tools for digital marketing										
LO Description		Make use of available tools and techniques for digital marketing										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required		Remarks		
1	<ul style="list-style-type: none">Develop a Thank you page , Landing PageDevelop a campaign for Search Engine Marketing by using of available tool (like Google AdWords)Construct blog by using available tool (like blogger)Construct an ethical e-mail to attract customer about your enterprise brand product		Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will demonstrate major components inside the lab to students, students will practice, provide quiz, assignment etc., teacher will conduct remedial and tutorials.		NIL	6	Handouts, chalk board, PPT, text book, charts, video film.				
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks	Resources Required				External / Internal		
1	Laboratory test by observation		Student will be asked to develop web pages, email or campaign by using available tool.		10	Observation schedule/check-list /rating scales /rubrics				External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	1	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply SEO(Search Engine Optimization) tools and techniques to improve search on web										
LO Description		Explain SEO basics										
SCHEME OF STUDY												
S. No.	Learning Content				Teaching – Learning Method		Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	<ul style="list-style-type: none"> Search Engine: Concept, Importance, Working Search Engine Algorithms: concept, characteristics SEO: Need, Importance SEO Terminologies : SERP, On Page & Off Page, Related Search, Search Trends SEO Working : Crawling, Indexing and Ranking Backlinks: Concept, Importance, Dofollow & Nofollow How to Get Backlinks? 				Interactive classroom teaching, demonstration, quiz, assignments, tutorial		Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		6	NIL	Handouts, chalk board, PPT, text book, charts, video film.	
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment			Maximum Marks		Resources Required			External / Internal	
1	End semester theory examination		Student will be asked question on SEO			10		Question paper + rating scale			External	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	2	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply SEO(Search Engine Optimization) tools and techniques to improve search on web										
LO Description		Utilize SEO guidelines for website search improvement										
SCHEME OF STUDY												
S. No.	Learning Content					Teaching – Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	<ul style="list-style-type: none">Understanding domain names & domain extensionsWebsite StructureIframes / frames effects on SEOURL Rewriting Techniques (301, 302)Measuring and Tracking - UTM(Urchin tracking module)Keyword: Keyword Research, Types, Research Methodology, Competition AnalysisOff Page SEO : Page Rank, RSS(Rich Site Summary) FeedsCase Study on available SEO Tool (Example Google Search Console)					Interactive classroom teaching, demonstration , quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		6	NIL	Handouts, chalk board, PPT, text book, charts, video film.	
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment			Maximum Marks		Resources Required			External / Internal	
1	End semester theory examination		Student will be asked question on SEO guideline and technique			10		Question paper + rating scale			External	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	3	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Apply SEO(Search Engine Optimization) tools and techniques to improve search on web										
LO Description		Make use of available tools and technique of SEO in Web project										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.		LRs Required		Remarks	
1	<ul style="list-style-type: none">Develop OnPage SEO with Title Tag, Meta Tags, Canonical Tag, Header, footer, Anchor Links, image tag, Navigation Menu , Filename, 404 ImplementationDevelop an HTML and XML sitemapDevelop Robots fileDevelop .htaccess fileIdentify different “keywords” for Web Project optimization		Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will demonstrate major components inside the lab to students, students will practice, provide quiz, assignment etc., teacher will conduct remedial and tutorials.		NIL	6		Handouts, chalk board, PPT, text book, charts, video film.			
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks	Resources Required				External / Internal		
1	Internal Practical Observation Practical Assignment/Quiz		Student develop the web page/project following SEO guidelines		10	Observation schedule/check-list /rating scales /rubrics				Internal		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	1	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Perform Social Media Marketing Activities										
LO Description		Explain social media marketing and terminologies										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks		
1	<ul style="list-style-type: none">Social Media: Concept, Paradigms & PsychologySocial Media Marketing: Concept, Laws, Advantages, Disadvantage, Strategy, Community building Platform (Eg. Facebook, Linkedin, Instagram, Twitter)Difference between Social Media Optimization (SMO) and Social Media Marketing (SMM)Social Media Terminology: hashtag, trends, pin, tweet, emoji, traffic		Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6	NIL	Handouts, chalk board, PPT, text book, charts, video film.					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks	Resources Required				External / Internal		
1	End semester theory examination		Student will be asked question on social media marketing		10	Question paper + rating scale				External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	2	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Perform Social Media Marketing activities										
LO Description		Demonstrate digital analytical tool to monitor measure and optimize digital marketing activities on web										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required					Remarks	
1	<ul style="list-style-type: none">Web Analytics: Concept, CharacteristicsTraditional V/S Contemporary Web AnalyticsCase study on available Digital analytical tool (Eg. Google Analytics)	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6	NIL	Handouts, chalk board, PPT, text book, charts, video film.						
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required					External / Internal		
1	Term Work Assignment/Quiz	Student will be asked about Web/Digital analytical tools		10	Test paper + Rating scale					Internal		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Internal: Progressive examination (Pen paper test).												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	3	
COURSE NAME		E-GOVERNANCE AND DIGITAL MARKETING										
CO Description		Perform Social Media Marketing activities										
LO Description		Develop own sample business page and post advertisement on social media										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks			
1	<ul style="list-style-type: none">Sample business page on available social media platform (Eg. Facebook)Sample Ad Campaign on available social media platform(Eg. Facebook, Linkedin, Instagram) with events & offer of the day likewise concepts	Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will demonstrate major components inside the lab to students, students will practice, provide quiz, assignment etc., teacher will conduct remedial and tutorials.	NIL	6	Handouts, chalk board, PPT, text book, charts, video film.						
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment		Maximum Marks	Resources Required				External / Internal			
1	Laboratory test by observation	Student will be asked to develop business pages and campaign on social media platform		10	Observation schedule/check-list /rating scales /rubrics				External			
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
NIL												

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR Computer Graphics and Animation Technology		FORMAT- 3	Sheet No. 1/4
Branch	Computer Science and Engineering			Semester	VI
Course Code		Course Name		Computer Graphics and Animation Technology	
Course Outcome 1	Explain the concept of Computer Graphics and their algorithms.			Hrs	Marks
Learning Outcome 1	Understand Basics of Computer Graphics			06	10
Contents	Definition of Computer Graphics, Application of Computer Graphics , Graphics Hardware, Overview of Display Devices, Raster and Random Scans Systems.				
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 1				
Learning Outcome 2	Classify Line-drawing Algorithms.			09	10
Contents	Points and Lines,Line-drawing Algorithms, DDA Algorithm , Bresenham’s line Algorithm				
Method of Assessment	Internal Lab Test Practical Observation.				
Learning Outcome 3	Demonstrate 2D and 3D Transformations.			06	10
Contents	Translation, Rotation, Scaling, Shear, Reflection.				
Method of Assessment	Question Paper-Internal Progressive Test-I				
Course Outcome 2	Elaborate Clipping, Projection, Shading, Colour model and Illumination			Hrs	Marks
Learning Outcome 4	Identify Clipping Algorithm.			06	10
Contents	Point Clipping, Line Clipping -Cohen-Sutherland Clipping algorithm.,Polygon Clipping: Sutherland Hodgeman Algorithm				
Method of Assessment	Question Paper-Internal Progressive Test-II				
Learning Outcome 5	Compare Various Projection Techniques in detail.			06	10

Contents	Parallel Projection: Orthographic, Axonometric, Oblique Perspective Projection: Standard Perspective Projection, General Perspective Projection, Vanishing Points		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 2		
Learning Outcome 6	Organize Shading and Colour model in detail.	06	10
Contents	Chromaticity diagram- RGB, CMY, HSV, HLS Illumination models, shading models for polygons, Gouraud and Phong shading		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 3		
Course Outcome 3	Illustrate Fundamental Multimedia Technology and Graphics Image File Formats.	Hrs	Marks
Learning Outcome 7	Explain Fundamental Multimedia Technology.	06	10
Contents	Concepts of Multimedia: Types, Hardware and Software Requirements and Applications, Multimedia Authoring and their tool, MIDI File Formats, MIDI Hardware and Software.		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 4		
Learning Outcome 8	Discuss Over view of Types of compression.	06	10
Contents	Over view of Types of compression Technique(Lossy and Lossyless), Video Compression , MPEG and JPEG Compression Basics Hypertext and Hypermedia.		
Method of Assessment	Internal –Term Work Assignment.		
Learning Outcome 9	Distinguish Graphics Image File Formats.	06	10
Contents	Raster Format, Bitmap (BMP) Format, Graphics Interchange Format (GIF), Joint Photographic Experts Group (JP EG), Tagged Image File Format (TIFF), Portable Network Graphics (PN G) and their differences		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 5		
Course Outcome 4	Illustrate fundamental of animation and their technology.	Hrs	Marks

Learning Outcome 10	Understand the need of Animation.	06	10
Contents	Principles of Animation, characteristics of animations, Applications of Animation, limitation of animation.		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 6		
Learning Outcome 11	Classify various animation techniques.	06	10
Contents	Types of animation: Traditional Animation, 2D animation, 3D animation, motion graphics, and stop motion animation, text animation.		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 7		
Learning Outcome 12	Make use of various techniques for animation.	09	10
Contents	Animation techniques: techniques to create animation, Key framing, Stage, Timeline, Deformations, Character Animation, Physics-Based Animation, Procedural Techniques, Groups of Objects.		
Method of Assessment	Internal Lab Test Practical Observation.		
Course Outcome 5	Develop 2D animation applications.	Hrs	Marks
Learning Outcome 13	Select software for computer animation.	09	10
Contents	<ul style="list-style-type: none"> 2D animation software, 2D Animation- introduction with Visual Studio Flash, Animaker, pencil2d, CrazyTalk Animator, flipbook. 3D Animation- Introduction to blender- work environment. 		
Method of Assessment	External Lab Test Observation		
Learning Outcome 14	Apply 2D computer animation techniques	09	10
Contents	Flash Basics: Flash Work Flow, Animation Using Flash. The Flash Work Environment: The Stage and the Time Line, Symbols and Instances, Symbols and Interactive Movies, Using the Tool Box, Using Working the Frames using time line.		
Method of Assessment	External Lab Test Observation		

Learning Outcome 15	Create 2D computer animation application.	09	10
Contents	Creating Animations: Creating Key Frames, Layers in Animations, Frame Rates, Frame Rates, and Steps for creating animations. Frame by Frame Animations.		
Method of Assessment	External Lab Test Observation		

PRACTICAL FOR ANIMATION:

1. Write a program for 2D line drawing using DDA Algorithm.
2. Write a program for 2D line drawing using Brsenham's Algorithm.
3. Create animations using Adobe FLASH. Flash Drawing and Painting Tools. Flash Drawing Modes. Pencil Tools.
4. Importing artwork into Flash.
5. Perform smiling face/Angry face animation using flash.
6. Draw the moving Car/Bike/Cycle on the screen.

BOOKS RECOMMENDED.

- Computer Graphics, Multimedia and Animations by Malay K. Pakhira, PHI Learning.
 - Computer Graphics by Donald Hearn and M. Pauline Baker, PHI
 - Computer Graphics Principles and Practices second edition by James D. Foley, Andeies van Dam, Stevan K. Feiner and John F. Hughes, 2000, Addition Wesley.
 - <https://www.technicalcube.in/animation-book-pdf-download>
 - Introduction to Computer Graphics By N. Krishnamurthy T.M.H
 - Graphics, GUI, Games & Multimedia Projects in C by Pilania & Mahendra, Standard Pub
 - Newman W.M. and Sproull R.F., " Principles of Interactive Computer Graphics ", Second Edition, *Tata McGraw Hill Publishing Company Limited, New Delhi,*
 - Multimedia on the PC, Sinclair,BPB
 - Multimedia in Practice by Jeff coate Judith, 1, PHI.
 - Multimedia Systems by Koegel, AWL
 - Multimedia Making it Work by Vaughar, etl
 - Principles of Multimedia by Ranjan Parekh, *Tata McGraw Hill Education Private Limited, New Delhi.*
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RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	1	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Explain the concept of Computer Graphics and their algorithms.										
LO Description		Understand Basics of Computer Graphics.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Definition of Computer Graphics, Application of Computer Graphics , Graphics Hardware, Overview of Display Devices, Raster and Random Scans Systems. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E-Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM THEORY EXAM	Question Paper .	10	Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	2	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Explain the concept of Computer Graphics and their algorithms.										
LO Description		Classify Line-drawing Algorithms.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Points and Lines, Line-drawing Algorithms, DDA Algorithm, Bresenham's line Algorithm. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	9	0	Handouts / Books / E-Contents,	Teacher may use working animation for Searching techniques.					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	LAB WORK	Student will be asked to write program for line drawing algorithm.	10	Lab Test			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				1	3	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Explain the concept of Computer Graphics and their algorithms.										
LO Description		Demonstrate 2D and 3D Transformations.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Translation, Rotation, Scaling, Shear, Reflection. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	PROGRESSIVE TEST-I	Student will be asked to perform Translation, Rotation, Scaling, Shear, Reflection.	10	Test Paper/Quiz			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				2	4	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Elaborate Clipping, Projection, Shading, Colour model and Illumination.										
LO Description		Identify Clipping Algorithm.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Point Clipping, Line Clipping - Cohen-Sutherland Clipping algorithm., Polygon Clipping: Sutherland Hodgeman Algorithm. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E-Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	PROGRESSIVE TEST-II	Student will be asked to clipping on given coordinates.	10	Test Paper			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No.4
				C	0	4				2	5	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Elaborate Clipping, Projection, Shading, Colour model and Illumination.										
LO Description		Compare Various Projection Techniques in detail.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Parallel Projection: Orthographic, Axonometric, Oblique Perspective Projection: Standard Perspective Projection, General Perspective Projection ,Vanishing Points.. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E-Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM THEORY EXAM	Student will be asked to perform various projection on given coordinates.	10	Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No.4
				C	0	4				2	6	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										

CO Description	Elaborate Clipping, Projection, Shading, Colour model and Illumination.						
LO Description	Organize Shading and Color model in detail.						
SCHEME OF STUDY							
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks
1	<ul style="list-style-type: none"> Chromaticity dia gram- RGB, CMY, HSV, HLS Illumination models, shading models for polygons,GouraudandPhong shading. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E-Contents	NIL
SCHEME OF ASSESSMENT							
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required		External / Internal	
1	END SEM THEORY EXAM	Student will be asked to define NLP and various techniques used in NLP.	10	Test Paper		External	
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)							

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				3	7	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate Fundamental Multimedia Technology and Graphics Image File Formats.										
LO Description		Explain Fundamental Multimedia Technology.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Concepts of Multimedia: Types, Hardware and Software Requirements and Applications, Multimedia Authoring and their tool, MIDI File Formats, MIDI Hardware and Software. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E-Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM THEORY EXAM	Student will be asked to explain Types, Hardware and Software Requirements and Applications, Multimedia.	10	Test Paper			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				3	8	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate Fundamental Multimedia Technology and Graphics Image File Formats.										
LO Description		Discuss Over view of Types of compression.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Over view of Types of compression Technique(Lossy and Lossyless), Video Compression , MPEG and JPEG Compression Basics Hypertext and Hypermedia 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	TERM WORK	Student will be asked to explain types of compression.	10	Assignment/Quiz			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No.4
				C	0	4				3	9	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate Fundamental Multimedia Technology and Graphics Image File Formats.										
LO Description		Distinguish Graphics Image File Formats.										
SCHEME OF STUDY												
S. No.	Learning Content		Teaching – Learning Method		Description of T-L Process		Teach Hrs.	Pract./ Tut. Hrs	LRs Required		Remarks	
1	<ul style="list-style-type: none"> Raster Format, Bitmap (BMP) Format, Graphics Interchange Format (GIF), Joint Photographic Experts Group (JP EG), Tagged Image File Format (TIFF), Portable Network Graphics (PN G) and their differences. 		Traditional Lecture method + Handout		Teacher will explain the contents and provide handout to students.		6	0	Handouts / Books / E-Contents		NIL	
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment		Description of Assessment		Maximum Marks		Resources Required			External / Internal		
1	END SEM THEORY EXAM		Student will be asked to write note on Image File Formats.		10		Test Paper			External		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	10	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate fundamental of animation and their technology.										
LO Description		Understand the need of Animation.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Principles of Animation, characteristics of animations, Applications of Animation, limitation of animation. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM THEORY EXAM	Student will be asked to list application and limitation of animation.	10	Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	11	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate fundamental of animation and their technology.										
LO Description		Classify various animation techniques.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Types of animation: Traditional Animation, 2D animation, 3D animation, motion graphics, and stop motion animation, text animation.. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM THEORY EXAM	Student will be asked to list types of animation.	10	Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				4	12	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Illustrate fundamental of animation and their technology.										
LO Description		Make use of various techniques for animation.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Animation techniques: techniques to create animation, Key framing, Stage, Timeline, Deformations, Character Animation, Physics-Based Animation, Procedural Techniques, Groups of Objects. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	9	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	LAB WORK	Student will be asked to list animation techniques used to create animation.	10	Lab Assignment			Internal					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	13	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Develop 2D animation applications.										
LO Description		Select software for computer animation.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> 2D animation software, 2D Animation- introduction with Visual Studio Flash, Animaker, pencil2d, CrazyTalk Animator, flipbook. 3D Animation- Introduction to blender- work environment. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	9	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM PRACTICAL	Student will be asked uses of various animation software.	10	Lab Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	14	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Develop 2D animation applications.										
LO Description		Apply 2D computer animation techniques.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Flash Basics: Flash Work Flow, Animation Using Flash. The Flash Work Environment: The Stage and the Time Line, Symbols and Instances, Symbols and Interactive Movies, Using the Tool Box, Using Working the Frames using time line. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	9	0	Handouts / Books / E- Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM PRACTICAL	Student will be asked various method for 2D animation creation.	10	Lab Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				C	0	4				5	15	
Course Name		COMPUTER GRAPHICS AND ANIMATION TECHNOLOGY										
CO Description		Develop 2D animation applications.										
LO Description		Create 2D computer animation application.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract./ Tut. Hrs	LRs Required	Remarks					
1	<ul style="list-style-type: none"> Creating Animations: Creating Key Frames, Layers in Animations, Frame Rates, Frame Rates, and Steps for creating animations. Frame by Frame Animations. Publishing and Exporting. 	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	9	0	Handouts / Books / E-Contents	NIL					
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
1	END SEM PRACTICAL	Student will be asked basic 2D animation using flash software.	10	Lab Test Paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												