Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Empowered Autonomous)

Three Year B. Vocational Degree Program in

E-Commerce & Digital Marketing

(Faculty of Vocational)

CBCS Syllabus

TY B.VOC Semester -V

For Department of E-Commerce & Digital Marketing

Tuljaram Chaturchand College, Baramati

Choice Based Credit System Syllabus (2023 Pattern)

(As Per NEP 2020)

To be implemented from Academic Year 2025-2026

Title of the Programme: TY B.VOC (ECD)

Name of the Programme **:** Bachelor of Vocational (B.VOC) -

E-COMMERCE & DIGITAL MARKETING (ECDM)

Nature of the Programme **:** B.VOC is three years full time graduate degree programme.

Eligibility criteria **:** 12th Pass (any stream)

Preamble

AES's Tuljaram Chaturchand College has made the decision to change the syllabus of across various faculties from June, 2023 by incorporating the guidelines and provisions outlined in the National Education Policy (NEP), 2020. The NEP envisions making education more holistic and effective and to lay emphasis on the integration of general (academic) education, vocational education and experiential learning. The NEP introduces holistic and multidisciplinary education that would help to develop intellectual, scientific, social, physical, emotional, ethical and moral capacities of the students. The NEP 2020 envisages flexible curricular structures and learning based outcome approach for the development of the students. By establishing a nationally accepted and internationally comparable credit structure and courses framework, the NEP 2020 aims to promote educational excellence, facilitate seamless academic mobility, and enhance the global competitiveness of Indian students. It fosters a system where educational achievements can be recognized and valued not only within the country but also in the international arena, expanding opportunities and opening doors for students to pursue their aspirations on a global scale.

In response to the rapid advancements in science and technology and the evolving approaches in various domains of E-Commerce & Digital marketing and related subjects, the Board of Studies in E-Commerce & Digital marketing at Tuljaram Chaturchand College, Baramati - Pune, has developed the curriculum for the first semester of F.Y. B. Voc. ECD, which goes beyond traditional academic boundaries. The syllabus is aligned with the NEP 2020 guidelines to ensure that students receive an education that prepares them for the challenges and opportunities of the 21st century. This syllabus has been designed under the framework of the Choice Based Credit System (CBCS), taking into consideration the guidelines set forth by the National Education Policy (NEP) 2020, LOCF (UGC), NCRF, NHEQF, Prof. R.D. Kulkarni's Report, Government of Maharashtra's General Resolution

dated 20th April and 16th May 2023, and the Circular issued by SPPU, Pune on 31st May 2023.

The curriculum for B.VOC- ECDM is developed keeping in mind the *national priorities* and *international practices.* It also attempts to align the programme structure and course contents with student aspirations & recruiter expectations. This syllabus also attempts to align with National Goal of "Make in India",
"Start – Up and Stand – Up India" and "Digital India".

The B.VOC- ECDM programme prepares a student for a career in diverse sectors of the industry domestically and globally. The B.VOC- ECDM programme facilitates learning in theory and practice of different functional areas of management and equips the students with an integrated approach to various functions of management. However, the demand for managerial skills is not limited to the industry. Managerial talent is much sought by the Government Sector, NGOs, non-corporate sector as well.

The B.VOC- ECDM programme curriculum of the Tuljaram Chaturchand College of Arts, Science & Commerce (Autonomous) is developed for the dynamism in the industry practices, evolution in technology and the evolving expectations of key stakeholders viz. students, the industry and faculty members at large. It also has relevance due to changed technological, social, cultural and economic environment of the nation.

Programme Specific Outcomes (PSOs)

Programme Outcomes for Vocational (B.Voc.) Degree Programme in accordance with National Education Policy-2020 with effect from Academic Year 2023-24.

Bachelor of Vocational (B.Voc.) Courses are designed to provide students with specific vocational skills and knowledge that are directly applicable to the industry or field they are studying. The programme outcomes of these courses typically focus on preparing students for employment or entrepreneurship in their chosen vocational area.

PO1	**Technical Competence:** Students will acquire specialized technical skills and knowledge relevant to their chosen vocation, enabling them to perform tasks effectively and efficiently in their respective industries.
PO2	**Problem Solving Skills:** Students will develop the ability to identify, analyze, and solve problems encountered in their vocational field, using both theoretical knowledge and practical experience.
PO3	**Employability Skills:** Students will gain employability skills such as communication, teamwork, leadership, adaptability, and professionalism, which are essential for success in the workplace.
PO4	**Industry Relevance and entrepreneurial abilities:** The students will adopt knowledge and skills that are relevant to the current needs and required practices of the industry or sector, they are entering. Students focus on fostering entrepreneurial skills, equipping students with the knowledge and capabilities to start and manage their own businesses in their chosen field.
PO5	**Ethical and Social Responsibility:** Students will be aware of the ethical considerations and social responsibilities associated with their vocational field, and they will be able to apply ethical principles in their professional practices.
PO6	**Environmental Awareness:** The students should be able to ability to apply the knowledge, skills, attitudes and values required to take appropriate action for justifying the effect of environmental degradation, climate change, pollution control, effective waste management etc.
PO7	**Research and Innovations:** Depending on the programme, students may develop research and innovation skills, enabling them to contribute to advancements and improvements within their vocational field.
PO8	**Global Perspective:** In an increasingly interconnected world, programmes may emphasize the importance of understanding global trends, markets, and perspectives relevant to the students' vocation.
PO9	**Multidisciplinary studies:** Students will adopt the multidisciplinary studies in an academic approach that integrate knowledge and methodology from various discipline to provide a comprehensive understanding of related job/business opportunities.
PO10	**Community Engagement:** The students will be able to demonstrate the capabilityto participate in community-engaged services/activities for promoting the wellbeing of society.

Anekant Education Society's

Tuljaram Chaturchand College

of Arts, Science and Commerce Baramati, Dist-Pune

(Empowered Autonomous)

Board of Studies in E-Commerce & Digital Marketing

(Academic Year 2025-26 to 2027-28)

Sr. No.	Name of Member	Designation
1.	**Mr. Pawar Sunil Janardan** Head & Assistant Professor Department of E-Commerce & Digital Marketing, T. C. College, Baramati.	**Chairperson**
2.	**Ms. Takawane Snehal Rohidas** Assistant Professor, Department of E-Commerce & Digital Marketing, T. C. College, Baramati	Member
3.	**Mr. Phule Mahesh Subhash** Assistant Professor, Department of Retail Managment, T. C. College, Baramati	Member
4.	**Dr. Rajesh Kashyap**	Vice-Chancellor Nominee Subject Expert from SPPU, Pune
5.	**Dr. Mule Anup Murlidhar**	Subject Expert from Outside the Parent University
6.	**Dr. Malani Ashish Kailaschandra**	Subject Expert from Outside the Parent University
7.	**Mr. Borate Vilas Ramchandra**	Representative from industry/corporate sector/allied areas
8.	**Mr. Atole Karan Somnath**	Member of the College Alumni
9.	**Miss. Bhosale Manisha Sham**	UG Student

Course & Credit Structure for T.Y. B.Voc. E-Commerce (2023 Pattern as per NEP-2020)

Sem.	Course Type	Course Code	Course Title	Theory/ Practical	Credits
V	Major Mandatory	ECD-301-MJM	Entrepreneurship Development	Theory	02
	Major Mandatory	ECD-302-MJM	Marketing Research	Theory	02
	Major Mandatory	ECD-303-MJM	Search Engine Optimization	Theory	02
	Major Mandatory	ECD-304-MJM	Programming lab on C++	Practical	02
	Major Mandatory	ECD-305-MJM	Basics of Python	Practical	02
	Major Elective (MJE)	ECD-306-MJE(A)	Software Engineering	Theory (Any two)	04
	Major Elective (MJE)	ECD-306-MJE(B)	Business Management		
	Major Elective (MJE)	ECD-306-MJE(C)	Human Resource Management		
	Minor	ECD-341-MN	Fundamentals of Graphics Design	Theory	02
	Minor	ECD-342-MN	Graphics Design using Canva	Practical	02
	Vocational Skill Course (VSC)	ECD-321-VSC	CodeIgniter Framework	Practical	02
	Field Project(FP)	ECD-335-FP	Field Project	Practical	02
			Total Credits Semester-V		**22**
VI	Major Mandatory	ECD-351-MJM	Legal Aspects in Digital Marketing	Theory	02
	Major Mandatory	ECD-352-MJM	Services Management	Theory	02
	Major Mandatory	ECD-353-MJM	Business Analytics	Theory	02
	Major Mandatory	ECD-354-MJM	Google Services	Practical	02
	Major Mandatory	ECD-355-MJM	TK Enter Framework	Practical	02
	Major Elective(MJE)	ECD-356-MJE(A)	Advance Digital Marketing	Theory (Any two)	04
	Major Elective(MJE)	ECD-356-MJE(B)	Google Adwards & Analytics		
	Major Elective(MJE)	ECD-356-MJE(C)	Management Information System		
	Minor	ECD-361-MN	Digital Marketing	Theory	02
	Minor	ECD-362-MN	Practicals on Digital Marketing	Practical	02
	On Job Training(OJT)	ECD-385-OJT	On Job Training	Practical	04
			Total Credits Semester-VI		**22**
			Total Credits Semester-V+ VI		**44**

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Mandatory
Course Code : ECD-301-MJM
Course Title : Entrepreneurship Development
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To provide students with a comprehensive understanding of entrepreneurship and the skills needed to successfully start and manage a business.
2. To introduce students to the key concepts and principles of entrepreneurship, including opportunity recognition, innovation, and risk management.
3. To develop students' critical thinking and problem-solving skills through hands-on exercises and case studies.
4. To foster students' creativity and encourage them to think outside the box in order to identify and exploit business opportunities.
5. To enhance students' knowledge of the legal, financial, and marketing aspects of starting and running a business.
6. To equip students with the necessary skills to develop a comprehensive business plan and implement it effectively.
7. To provide students with an understanding of the challenges and opportunities associated with entrepreneurial ventures in different sectors and industries.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Students will be able to demonstrate a deep understanding of the key concepts and theories of entrepreneurship.

CO2. Students will be able to identify and evaluate business opportunities using a systematic approach.

CO3. Students will be able to develop and implement a comprehensive business plan.

CO4. Students will be able to demonstrate effective communication and teamwork skills in a business context.

CO5. Students will be able to apply strategic thinking and problem-solving skills to real-world business situations.

CO6. Students will be able to analyze and evaluate the financial viability of a business venture.

CO7. Students will be able to access and manage the risks associated with entrepreneurial venture.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Concept and Definitions: Entrepreneur & Entrepreneurship,** Entrepreneurship and Economic Development; Factor Affecting Entrepreneurial Growth: Economic, Non- Economic Factors; EDP Programmes; Entrepreneurial Training; Traits/Qualities of an Entrepreneurs: Entrepreneur; Manager Vs. Entrepreneur, Entrepreneurial Process. Steps of entrepreneurial process: Deciding–Developing–Moving–Managing Recognizing, Women Entrepreneurs.	10
2	**Small Enterprises and Enterprise Launching New Ventures Successfully:** Definition of Small Scale; Objective; Scope; Role of SME in Economic Development of India; SME; Registration; NOC from Pollution Board; Machinery and Equipment Selection. Project Report Preparation: Methods of Project Appraisal - requirements of financial institutions, projected financial statement preparation. Government strategies for SME.	10
3	**Case Studies:** Diagnostic case studies of successful/unsuccessful entrepreneurs, key variables explaining success/failures, industrial sickness, industrial reconstruction, technology obsolescence, technology, transfer.	10
		30

Practical (Based on the above Units):

Industrial Visits / Local Visits To Corporate Entity / NGO / SME / Government Undertaking / Cooperative Sector.

References:

1 Text Books:

1. *The Dynamics of Entrepreneurial Development & Management by Desai, Vasant, Himalaya Publishing House, Delhi*
2. *Managing Small Business by Longenecker, Moore, Petty and Palich, Cengage Learning, India Edition.*
3. *Cases in Entrepreneurship by Morse and Mitchell, Sage South Asia Edition.*
4. *Entrepreneurship–Indian Cases on Change Agents by K Ramchandran, TMGH.*
5. *Entrepreneurship The engine of growth, edited by Mark Riceand Timothy Habbershon, Published by Praeger Perspectives.*

2 Reference Books:

1. *Entrepreneurship: New Venture Creation by David H. Holt*
2. *Entrepreneurship Development New Venture Creation by Satish Taneja, S.L. Gupta*
3. *Project management by K. Nagarajan.*
4. *Entrepreneurship: Strategies and Resources by Marc J. Dollinger*
5. *The Culture of Entrepreneurship by Brigitte Berger.*
6. *Entrepreneurship by Robert D. Hisrich, Michael P. Peters, Dean A. Shepherd*
7. *Entrepreneurship As Strategy by G. Dale Meyer, Kurt A. Heppard*
8. *New Vistas of Entrepreneurship: Challenges & Opportunities by A. Sahay, M.S. Chhikara*
9. *Entrepreneurship and Small Business Management by Siropolis*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2		2					
CO3			3				
CO4				1			
CO5					2		
CO6						1	
CO7							1

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Students will be able to demonstrate a deep understanding of the key concepts and theories of entrepreneurship.

PO2 Critical Thinking and Problem solving

CO2. Students will be able to identify and evaluate business opportunities using a systematic approach.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO3. Students will be able to develop and implement a comprehensive business plan.

PO4 Research-Related Skills

CO4. Students will be able to demonstrate effective communication and teamwork skills in a business context.

PO5 Personal and Professional competence

CO5. Students will be able to apply strategic thinking and problem-solving skills to real-world business situations.

PO6 Effective Citizenship and Ethics

CO6. Students will be able to analyze and evaluate the financial viability of a business venture.

PO7 Environment and Sustainability

CO7. Students will be able to assess and manage the risks associated with entrepreneurial ventures.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Mandatory
Course Code : ECD-302-MJM
Course Title : Marketing Research
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To provide students with an understanding of the importance and methods of marketing research in decision-making processes.
2. To familiarize students with various research techniques and tools used in marketing research.
3. To enable students to apply marketing research concepts and techniques to real-world business scenarios.
4. To enhance students critical thinking and problem-solving skills in the context of marketing research.
5. To develop students ability to analyze and interpret marketing research data and draw meaningful insights.
6. To cultivate students written and oral communication skills in presenting research findings to stakeholders.
7. To determine distinct market segments based on demographics, psychographics, or behavior.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Students will identify the role and significance of marketing research in the overall marketing process.

CO2. Students will be understand and apply various research methodologies and tools for

collecting and analyzing data.

CO3. Students will be design and execute marketing research studies, including formulating research questions and objectives, selecting appropriate samples, and employing data collection techniques.

CO4. Students will be analyze and interpret marketing research data using appropriate statistical techniques and software.

CO5. Students will generate actionable insights and recommendations based on research findings to aid decision- making in marketing.

CO6. Students will communicate effectively in written and oral formats to present research findings to stakeholders.

CO7. Students will develop critical thinking skills to evaluate research studies and assess their validity and reliability.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Research Design:** Definition, Scope, Significance, Limitations, Obstacles in acceptance. Ethics in marketing research. **Research process:** Management dilemma(problem), decision problem, research problem, hypothesis statement.	8
2	**Data Design Methods:** Methods of collecting Market Information- Data sources- Secondary data, Primary data- Questionnaire design, Observation method of primary data collection, Web based primary data collection **Research techniques:** a) Based on questioning: Focus groups, Depth interviews, Projective techniques. b) Based on observations: ethnography, grounded theory, participant observation.	10
3	**Sampling**: sampling methods, sampling and non-sampling errors, sample size calculation, population and sample size, large and small samples - Data analysis and interpretation.	6
4	**Report writing:** forms of report, fundamentals of a good report.	6
		30

Practical (Based on the above Units):

- Industrial Visits / Local Visits To Corporate Entity / NGO / SME / Government Undertaking / Cooperative Sector.

References:

Recommended Books:

1. *Marketing Research,Concept & Cases–Cooper Schindler.*
2. *Research for Marketing Decisions –Paul Green, Donald Tull, Gerald Albaurn*
3. *Marketing Research– Nargundkar.*
4. *Marketing Research– Beri*
5. *Marketing Research– Measurement & Methods– Donald S.Tull ,DelI. Hawkins*
6. *Marketing Research– Aakar,Kumar, Day*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3				3		1
CO2		3				2	
CO3			3				
CO4				2			
CO5							
CO6							
CO7							

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Students will be identify the role and significance of marketing research in the overall marketing process.

PO2 Critical Thinking and Problem solving

CO2. Students will be understand and apply various research methodologies and tools for collecting and analyzing data.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO3. Students will be design and execute marketing research studies, including formulating research questions and objectives, selecting appropriate samples, and employing data collection techniques.

PO4 Research-Related Skills

CO4. Students will be analyze and interpret marketing research data using appropriate statistical techniques and software.

PO5 Personal and Professional competence

CO1. Students will be identify the role and significance of marketing research in the overall marketing process.

PO6 Effective Citizenship and Ethics

CO2. Students will be understand and apply various research methodologies and tools for collecting and analyzing data.

PO7 Environment and Sustainability

CO1. Students will be identify the role and significance of marketing research in the overall marketing process.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing

Programme Code : UVECD

Class : T.Y. B.Voc.

Semester : V

Course Type : Major Mandatory

Course Code : ECD-303-MJM

Course Title : Search Engine Optimization

No. of Credits : 02

No. of Teaching Hours : 30

Course Objectives:

1. To understand the basic principles and concepts of search engine optimization(SEO).
2. To gain knowledge of the various techniques, tools, and strategies used in SEO.
3. To learn how to conduct keyword research and analysis to effectively optimize websites.
4. To understand the importance of on-page optimization and learn how to optimize web pages for search engines.
5. To learn how to design and optimize website a architecture for better search engine visibility.
6. To gain knowledge of off-page optimization techniques such as link building and social media marketing.
7. To understand the role of content marketing in SEO and learn how to create compelling and SEO- friendly content.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Develop a thorough understanding of the principles and concepts of search engine optimization.

CO2. Gain practical skills in conducting keyword research and analysis for effective SEO.

CO3. Acquire knowledge and skills in on-page optimization to improve the visibility of web pages in search engine results.

CO4. Understand and implement effective techniques for off-page optimization, including link building and social media marketing.

CO5. Develop the ability to create high-quality and SEO-friendly content that attracts both search engines and users.

CO6. Learn how to analyze and interpret SEO analytics and reports to measure and improve SEO performance.

CO7. Stay updated with the latest trends and updates in the field of SEO to adapt and implement effective strategies.

Topics and Learning Points

UNIT	TOPIC	No. of Hours
1	**Introduction to SEO (Search Engine Optimization):** Introduction/Basic SEO, Basic html5, On Page: Meta Tags, Alt Tags, Anchor text, Sitemaps html/xml, Internal Links, Off Page: Links submissions, PPT Submissions, Social Bookmarking, Image / Infographics Submission, Video Submissions, Blogs, Articles Submissions, Advance SEO, Google Analytics, Google Webmaster, Google Tag Manager, Htaccess file, Robot.txt, Canonical tag, Site links, Keyword mapping, Introduction to Wordpress	15
2	**Introduction to SEM (Search Engine Marketing):** Google Adwords/Pay par click, Create campaign, Bidding strategies, Types of adds, Settings, Add groups, Manage multiple account, Remarketing, Conversion tracking, Conversion optimizer, Link Google analytics and Adwords, Payment method and settings, Google Adwords certification, Facebook Advertising, LinkedIn Advertising, YouTube Advertising	10
3	**SMM/SMO(Search Media Marketing/Search Engine Optimization):** Introduction, Importance, Types of accounts, Social platforms intro, Types of social platforms and their uniqueness: Facebook, Twitter, LinkedIn, Youtube, Pinterest	05
		30

References:

1. *SEO for Dummies, 6th Edition, By Peter Kent*

2. *SEO for Growth, By John Jantsch and Phil Singleton*
3. *The Art of SEO, Mastering Search Engine Optimization, By Eric Engel, Stephan Spencer and Jessie Stricchiol*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1		1	3			
CO2	2						
CO3		3					
CO4					3	1	
CO5							3
CO6	3						
CO7							

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Develop a thorough understanding of the principles and concepts of search engine optimization.

CO2. Gain practical skills in conducting keyword research and analysis for effective SEO.

CO6. Learn how to analyze and interpret SEO analytics and reports to measure and improve SEO performance.

PO2 Critical Thinking and Problem solving

CO3. Acquire knowledge and skills in on-page optimization to improve the visibility of web pages in search engine results.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO1. Develop a thorough understanding of the principles and concepts of search engine optimization.

PO4 Research-Related Skills

CO1. Develop a thorough understanding of the principles and concepts of search engine optimization.

PO5 Personal and Professional competence

CO4. Understand and implement effective techniques for off-page optimization, including link building and social media marketing.

PO6 Effective Citizenship and Ethics

CO4. Understand and implement effective techniques for off-page optimization, including link building and social media marketing.

PO7 Environment and Sustainability

CO5. Develop the ability to create high-quality and SEO-friendly content that attracts both search engines and users.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Mandatory
Course Code : ECD-304-MJM
Course Title : Programming Lab on C++
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To understanding of the C++ language syntax, structure, and semantics.
2. To earn and apply object-oriented programming concepts such as classes, objects, inheritance, polymorphism, and encapsulation.
3. To Learn how to declare, define, and call functions in C++, including concepts like function overloading, recursion, and parameter passing (by value and by reference).
4. To understand dynamic memory management in C++, including memory allocation and deallocation using new and delete.
5. To learn and implement fundamental data structures such as arrays, linked lists, stacks, and queues in C++.
6. To apply C++ programming skills to solve practical problems, including building basic applications, developing small games, or creating system utilities.
7. To apply problem-solving techniques to break down complex problems and implement effective solutions in C++.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Students will be understand and apply key object-oriented programming concepts such as classes, objects, constructors, destructors, inheritance, and polymorphism.

CO2. Students will be implement and apply fundamental data structures like arrays, linked lists, stacks, and queues in C++.

CO3. Students will be read from and write to text and binary files in C++.

CO4. Students will be understand the concept of exceptions and how to handle errors using try, catch, and throw.

CO5. Students will be create simple template functions and classes that can work with multiple data types.

CO6. Students will be use debugging techniques to identify logical and runtime errors in C++ programs.

CO7. Students will be develop problem-solving skills using C++ through practical exercises and projects.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to C++:** 1.1 History 1.2 Structure of C++ Program 1.3 Object Oriented Concepts 1.4 Procedure-Oriented Programming Vs. Object Oriented Programming 1.5 Syntax of C++,Comments, Output, Variable , User Input String	8
2	**Programming in C++:** 2.1 Data Types, 2.2 New operators and keywords, 2.3 Type casting in C++, reference variables. 2.4 If else, Switch Statement 2.5 Loops, Break/Continue Statement Array, Structure, Enumeration, Pointer	6
3	**Functions and overloading:** 3.1 Static Members 3.2 Call by reference, return by reference 3.3 Inline Function 3.4 Friend Function 3.5 Function overloading 3.6 Constructer & Destructor and their types 3.7 Overloading unary and binary operators (with member function and with friend function) Usage of this pointer	8
4	**Inheritance:** 4.1 Classes/Objects 4.2 Encapsulation	8

	4.3 Polymorphism 4.4 Inheritance 4.5 Exception 4.6 Data structures(list, stacks, queues, etc)	
		30

Practical of C++:

1. C++ Program to Check Whether a Number is Even.
2. C++ Program to Check Whether a Given Number is Even or Odd.
3. C program to Check Whether a Number is Positive or Negative.
4. C++ Program to Find Sum of Digits of a Number.
5. C++ Program to Check Whether a given Year is a Leap Year.
6. C++ Program to Check Whether a Character is a Vowel, Consonant or Digit.
7. C++ Program to Check Prime Number.
8. C++ Program to Check Whether a Given Number is Perfect Number.
9. C++ Program to Print Armstrong Number between 1 to 1000.
10. C++ Program to Check if a Number is Divisible by Second Number.
11. C++ Program to Read Primitive Data Types.
12. C++ Program which illustrates the use of switch statement. The program takes percentage as the input and the grade is output on the screen using the switch statement.
13. C++ Program to Make a Simple Calculator to Add, Subtract, Multiply or Divide Using switch...case.
14. C++ Program to Find the Area of a Circle.
15. C++ Program to Find the Area of Shapes using Switch Case.
16. C++ Program to Find Second Largest and Smallest Elements of an Array.
17. C++ Program to Find Sum and Product of Array Elements.
18. C++ Program to Add Two Complex Numbers using Class.
19. C++ Program to Illustrate Const Keyword with Member Functions.
20. C++ Program to Illustrate Multiple Inheritances.

References:

1. *C++:The Complete Reference-Schildt, McGraw-HillEducation(India)*

2. *Object Oriented Programming with C++ -Rajiv Sahay,Oxford*
3. *Object Oriented Programming (C++) Balaguruswamy, McGrawHillEducation; Seventh edition*
4. *Mastering C++ by Venugopal, T Ravishankar, McGrawHillEducation;2 edition*
5. *Letus C++ by – Yashwant Kanitkar*

E-Resources:

1. Head First C++ Programming–Harry.H.Chaudhary

   https://books.google.co.in/books?id=-xzlAwAAQBAJ&printsec=frontcover&dq=C%2B%2B+ebook&hl=en&sa=X&ved=0ahUKEwj7yKfmnaLpAhXhX3wKHX31Bn4Q6AEIJzAA#v=onepage&q&f=false

2. A Complete Guide to Programming C++ - Jones and Bartlett Computer Science https://books.google.co.in/books?id=-yhuY0Wg_QcC&printsec=frontcover&dq=C%2B%2B+ebook&hl=en&sa=X&ved=0ahUKEwj7yKfmnaLpAhXhX3wKHX31Bn4Q6AEINzAC#v=onepage&q&f=false
3. Programming with C++ - D Ravichandran https://books.google.co.in/books?id=Zw0jqouq61gC&printsec=frontcover&dq=C%2B%2B+ebook&hl=en&sa=X&ved=0ahUKEwj7yKfmnaLpAhXhX3wKHX31Bn4Q6AEILzAB#v=onepage&q=C%2B%2B%20ebook&f=false
4. C++Programming –D.S.Malik https://books.google.co.in/books?id=NxIeCgAAQBAJ&printsec=frontcover&dq=C%2B%2B

   +ebook&hl=en&sa=X&ved=0ahUKEwj7yKfmnaLpAhXhX3wKHX31Bn4Q6AEIajAI#v=onepage&q=C%2B%2B%20ebook&f=false

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2					1	
CO2	3	3					
CO3		2					
CO4			3				
CO5				2			
CO6				3			2
CO7					2		1

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Students will be understand and apply key object-oriented programming concepts such as classes, objects, constructors, destructors, inheritance, and polymorphism.

CO2. Students will be implement and apply fundamental data structures like arrays, linked lists, stacks, and queues in C++.

PO2 Critical Thinking and Problem solving

CO2. Students will be implement and apply fundamental data structures like arrays, linked lists, stacks, and queues in C++.

CO3. Students will be read from and write to text and binary files in C++.Handle basic file errors and implement file processing techniques.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO4. Students will be understand the concept of exceptions and how to handle errors using try, catch, and throw.

PO4 Research-Related Skills

CO5. Students will be create simple template functions and classes that can work with multiple data types.

CO6. Students will be use debugging techniques to identify logical and runtime errors in C++ programs.

PO5 Personal and Professional competence

CO7. Students will be develop problem-solving skills using C++ through practical exercises and projects.

PO6 Effective Citizenship and Ethics

CO1. Students will Understand and apply key object-oriented programming concepts such as classes, objects, constructors, destructors, inheritance, and polymorphism.

PO7 Environment and Sustainability

CO6. Students will be use debugging techniques to identify logical and runtime errors in C++ programs.

CO7. Students will be develop problem-solving skills using C++ through practical exercises and projects.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Mandatory
Course Code : ECD-305-MJM
Course Title : Basic of Python
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To gain a thorough understanding of Python's syntax and basic programming constructs.
2. To learn how to use various data types such as strings, integers, floats, lists, dictionaries, and more.
3. To master the use of conditional statements (if, else if, else) for decision-making.
4. To enhance critical thinking and problem-solving abilities by applying Python to solve real-world problems.
5. To learn how to define functions in Python for organizing and reusing code.
6. To understand the basics of object-oriented programming (OOP) in Python, including classes, objects, attributes, and methods. Learn about key OOP concepts like inheritance, encapsulation, and polymorphism.
7. To learn how to leverage Python's extensive libraries and modules to perform a variety of tasks (e.g., math, datetime, random).
8. To develop a strong foundation in Python that will enable students to advance to more complex programming topics.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Write simple programs using built-in data types of Python.

CO2. Understanding how to define variables, use data types (e.g., strings, integers, lists, etc.), and work with Python's built-in functions.

CO3. Understanding and manipulation of Python data structures such as lists, tuples, dictionaries, and sets.

CO4. Ability to create reusable code blocks with functions (defining functions, passing arguments, returning values).

CO5. Solve problems spanning multiple disciplines using suitable programming constructs in Python.

CO6. Solve problems spanning multiple disciplines using the concepts of object oriented programming in Python.

CO7. Understanding how to handle runtime errors using try, except, else, and finally blocks. Ability to raise custom exceptions when necessary.

CO8. Familiarity with Python standard libraries and the ability to import and use them in programs. Introduction to external libraries (e.g., NumPy, Pandas, matplotlib) for more advanced Python functionalities.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Python Basics:** 1.1 Introduction to Python 1.2 Python installation 1.3 Print statement , comment 1.4 The print statement 1.5 Comments 1.6 Python Data Structures & Data Types 1.7 String Operations in Python 1.8 Simple Input & Output 1.9 Simple Output Formatting 1.10 Operators in python	8
2	**Python Program Flow:** 2.1 The If statement and its' related statement(assertion) 2.2 An example with if and it's related statement(explanation) 2.3 The while loop 2.4 The for loop 2.5 The range statement 2.6 Break & Continue 2.7 Assert	6
3	**User Defined Functions:** 3.1 Create your own functions	8

	3.2 Functions Parameters 3.3 Variable Arguments 3.4 Scope of a Function 3.5 Function Documentations 3.6 Lambda Functions default arguments	
4	**Classes In Python:** 4.1 New Style Classes 4.2 Creating Classes 4.3 Instance Methods 4.4 Inheritance 4.5 Polymorphism 4.6 Exception Classes & Custom Exceptions	8
		30

Practical of python programming:

1. Python Program to Print Hello world!
2. Python Program to Add Two Numbers.
3. Python Program to Find the Square Root.
4. Python Program to Calculate the Area of a Triangle.
5. Python Program to Swap Two Variables.
6. Python Program to Generate a Random Number.
7. Python Program to Check if a Number is Positive, Negative or 0.
8. Python Program to Check if a Number is Odd or Even.
9. Python Program to Check Leap Year.
10. Python Program to Find the Largest Among Three Numbers.
11. Python Program to Check Prime Number.
12. Python Program to Print all Prime Numbers in an Interval.
13. Python Program to Find the Factorial of a Number.
14. Python Program to Find the Sum of Natural Numbers.
15. Python Program to Add Two Matrices.
16. Python Program to Find Numbers Divisible by Another Number.
17. Python Program to Find HCF or GCD.
18. Python Program to Find LCM.
19. Python Program to Find the Factors of a Numb.

References:

1. *"Python for Data Analysis" by Wes McKinney*
2. *"Fluent Python" by Luciano Ramalho*
3. *"Python Crash Course" by Eric Matthes*
4. *"Automate the Boring Stuff with Python" by Al Sweigart*
5. *Learn Python the Hard Way" by Zed A. Shaw*

E-Resources:

1. Official Python Documentation Website: https://docs.python.org
2. Python.org Tutorials Website: https://www.python.org/about/gettingstarted/
3. Codecademy: Learn Python Website: https://www.codecademy.com/learn/learn-python-
4. Python for Everybody(Coursera)
   Website:https://www.coursera.org/specializations/python

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1						2	
CO2	1	2				1	
CO3		2					
CO4							
CO5	2						
CO6				1			
CO7							
CO8			3	2	3		3

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO2. Understanding how to define variables, use data types (e.g., strings, integers, lists, etc.), and work with Python's built-in functions.
CO5. Solve problems spanning multiple disciplines using suitable programming constructs in Python.

PO2 Critical Thinking and Problem solving

CO2. Understanding how to define variables, use data types (e.g., strings, integers, lists, etc.), and work with Python's built-in functions.

CO3. Understanding and manipulation of Python data structures such as lists, tuples, dictionaries, and sets.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO8. Familiarity with Python standard libraries and the ability to import and use them in programs. Introduction to external libraries (e.g., NumPy, Pandas, matplotlib) for more advanced Python functionalities.

PO4 Research-Related Skills

CO6. Solve problems spanning multiple disciplines using the concepts of object oriented programming in Python.
CO8. Familiarity with Python standard libraries and the ability to import and use them in programs. Introduction to external libraries (e.g., NumPy, Pandas, matplotlib) for more advanced Python functionalities.

PO5 Personal and Professional competence

CO8. Familiarity with Python standard libraries and the ability to import and use them in programs. Introduction to external libraries (e.g., NumPy, Pandas, matplotlib) for more advanced Python functionalities.

PO6 Effective Citizenship and Ethics

CO1. Write simple programs using built-in data types of Python. Ability to write Python programs using basic syntax rules (keywords, identifiers, operators, etc.).
CO2.Understanding how to define variables, use data types (e.g., strings, integers, lists, etc.), and work with Python's built-in functions.

PO7 Environment and Sustainability

CO8. Familiarity with Python standard libraries and the ability to import and use them in programs. Introduction to external libraries (e.g., NumPy, Pandas, matplotlib) for more advanced Python functionalities.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Elective
Course Code : ECD-306-MJE(A)
Course Title : Software Engineering
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To define software engineering and its importance in the software development life cycle.
2. To Identify and explain the key principles and practices of software engineering.
3. To understand the process of requirements gathering and analysis.
4. To develop skills in writing clear and unambiguous software requirements specifications.
5. To list and describe the fundamental phases of the Software Development Lifecycle (SDLC).
6. To define and describe fundamental software engineering terminology and coding practices.
7. To understand Information Systems (IS) enables new approaches to improve efficiency and efficacy of business models.

Course Outcomes:

By the end of the course, students will be able to:

CO1. How to apply the software engineering lifecycle demonstrating competence in communication, planning, analysis, design, construction, and deployment.

CO2. An ability to work in one or more significant application domains.

CO3. Work as an individual and as part of a multidisciplinary team to develop and deliver quality software.

CO4. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.

CO5. Demonstrate an ability to use the techniques and tools necessary for engineering practice.

CO6. Recognize the challenges and importance of software maintenance.

CO7. Implement strategies for software evolution and version control.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introductory concepts:** Introduction, definition, objectives, Life cycle – Requirements analysis and specification. **Design and Analysis:** Cohesion and coupling, **Data flow oriented Design:** Transform centered design, Transaction centered design. Analysis of specific systems like Inventory control, Reservation system. **Object-oriented Design:** Object modeling using UML, use case diagram, class diagram, interaction diagrams: activity diagram, unified development process.	10
2	**Basic Concepts of Information System:** Role of data and information, Organization structures, Business Process, Systems Approach and introduction to Information Systems. **Types of IS:** Resources and components of Information System, integration and automation of business functions and developing business models. Role and advantages of Transaction Processing System, Management Information System, Expert Systems and Artificial Intelligence, Executive Support Systems and Strategic Information Systems.	10
3	**Architecture & Design of IS:** Architecture, development and maintenance of Information Systems, Centralized and Decentralized Information Systems, Factors of success and failure, value and risk of IS. **Decision Making Process:** Programmed and Non- Programmed decisions, Decision Support Systems, Models and approaches to DSS.	10

	function and with friend function) Usage of this pointer	
		30

References:

Text Books:

1. *Management Information Systems, Effy OZ, Thomson Leaning/Vikas Publications.*
2. *Management Information Systems, James A. O'Brein, Tata McGraw-Hill.*

Reference Books:

1. *Clean Code by a legend of the software engineering world Robert C. Martin.*
2. *Software Engineering (Two Colour Edition) by Prof. K.K. Aggarwal, Prof. Yogesh Singh, New Age International (P) Ltd., Publishers.*
3. *Management Information System, W.S Jawadekar, Tata McGraw Hill Publication.*
4. *Management Information System, David Kroenke, Tata McGraw Hill Publication.*
5. *MIS: Management Perspective, D.P. Goyal, Macmillan Business Books.*
6. *MIS and Corporate Communications, Raj K. Wadwha, Jimmy Dawar, P. BhaskaraRao, Kanishka Publishers.*
7. *MIS: Managing the digital firm, Kenneth C. Landon, Jane P. Landon, Pearson Education.*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2						
CO2	1			2		1	
CO3		3					
CO4	3		1				
CO5					3		
CO6							1
CO7							

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. How to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment.

CO2. An ability to work in one or more significant application domains.

CO4. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.

PO2 Critical Thinking and Problem solving

CO3. Work as an individual and as part of a multidisciplinary team to develop and deliver quality software.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO4. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.

PO4 Research-Related Skills

CO2. An ability to work in one or more significant application domains.

PO5 Personal and Professional competence

CO5. Demonstrate an ability to use the techniques and tools necessary for engineering practice.

PO6 Effective Citizenship and Ethics

CO2. An ability to work in one or more significant application domains.

PO7 Environment and Sustainability

CO6. Recognize the challenges and importance of software maintenance.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Elective
Course Code : ECD-306-MJE(B)
Course Title : Business Management
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To develop and understanding of the principles and theories of business management.
2. To explore the functions and roles of managers in organizations.
3. To gain knowledge in planning, organizing, leading, and controlling activities in a business setting.
4. To understand the importance of effective communication and teamwork in managing a business.
5. To analyse and evaluate the internal and external environments that affect business management decisions.
6. To develop problem-solving and decision-making skills in a business context.
7. To learn to apply ethical and socially responsible practices in business management.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Demonstrate and understanding of the key concepts and theories in business management.
CO2. Apply management principles and theories to real-life business situations.
CO3. Identify and analyze the functions and roles of managers in different organizational contexts.

CO4. Develop effective communication skills necessary for managing individuals and teams.

CO5. Apply problem-solving and decision-making techniques to resolve business management challenges.

CO6. Evaluate the internal and external environments of organizations to make informed management decisions.

CO7. Demonstrate ethical and socially responsible practices in business management.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to Business Environment:** Overview of business management, nature, importance and scope of business, branches/ functions of business management. **Economics-** Introduction to Economics, Basic Economic Problem, Demand Analysis and Forecasting **Marketing overview-** Market competitions, Risk Analysis and Decision Making. **Technology Management**-Role of technology in business management, importance of technology management in business. Impact of technology on business.	15
2	**Components of Business Management:** Human Resource Management, Financial Management, Business Finance, Operation Management, Supply Chain Management, Production Planning & Control (PPC), Business Analytics (BA), Rural & Agribusiness Management (RABM), Pharma & Healthcare Management (PHM), Tourism & Hospitality Management (THM)	15
		30

References:

1. *Managerial Economics by Peterson, Lewis, Sudhir Jain, Pearson, Prentice Hall*
2. *Indian Economy by Datt & Sundaram, 61stEdition, SChan*
3. *Managerial Economic Mithani Himalaya Publications*
4. *Managerial Economics by Homas and Maurice,TataMcGraw Hill,8thEdition*
5. *MarketingManagement-TextandCases,TapanKPanda,2ndEdition,Excel*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3				3		
CO2	2	3					
CO3	1	2	3			2	
CO4			2	1			
CO5			1		2		
CO6							
CO7							3

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Demonstrate an understanding of the key concepts and theories in business management.

CO2. Apply management principles and theories to real-life business situations.

CO3. Identify and analyze the functions and roles of managers in different organizational contexts.

PO2 Critical Thinking and Problem solving

CO2. Apply management principles and theories to real-life business situations.

CO3. Identify and analyze the functions and roles of managers in different organizational contexts.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO3. Identify and analyze the functions and roles of managers in different organizational contexts.

CO4. Develop effective communication skills necessary for managing individuals and teams.

CO5. Apply problem-solving and decision-making techniques to resolve business management challenges.

PO4 Research-Related Skills

CO4. Develop effective communication skills necessary for managing individuals and teams.

PO5 Personal and Professional competence

CO1. Demonstrate an understanding of the key concepts and theories in business management.

CO5. Apply problem-solving and decision-making techniques to resolve business management challenges.

PO6 Effective Citizenship and Ethics

CO3. Identify and analyze the functions and roles of managers in different organizational contexts.

PO7 Environment and Sustainability

CO7. Demonstrate ethical and socially responsible practices in business management.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Major Elective
Course Code : ECD-306-MJE(C)
Course Title : Human Resource Management
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To provide students with an understanding of the key concepts and principles of human resource management.
2. To develop students' skills in effective recruitment, selection, and retention of employees.
3. To equip students with knowledge on employee training, development, and performance appraisal.
4. To familiarize students with the legal and ethical issues related to human resource management.
5. To enhance students' abilities to effectively manage employee relations and resolve conflicts in the workplace.
6. To provide students with an understanding of the strategic role of human resource management in organizational success.
7. To develop students' skills in managing diversity and promoting inclusivity in the workplace.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Understand the role and importance of human resource management in organizations.

CO2. Apply the principles and techniques of effective recruitment and selection.

CO3. Demonstrate knowledge of training and development practices to enhance employee performance.

CO4. Understand the legal and ethical considerations in human resource management.

CO5. Develop skills in managing employee relations, including conflict resolution.

CO6. Analyze the strategic implications of human resource management decisions.

CO7. Demonstrate sensitivity and understanding towards diversity in the workplace.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to HRM & Framework -** Nature of HRM, Scope of HRM, HRM: Functions and Objectives, HRM: Policies and practices, Concept of Personnel Management & Difference between in HRM & Personnel Management	10
2	**HR Procurement:** Job description, Job Evaluation, Job design, Human Resource Planning Recruitment Selection Career Planning: Succession Planning.	8
3	**Training and Development -** Employee Training and Development Nature of training, Training process, Training needs assessment, Training evaluation, Training design, Implementing Training programs(Training methods), Implementing management development programs. **HRM Strategies** SHRM, Nature of SHRM, Global competitiveness and Strategic HR, Linkage of organizational and HR strategies, SHRM Model	12
		30

References:

1. *Human Resource Management by Narayanappa, Scitech Publication*
2. *Personnel/ Human Resource Management by David DeCenzo, Stephen Robbins, Prentice Hall of India,2008, 3 rd Edition Human Resource Management by J.*

John Bernardin, Tata McGraw Hill Publishing, 4 th Edition

3. *Human Resources Management by L.M. Prasad*
4. *Human Resources Management by Ashwathappa*
5. *Managing Human Resources by Arun Monappa*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2				1		
CO2		3				1	
CO3			1				3
CO4				1			
CO5	3						
CO6		1					
CO7			2				

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Understand the role and importance of human resource management in organizations.

CO5. Develop skills in managing employee relations, including conflict resolution.

PO2 Critical Thinking and Problem solving

CO2. Apply the principles and techniques of effective recruitment and selection.

CO6. Analyze the strategic implications of human resource management decisions.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO3. Demonstrate knowledge of training and development practices to enhance employee performance.

CO7. Demonstrate sensitivity and understanding towards diversity in the workplace.

PO4 Research-Related Skills

CO4. Understand the legal and ethical considerations in human resource management.

PO5 Personal and Professional competence

CO1. Understand the role and importance of human resource management in organizations.

PO6 Effective Citizenship and Ethics

CO2. Apply the principles and techniques of effective recruitment and selection.

PO7 Environment and Sustainability

CO3. Demonstrate knowledge of training and development practices to enhance employee performance.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y.B. Voc.
Semester : V
Course Type : Minor
Course Code : ECD-341-MN
Course Title : Fundamentals of Graphics Design
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To understand and apply the basic principles of graphic design.
2. To utilize design software tools effectively.
3. To create visually appealing and communicative designs.
4. To critically analyze and evaluate design work.
5. To develop a design portfolio showcasing their work.
6. To enhance creative thinking and problem-solving skills through design challenges and projects that encourages innovative ideas and concepts.
7. To explore the principles of branding and how graphic design plays a crucial role in creating and communicating a brand's identity.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Student will understand and apply the principles of design (balance, contrast, alignment, repetition, proximity) in graphic design projects.

CO2. Student will develop proficiency in industry-standard graphic design software (e.g., Adobe Photoshop, Illustrator).

CO3. Student will create and present a portfolio of graphic design work that showcases a variety of design techniques and styles.

CO4. Student will analyze and critique visual communication materials, understanding audience and purpose.

CO5. Student will demonstrate effective use of typography and color theory in design projects.

CO6. Student will collaborate effectively in team settings to produce cohesive graphic design solutions.

CO7. Students will explore the historical and cultural context of graphic design, including its impact on society and communication.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to Graphic Design:** Overview of graphic design and its history Introduction to design principles **Elements of Design:** Line, shape, color, texture, and space **Color Theory:** Understanding color models, harmony, and psychology	10
2	**Typography:** Introduction to typefaces, hierarchy, and layout **Composition and Layout:** Principles of alignment, balance, and contrast **Visual Hierarchy:** Importance of visual hierarchy in design	10
3	**Branding and Identity Design:** Basics of logo design and brand identity **Digital Design and Software Skills:** Overview of design software tools and techniques **User Interface(UI) and User Experience(UX) Basics:** Introduction to UI/UX principles, Discussion on responsive design	10
		30

References:

1. *"The Elements of Graphic Design" by Alex W. White*
2. *"Graphic Design: The New Basics" by Ellen Lupton and Jennifer Cole Phillips*
3. *"Thinking with Type" by Ellen Lupton*
4. *"Designing Brand Identity: An Essential Guide for the Whole Branding Team" by Alina Wheeler*

5. *"The Visual Display of Quantitative Information" by Edward R. Tufte*
6. *"Interaction of Color" by Josef Albers*
7. *"How to be a Graphic Designer Without Losing Your Soul" by Adrian Shaughnessy*
8. *"A Designer's Art" by Paul Rand*
9. *"Making and Breaking the Grid: A Graphic Design Layout Workshop" by Timothy Samara*
10. *"Logo Design Love: A Guide to Creating Iconic Brand Identities" by David Airey*

Required Materials:

1. Computer with internet access
2. Design software (Adobe Creative Suite or equivalent)
3. Sketchbook and drawing tools
4. Access to a printer for project submissions

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1		1	3			
CO2	2						1
CO3		3	2	1			
CO4					3	1	
CO5							3
CO6	3						
CO7							2

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Student will understand and apply the principles of design (balance, contrast, alignment, repetition, proximity) in graphic design projects.

CO2. Student will develop proficiency in industry-standard graphic design software (e.g., Adobe Photoshop, Illustrator).

CO6. Student will collaborate effectively in team settings to produce cohesive graphic design solutions.

PO2 Critical Thinking and Problem solving

CO3. Student will create and present a portfolio of graphic design work that showcases a variety of design techniques and styles.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO1. Student will understand and apply the principles of design (balance, contrast, alignment, repetition, proximity) in graphic design projects.

CO3. Student will create and present a portfolio of graphic design work that showcases a variety of design techniques and styles.

PO4 Research-Related Skills

CO1. Student will understand and apply the principles of design (balance, contrast, alignment, repetition, proximity) in graphic design projects.

CO3. Student will create and present a portfolio of graphic design work that showcases a variety of design techniques and styles.

PO5 Personal and Professional competence

CO4. Student will analyze and critique visual communication materials, understanding audience and purpose.

PO6 Effective Citizenship and Ethics

CO4. Student will analyze and critique visual communication materials, understanding audience and purpose.

PO7 Environment and Sustainability

CO2. Student will develop proficiency in industry-standard graphic design software (e.g., Adobe Photoshop, Illustrator).

CO5. Student will demonstrate effective use of typography and color theory in design projects.

CO7. Students will explore the historical and cultural context of graphic design, including its impact on society and communication.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Minor
Course Code : ECD-342-MN
Course Title : Graphics Design Using Canva
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To understand the key principles of graphics design and how they can be applied to social media
2. To create visually appealing graphics using design software such as Adobe Photoshop or Canva
3. To identify and utilize best practices for optimizing graphics for various social media platforms
4. To evaluate and analyze the effectiveness of social media graphics in engaging and attracting audiences
5. To develop a comprehensive social media graphics strategy for a specific target audience
6. To understand how to use Canva's presentation tools to showcase designs effectively.
7. To learn about the evolving features and tools in Canva to enhance design quality and efficiency.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Learn the core principles of graphic design such as color theory, typography, layout, and composition.

CO2. Design eye-catching graphics for social media platforms (Instagram, Facebook, Twitter, etc.). Customize posts, ads, and banners to meet platform-specific size and style requirements.

CO3. Develop marketing materials like flyers, brochures, posters, and business cards.

CO4. Design web graphics like headers, infographics, and banners for websites and blogs.

CO5. Understand best practices for organizing and managing design projects in Canva.

CO6. Understand export settings for high-quality prints and web-ready graphics.

CO7. Create a diverse portfolio of design projects to showcase your skills.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to Canva:** Welcome to Canva!, Logging/Setup Canva Account, Layouts & Templates, Get you setup with your Canva & account, Adding pages to a design, Image, Text features and Charts, Album cover, YouTube thumbnail, Twitter header, Facebook post, Ebook cover, Documents, Data and charts, Presentation slides	10
2	**Fonts, Colors, and Images:** Typography and font pairing, Using icons effectively, Organising the dashboard, Sharing designs, Adding links, Upgrading to Canva for Work, Brand colors, Custom filter codes, Colorcodes, Colorscheme, Introduction to the colorwheel; creating a colorpalette, How to use grids; transparency; photo filters Section	10
3	**Advanced Techniques:** Brand Kit, Magic Resize, Paid Elements, Folders for Elements, Background Remover, Teams, Exporting and Scheduling, Learn more advanced techniques, Learn how to create a logo from Scratch	10
		30

Practicals on Graphics Design Using Canva:

1. Explain the basic elements of graphics Design.
2. What is Canva? Explain Canva Editor.
3. Explain in detail Canva sidebar.
4. Creating a Social Media Post.
5. Create social media banner adds for your business.
6. Designing a Business Card.
7. Create business card for your business.
8. Designing a Poster.
9. Creating a Presentation.
10. Infographic Creation.
11. Designing a Flyer.
12. How do you export your design for print versus digital use in Canva?
13. How can you animate elements in your Canva design?
14. How do you resize a design for different formats in Canva?
15. How do you collaborate with others on a design in Canva?

References:

1. *"Canva: A Beginner's Guideto Graphic Design" by Andrew D.Brookshire*
2. *"Canva for Work: Design Beautiful Graphics with Canva" by Lisa Larson-Kelley*
3. *"Canva Workbook: Design Your Brand's Graphics with Ease" by Rachel Rofé*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2						
CO2	1	1				3	2
CO3							1
CO4					2		1
CO5		2		1	3		
CO6			1				
CO7			2				

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Learn the core principles of graphic design such as color theory, typography, layout, and composition.

CO2. Design eye-catching graphics for social media platforms (Instagram, Facebook, Twitter, etc.). Customize posts, ads, and banners to meet platform-specific size and style requirements.

PO2 Critical Thinking and Problem solving

CO2. Design eye-catching graphics for social media platforms (Instagram, Facebook, Twitter, etc.). Customize posts, ads, and banners to meet platform-specific size and style requirements.

CO5: Understand best practices for organizing and managing design projects in Canva.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO6. Understand export settings for high-quality prints and web-ready graphics.

CO7. Create a diverse portfolio of design projects to showcase your skills.

PO4 Research-Related Skills

CO5. Understand best practices for organizing and managing design projects in Canva.

PO5 Personal and Professional competence

CO4. Design web graphics like headers, infographics, and banners for websites and blogs.

CO5. Understand best practices for organizing and managing design projects in Canva.

PO6 Effective Citizenship and Ethics

CO2. Design eye-catching graphics for social media platforms (Instagram, Facebook, Twitter, etc.). Customize posts, ads, and banners to meet platform-specific size and style requirements.

PO7 Environment and Sustainability

CO2. Design eye-catching graphics for social media platforms (Instagram, Facebook, Twitter, etc.). Customize posts, ads, and banners to meet platform-specific size and style requirements.

CO3. Develop marketing materials like flyers, brochures, posters, and business cards

CO4: Design web graphics like headers, infographics, and banners for websites and blogs.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Vocational Skill Course (VSC)
Course Code : ECD-321-VSC
Course Title : CodeIgniter Framework
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To understand the basics of MVC architecture.
2. To set up a CodeIgniter development environment.
3. To create and manage a CodeIgniter application.
4. To database interaction.
5. To implement form handling and validation.
6. To utilize helpers and libraries.
7. To manage sessions and authentication.
8. To work with views and templates.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Students will be able to explain the Model-View-Controller (MVC) architecture and how it is implemented in CodeIgniter.

CO2. Students will be able to install, configure, and set up a CodeIgniter development environment on their local machines.

CO3. Students will understand how to define routes and manage URLs in a CodeIgniter application, including creating custom routes.

CO. Students will be able to connect to a database using CodeIgniter's database library and perform CRUD (Create, Read, Update, Delete) operations.

CO5. Students will learn how to create and manage views in CodeIgniter, including the use of templating systems and layouts.

CO6. Students will be able to implement form handling and validation in CodeIgniter applications, ensuring data integrity and security.

CO7. Students will understand how to manage user sessions, implement authentication, and secure their applications against unauthorized access.

Topics and Learning Points

UNIT	TOPIC	No. of Lectures
1	**Introduction to CodeIgniter:** Overview of PHP Frameworks, What is a framework? Advantages of using frameworks, What is CodeIgniter? Features and benefits of CodeIgniter, **Environment Setup:** Installing XAMPP/LAMP/WAMP, Downloading and installing CodeIgniter, Configuring the development environment	8
2	**Basic Concepts:** MVC Architecture, Understanding Model-View-Controller (MVC), How CodeIgniter implements MVC **Directory Structure:** Overview of CodeIgniter's directory structure, Explanation of key directories (application, system, etc.) **Configuration:** Configuration Files- Understanding config.php, Database configuration using database.php	8
3	**Autoloading:** Autoloading libraries, helpers, and models **URL Routing:** Understanding the routing mechanism, Creating custom routes **Working with Models:** Creating Models, What are models? Creating and using models Database Interactions: Using CodeIgniter's Query Builder, CRUD operations (Create, Read, Update, Delete), Handling database	8

	migrations	
4	**Working with Views:** Creating Views, What are views? Creating and loading views **Passing Data to Views:** Sending data from controllers to views **Using Layouts and Templates:** Implementing layouts, Using template engines (optional) **Working with Controllers:** Creating Controllers, What are controllers? Creating and using controllers, Controller Methods- Understanding methods and their usage, Handling form submissions	6
		30

Practicals of CodeIgniter Framework:

1. What is CodeIgniter? Describe what CodeIgniter is and its main features.
2. How do you install CodeIgniter? Explain the steps required to install CodeIgniter on a local server.
3. What is the directory structure of a CodeIgniter application? Briefly describe the purpose of key directories such as `application`, `system`, and `public`.
4. What is the purpose of the `config.php` file? Discuss the significance of the `config.php` file in CodeIgniter.
5. How does routing work in CodeIgniter? Explain how to create custom routes in CodeIgniter.
6. What are controllers in CodeIgniter? Describe the role of controllers and how to create a basic controller.
7. How can you pass data from a controller to a view? Provide an example of how to pass data to a view.
8. What is the purpose of models in CodeIgniter? Explain how models work and their importance in MVC architecture.
9. How do you load a model in CodeIgniter? Provide an example of loading a model within a controller.
10. How do you perform CRUD operations using CodeIgniter's Query Builder? Describe how to create, read, update, and delete records using the Query Builder.

11. How do you create a view in CodeIgniter? Explain the steps to create a view and load it from a controller.
12. What are helpers in CodeIgniter, and how do you use them? Discuss the purpose of helpers and provide an example of using a helper function.
13. How do you handle form submissions in CodeIgniter? Explain how to create a form and handle its submission.
14. What is the form validation library in CodeIgniter? Describe how to use the form validation library.
15. How do you manage user sessions in CodeIgniter? Explain how to use the session library for user authentication.

References:

Here are some recommended books for learning the CodeIgniter framework:

1. *"CodeIgniter 4: The Complete Guide" by David Carr*
2. *"CodeIgniter for Rapid PHP Application Development" by David Hughes*
3. *"Learning CodeIgniter 3" by Rakesh Gupta*
4. *"CodeIgniter 3 by Example" by Harish Chouhan*
5. *"Mastering CodeIgniter" by Christopher P. N. Chua*
6. *"CodeIgniter 4: Getting Started" by Michael T. Smith*
7. *"CodeIgniter 4 Cookbook" by Rakesh Gupta*
8. *"Building Web Applications with CodeIgniter" by Nitin Jadhav*

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	**Programme Outcomes (POs)**						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						2
CO2	2				2		
CO3							
CO4		2					
CO5						1	
CO6			2	1			
CO7			3				

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Students will be able to explain the Model-View-Controller (MVC) architecture and how it is implemented in CodeIgniter.

CO2. Students will be able to install, configure, and set up a CodeIgniter development environment on their local machines.

PO2 Critical Thinking and Problem solving

CO4. Students will be able to connect to a database using CodeIgniter's database library and perform CRUD (Create, Read, Update, Delete) operations.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO6. Students will be able to implement form handling and validation in CodeIgniter applications, ensuring data integrity and security.

CO7. Students will understand how to manage user sessions, implement authentication, and secure their applications against unauthorized access.

PO4 Research-Related Skills

CO6. Students will be able to implement form handling and validation in CodeIgniter applications, ensuring data integrity and security.

PO5 Personal and Professional competence

CO2. Students will be able to install, configure, and set up a CodeIgniter development environment on their local machines.

PO6 Effective Citizenship and Ethics

CO5. Students will learn how to create and manage views in CodeIgniter, including the use of templating systems and layouts.

PO7 Environment and Sustainability

CO1. Students will be able to explain the Model-View-Controller (MVC) architecture and how it is implemented in CodeIgniter.

CBCS Syllabus as per NEP 2020 for T.Y.B.VOC ECD (2023 Pattern)

Name of the Programme : B. Vocational in E-Commerce & Digital Marketing
Programme Code : UVECD
Class : T.Y. B.Voc.
Semester : V
Course Type : Field Project (FP)
Course Code : ECD-335- FP
Course Title : Field Project
No. of Credits : 02
No. of Teaching Hours : 30

Course Objectives:

1. To enable students to apply the concepts, methodologies, and tools learned in their coursework to real-world scenarios, gaining practical experience in solving industry-specific problems.
2. To encourage students to identify challenges within a project, critically evaluate potential solutions and choose the most effective course of action to achieve project goals.
3. To guide students in the development of a full-scale project, from the initial ideation and planning phases, through the development and testing phases, to the final deployment and maintenance.
4. To provide students with practical experience in managing a project, including planning timelines, defining deliverables, prioritizing tasks, managing resources, and dealing with obstacles to keep projects on track.
5. To reinforce the importance of testing and debugging by having students ensure their project works as intended, meets the required specifications, and passes quality assurance checks.
6. To prepare students to communicate technical and non-technical information clearly and effectively to different stakeholders, including clients, peers, and supervisors.

7. To help students build a comprehensive project portfolio, showcasing their capabilities and demonstrating their readiness for employment in their field by creating deliverables that reflect industry standards.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Students will be able to apply concepts, theories, and skills learned in their coursework to real-world scenarios, delivering a functional project that addresses actual industry needs or problems.

CO2. Students will be able to identify complex problems in a project, analyze root causes, and implement effective solutions using critical thinking and problem-solving methodologies.

CO3. Students will be able to work effectively as part of a team, collaborating with peers, clients, and stakeholders to achieve project goals, and managing interpersonal dynamics within a professional setting.

CO4. Students will develop professional communication skills, enabling them to effectively present ideas, progress, and results to clients, team members, and stakeholders in both technical and non-technical language.

CO5. Students will be able to produce high-quality, well-tested, and efficient project deliverables, ensuring that the project meets specified requirements and performs as expected under real-world conditions.

CO6. Students will demonstrate an understanding of professional ethics and legal standards, ensuring their work complies with industry regulations, protects user data, and respects intellectual property.

CO7. Students will develop a comprehensive portfolio that showcases the work completed during the field project, demonstrating their technical skills, problem-solving abilities, and project management expertise to future employers.

Categorization of chapters

Chapter-1: Chapter-1 should be titled "INTRODUCTION TO THE PROJECT". It should include the objectives, importance and applicability, scope, relevance etc. of the proposed work. This may also include the work plan and the implementation part.

Chapter-2 or more: Chapter-2 or more chapters can be on the work done by the student during their Summer Training period and achievement of objectives. Each Chapter must be given appropriate title. The tables, figures, schemes etc. should appear in the report as and where they are required with proper labelling.

Final Chapter: The final chapter should be titled as "CONCLUSION". This chapter may include the summary of the findings and key observations during the Summer Training to attain the objectives mentioned in Chapter-1.This chapter should also discuss the future scope and applicability of the outcome of the Summer Training.

Instructions for the Formatting Project Report:

- The report should be prepared on A4 size letter paper.
- The font type should be Times New Roman. The font size should be 14 for headings and 12 for normal text.
- All the headings and subheadings should be in bold and all the other matters should be normal.
- The text should be justified throughout the report except for headings for figures, tables, schemes etc.
- The line spacing should be fixed at 1.5 for the entire report.
- The page numbers should be mentioned at bottom middle position.
- The top, bottom and right margins should be 1" each whereas the left margins should be set at 2.5".
- The chapters should be numbered as Chapter-1, Chapter-2, etc. whereas figures, charts, tables etc. should be numbered as 1.1, 2.1 etc. For example, figure 1.1 corresponds to first figure in chapter-1.
- The report should be minimum of 40 pages and maximum of 60 pages.

Mapping of Program Outcomes with Course Outcomes

Course Outcomes	Programme Outcomes (POs)						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2		3		3			
CO3							
CO4		2					
CO5					3		
CO6				1		3	
CO7			1		2		1

Weightage: 1= weak or low relation, 2= moderate or partial relation, 3= strong or direct relation

Justification for the mapping

PO1 Disciplinary Knowledge

CO1. Students will be able to apply concepts, theories, and skills learned in their coursework to real-world scenarios, delivering a functional project that addresses actual industry needs or problems.

PO2 Critical Thinking and Problem solving

CO2. Students will be able to identify complex problems in a project, analyze root causes, and implement effective solutions using critical thinking and problem-solving methodologies.

CO4. Students will develop professional communication skills, enabling them to effectively present ideas, progress, and results to clients, team members, and stakeholders in both technical and non-technical language.

PO3 Social Competence Exhibit thoughts and ideas effectively in writing and orally

CO7. Students will develop a comprehensive portfolio that showcases the work completed during the field project, demonstrating their technical skills, problem-solving abilities, and project management expertise to future employers.

PO4 Research-Related Skills

CO2. Students will be able to identify complex problems in a project, analyze root causes, and implement effective solutions using critical thinking and problem-solving methodologies.

CO6. Students will demonstrate an understanding of professional ethics and legal standards, ensuring their work complies with industry regulations, protects user data, and respects intellectual property.

PO5 Personal and Professional competence

CO5. Students will be able to produce high-quality, well-tested, and efficient project deliverables, ensuring that the project meets specified requirements and performs as expected under real-world conditions.

CO7. Students will develop a comprehensive portfolio that showcases the work completed during the field project, demonstrating their technical skills, problem-solving abilities, and project management expertise to future employers.

PO6 Effective Citizenship and Ethics

CO6. Students will demonstrate an understanding of professional ethics and legal standards, ensuring their work complies with industry regulations, protects user data, and respects intellectual property.

PO7 Environment and Sustainability

CO7. Students will develop a comprehensive portfolio that showcases the work completed during the field project, demonstrating their technical skills, problem-solving abilities, and project management expertise to future employers.