Course Details

"Advanced Excel and Data Analysis"

Objectives of the Course:

- 1. To Develop Proficiency in Advanced Excel Functions
- 2. To Enhance Data Visualization and Reporting Skills
- 3. To Enable Data-Driven Decision-Making
- 4. To Introduce Basic VBA Programming for Automation:

Course Outcomes:

After Completion of this course Student can get acquainted with:

- 1. Enhanced Employability
- 2. Data-Driven Decision-Making
- 3. Efficiency and Productivity
- 4. Foundation for Further Learning
- 5. Global Job Opportunities

Course Syllabus

Unit 1: Fundamentals of Excel for Data Analysis

- Introduction to advanced Excel features and functions
- Data manipulation techniques
- · Data validation and conditional formatting

Unit 2: Advanced Excel Functions

- VLOOKUP, HLOOKUP, and INDEX-MATCH functions
- · Array formulas and advanced logical functions
- · Text and date functions for data transformation

Unit 3: Data Visualization and Reporting

- Creating and customizing charts and graphs
- Pivot tables for data summarization
- · Data visualization best practices

Unit 4: Data Analysis and Scenario Modelling

- What-if analysis with data tables and Scenario Manager
- · Regression analysis and statistical tools in Excel



· Sensitivity analysis for decision-making

Unit 5: Data Automation with VBA

- Introduction to Visual Basic for Applications (VBA)
- · Creating macros to automate repetitive tasks
- · Custom functions and user-defined functions in VBA

Unit 6: Advanced Data Cleaning and Power Tools

- · Advanced data cleaning techniques
- Introduction to Power Query for data transformation
- · Power Pivot for building data models and analysis

Head,

Department of Commerce Tr. Patangrao Kadam Mahavidyalaya

Ramanandnagar (Burti)

Principa

Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course
Advanced Excel and Data Analysis
Notice

Date:-01/12/2022

All the faculty members of department kindly informed that departmental meeting will be held on 02/12/2022 at 11.30 am. In department staffroom, attend the same.

Chairman

Agenda:-

- 1. Discussion on the short term course
- 2. Discussion on course fee & Intake.
- 3. Discussion on notice to the students.
- 4. To prepare time table.
- 5. Distribution of Syllabus.

Member:-

- Prof. Smt. Pudale P. D.
- · Prof. B.D. Patil
- . Dr. A. S. Kamble
- · Miss. Jadhav Prajakta

Head,
Department of Commerce
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Ramanandnagar (Burli)



Principal

Dr. Patangrao Kanam Mahavidyalaya,

Ramanandnagar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course
Advanced Excel and Data Analysis

PROCEEDING OF MEETING

Date:-05/12/2022

Departmental meeting was held on 02/12/2022 at 11.30 am under the heading of Head of the department, all the members were present, main agenda of meeting was to discuss on the implementation of value added course for 1st year M.Com. students.

Committee has decided that 3 Month (45 Hrs. Theory and 45 Hrs. Practical) course entitled 'Advanced Excel and Data Analysis' will be introduced from 02/01/2023 to 30/04/2023. The governing of course committee is formed, this departmental committee will be run, govern and supervise the course. Besides this syllabus of course is finalized, work load distributed. Also the time table was prepared, Prof. B. D. Patil expressed vote of thanks and meeting is over.

- 1. Prof. Pudale P. D.
- 2. Prof. Patil B. D.
- 3. Dr. A. S. Kamble
- 4. Miss. Jadhav Prajkta



Head,
Head,
Bepartment of Commerce
Dr. Patangrao Kadam Mahavidyalaya
Ramamana Kadam Mahavidyalaya





Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce

Value Added Course

Advanced Excel and Data Analysis

Students Name List

Sr.No	Name Of The Students	Class
1	Miss. Jadhav Prajakta Dinkar	M.Com. I
2	Miss. Mohite Minal Vikas	M.Com. I
3	Miss. Shirote Revati Mahavir	M.Com. I
4	Miss Pawar Pratiksha Suresh	M.Com. I
5	Miss. Tirmare Anjali Prabhakar	M.Com. I
6	Miss. Nalawade Rutuja Sanjay	M.Com. I
7	Miss. Patil Maheshwari Sadashiv	M.Com. I
8	Miss. Budhe Pooja Dilip	M.Com. I
9	Mr. Pawar Mayur Sarjerao	M.Com. I
10	Mr. Patil Kiran Lalaso	M.Com. I



Head.

Tensartment of Commerce

Dr. Patangrao Kadam Mahavidyalaya

Ramanandnagar (Burti)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course
Advanced Excel and Data Analysis

Notice

Date:- 05/12/2022

All the students of 1st year Master of commerce who admitted for value added course are informed that 'Advanced Excel and Data Analysis' is starting from 02/01/2023 to 30/04/2023, kindly notice that attendance is compulsory for course.

Time table of Theory and practical of this course will be displayed on notice board.

Head,
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Principal

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Ramanandnagar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course

Advanced Excel and Data Analysis

Syllabus

Name of Course: Advanced Excel and Data Analysis
Total Credits 6:1 Credit-15 Hours of Theory and 1 Credit=15 Hours of Practical

Course objectives:

- 1. To Develop Proficiency in Advanced Excel Functions
- 2. To Enhance Data Visualization and Reporting Skills
- 3. To Enable Data-Driven Decision-Making
- 4. To Introduce Basic VBA Programming for Automation

Examination Pattern

Theory Syllabus (45 Hrs.=3 Credits)

Practical (45 Hrs. 3 Credits)

Course Outcomes:

After Completion of this course Student can get acquainted with:

- 1. Enhanced Employability
- 2. Data-Driven Decision-Making
- 3. Efficiency and Productivity
- 4. Foundation for Further Learning
- 5. Global Job Opportunities

Course Syllabus

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· Data validation and conditional formatting

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- · What-if analysis with data tables and Scenario Manager
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- · Sensitivity analysis for decision-making

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- · Creating macros to automate repetitive tasks
- · Custom functions and user-defined functions in VBA

Unit 6: Advanced Data Cleaning and Power Tools

- · Advanced data cleaning techniques
- · Introduction to Power Query for data transformation
- · Power Pivot for building data models and analysis

Practical's (45 Hours.)

Head,
Department of Commerce
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Ramanandnagar (Buril)

विस्तासिक करोग महासिक्शान

Principal

Dr. Patangrao Kadan, Mahavidyalaya,

Ramanandnagar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli)

Department of Commerce

Value Added Course

Advanced Excel and Data Analysis

Attendance

Lecture-: 2.00 to 3.00 pm



Sr.	Name of the Students	JAN 2023												
No		2	3	4	9	10	11	16	17	18	23	24	25	
1	Miss. Jadhav Prajakta Dinkar	BB	P02	PD	PD	PD	PD	P02	PO	PD	FD	12	PDP	DJadh
2	Miss. Mohite Minal Vikas	Lin	MILE	THIN	MIL	MAY	MA	MIN	MILE	DILIN	min	Min	min	
3	Miss. Shirote Revati Mahavir	Pel	REL	RUL	BON	Reid	Bud	Bon	RUS	ROW	ROLL	RUN	RILL	
4	Miss Pawar Pratiksha Suresh	88	BF	100	PSP	BR	PSP	PSP	PSB	Pal	PSP	BR	PSP	
5	Miss. Tirmare Anjali Prabhakar	Test	7	Tab	TOP	Tal	TH	THE	Jol.	Tal:	Tal	In.	Tal	
6	Miss. Nalawade Rutuja Sanjay	230	Sie	THE THE PERSON NAMED IN	CHANGE	Sen	3	STATE OF THE PARTY	35	THE STATE OF THE S	THE STATE OF THE S	THE STATE OF THE S	3	
7	Miss. Patil Maheshwari Sadashiv	Carter I	Rol	Ros	RESID	1	8000	1	1	BUS	Page 5	Dag.	Rees	
8	Miss. Budhe Pooja Dilip	PDB	PDIS	PDB	PBD	PDP	PDD	PDD	PDD	PDD	POO	PPS	POP	
9	Mr. Pawar Mayur Sarjerao	MULH	May	ment	may	may	Mery	Meny	may	May	Mary	may	May	
10	Mr. Patil Kiran Lalaso	PRE	PKL	RILL	陛	PUL	PLL	PH	DKF	PKL	PK	BKT	PKL	

Head,
Department of Commerce
Dr. Patangrao Kadam Mahavasanak
Ramanandnagar (Burk)



Principal
Dr. Patangrao Kadam Mahavidyalaya,
Ramanandnagar (Buril)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course

Advanced Excel and Data Analysis

Attendance

Lecture-: 2.00 to 3.00 pm

Sr.	Name of the Students	FEB-MARCH 2023												
No		1	6	7	8	13	14	15	20	27	1.	6	7	
1	Miss. Jadhav Prajakta Dinkar	PO	PD	PD}	PO)	PN	PA	PD)	PPY	POZ	PDI	APH	PO	PDpd
2	Miss. Mohite Minal Vikas	MIN	Min	Min	win	min	min	min	rin	MICH	min	TOWN	coin	
3	Miss. Shirote Revati Mahavir	Roya	Rond	Pont	BON	BUN	ROL	ROY	ROM	ROW	REY	RUS	Roul	
4	Miss Pawar Pratiksha Suresh	25	DX	AX	S	WX	04	QUA	D	23	43×	*	05	
5	Miss. Tirmare Anjali Prabhakar	234	*	NA NA	*	23/	13	St.	John Market	No.	No.	3	108	,
6	Miss. Nalawade Rutuja Sanjay	300	2333	237	JONE STATE	360	2	OST TO	3	3		3		*
7	Miss. Patil Maheshwari Sadashiv	Bos	Pros	Post	Pros	Book	Pools	Des	Ros	Pms	Pros	POS	PINS	
8	Miss. Budhe Pooja Dilip	PPD	PPB	PPL	PDD	299	PRP	POP	PRÞ	POO	PDD	PBP	PDB	
9	Mr. Pawar Mayur Sarjerao	Mury	Many	MON	muy	Muy	may	meny	may	my	Mon	may	may	
10	Mr. Patil Kiran Lalaso	PKI	PKL	PKL	PKL	PKL	PW	PUL	PKL	PKL	PILL	PKF	5KF	

Head,
Department of Commerce
Dr. Patangrao Kadam Mahavidyalaya.
Ramanandnagar (Surii)



Principal

Dr. Patangrao Kad Mahavidyalaya,
Ramanan (Gurii)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course

Advanced Excel and Data Analysis

Attendance

Lecture-: 2.00 to 3.00 pm

Sr.	Name of the Students				N	IAR	CH-A	PRI	L 202	23			
No	Name of the Students	13	14	15	20	27	28	3	4	5	17	18	26
1	Miss. Jadhav Prajakta Dinkar	B	PD	PA	PD	PD)	P	PD	PD	PD	的	POL	PD
2	Miss. Mohite Minal Vikas	Mid	Ties	MIN	rin	MIN	dia	min	rich	MILL	nin	Din	CURDA
3	Miss. Shirote Revati Mahavir	Rey	Rep	POL	ROLL	RON	RUL	BON	Red	ROL	BOF	Roal	Rest
4	Miss Pawar Pratiksha Suresh	268	*	26%	DX.	A)	200	D	48	268	000	Q87	self
5	Miss. Tirmare Anjali Prabhakar	No.	A SON	Not.	108	AND THE	No.	1 de	W.	100	No.	W W	TO ST
6	Miss. Nalawade Rutuja Sanjay	Caldia	Care A	C. Series	C SWEET	Quality .	O. S. L.	The last	See .	O THE STATE OF	a single	- SUS	138
7	Miss. Patil Maheshwari Sadashiv	Banes	Pyros	Pans	PHS	Pros	Pros	Pms	Pens	Page 1	PEDS.	Pms	Ams
8	Miss. Budhe Pooja Dilip	PDB	PDB	PDO	POR	PPB	PAD	mp.	PDD	PPB	PDB	PDB	PDB
9	Mr. Pawar Mayur Sarjerao	many	may	mont	Men	咖	my	may	my	mat	may	may	met
0	Mr. Patil Kiran Lalaso	BL	Pul	PUL	PUL	PUL	PKL	PUL	PKP	PKP	PUL	PKF	PLL

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Head,
Department of Commerce
Dr. Patangrao Kadam Mahavidyaiaya.
Ramanandnagar (Burti)



Principa

Dr. Patangrao Karia Mahavidyalaya, Ramana ar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) **Department of Commerce**



Value Added Course **Advanced Excel and Data Analysis**

Time Table

Time	Subject	Day	Sub. Teacher
2.00 to 3.00 pm	Unit 1, 2 and 3	Monday	P. D. Pudale
2.00 to 3.00 pm	Unit 4, 5 and 6	Tuesday	B. D. Patil
2.00 to 3.00 pm	Practical	Wednesday	Dr. A. S. Kamble

PDP: Smt. P. D. Pudale

BDP: Mr. B. D. Patil

ASK: Dr. A. S. Kamble

Head, Department of Commerce Dr. Patangrao Kadam Mahavidus Ranianandnagar *

Dr. Patangrao Ka Ramanandingar (Burli)

Jahavidyalaya,



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) **Department of Commerce**



Value Added Course **Advanced Excel and Data Analysis**

Course Report

The Department of commerce conducted value Added course for the year 2022-23 entitled Advanced Excel and Data Analysis. 10 students of first year M. Com. were enrolled for this course and completed course successfully. In this course all the necessary things which 6 units and 45 hours practical as well as 10 days training was conducted. Total 90 hours course was conducted which is covered from 2nd Jan 2023 to 30th April 2023.

Department of Commerce Dr. Patangrao Kadam Mahavid Ranianandnagar (Burti,



Principal

Dr. Patangrao Ka Ramanan (Burli)

havidyalaya,



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course
Advanced Excel and Data Analysis

Exam Notice

Student of Short Term Course "Advanced Excel and Data Analysis" are hereby informed that their examination will be conducted on 11th May,2023

Time table is as follows.

Exam: VAC-Advanced Excel and Data Analysis

Date: 11th May, 2023

Time: 11.00 am to 1.30 pm

Place: C 106

Head,
Department of Commerce
Dr. Patangrao Kadam Mahavidyalaya,
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Ramanandnagar (Burli)



Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli) Department of Commerce



Value Added Course
Advanced Excel and Data Analysis
Marks sheet

		Ma	Marks					
Sr.No	Student Name	Theory (out of 75)	Practical (out of 25)	Total	Result			
1	Miss. Jadhav Prajakta Dinkar	65	18	83	Pass			
2	Miss. Mohite Minal Vikas	62	17	79	Pass			
3	Miss. Shirote Revati Mahavir	59	18	77	Pass			
4	Miss Pawar Pratiksha Suresh	56	18	74	Pass			
5	Miss. Tirmare Anjali Prabhakar	56	18	74	Pass			
6	Miss. Nalawade Rutuja Sanjay	64	16	80	Pass			
7	Miss. Patil Maheshwari Sadashiv	61	15	76	Pass			
8	Miss. Budhe Pooja Dilip	65	18	83	Pass			
9	Mr. Pawar Mayur Sarjerao	61	17	78	Pass			
10	Mr. Patil Kiran Lalaso	61	15	76	Pass			

Head,
Department of Commerce
Dr. Patangrao Kadam Mahavidyalaya,
Ramanandnagar (Burii)



Principal

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Ramana Gragar (Burli)



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Value Added Course
Advanced Excel and Data Analysis

Course Outcome

Objective of the Course:

- 1. To Develop Proficiency in Advanced Excel Functions
- 2. To Enhance Data Visualization and Reporting Skills
- 3. To Enable Data-Driven Decision-Making
- 4. To Introduce Basic VBA Programming for Automation

a) Duration: 90 Hours

b) Eligibility: B.Com. Pass out

c) Intake: 10 Students

d) Course Fees: Rs. 200/- per student

e) Examination Pattern:

75 Marks: Theory Examination 25 Marks: Practical Examination

f) Outcome:

After Completion of this course Student can get acquainted with:

- 1. Enhanced Employability
- 2. Data-Driven Decision-Making
- 3. Efficiency and Productivity
- 4. Foundation for Further Learning
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Head,
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Ramanandnagar (Burli)



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Ramanandnagar (Burli)

Question Paper 100 Marks

Value Added Course

Advanced Excel and Data Analysis

Question Paper

Section A: MCQ and True False (20+5)

- a) Multiple Choice Questions
 - Choose the correct option for each of the following questions:
- 1. What is the primary purpose of Data Validation in Excel?
 - a) Creating charts and graphs
 - b) Restricting and controlling data entry
 - c) Automating repetitive tasks
 - d) Building data models

Answer: b) Restricting and controlling data entry

- 2. Which Excel function is used to search for a specific value in a vertical table (column) and return a corresponding value from another column?
 - a) IF Function
 - b) SUM Function
 - c) VLOOKUP Function
 - d) COUNT Function

Answer: c) VLOOKUP Function

- 3. What is the primary use of the Scenario Manager in Excel?
 - a) Creating custom functions
 - b) Automating repetitive tasks
 - c) Managing different scenarios within a model
 - d) Validating data entries

Answer: c) Managing different scenarios within a model

- 4. In Excel, what is VBA an abbreviation for?
 - a) Visual Business Application
 - b) Very Basic Algorithm
 - c) Visual Basic for Applications
 - d) Variable Business Analysis

Answer: c) Visual Basic for Applications

- 5. What is the primary purpose of the "M" formula language in Power Query?
 - a) Creating charts and graphs
 - b) Data transformation and manipulation
 - c) Generating custom functions
 - d) Building data models

Answer: b) Data transformation and manipulation

- 6. Which Excel function is used to extract a specific number of characters from the middle of a text string based on the starting position and length?
 - a) LEFT
 - b) RIGHT
 - c) MID
 - d) LEN

Answer: c) MID

- 7. Which Excel feature is used to create custom functions and automate repetitive tasks?
 - a) Data Validation
 - b) Power Pivot
 - c) Pivot Table
 - d) Visual Basic for Applications (VBA)

Answer: d) Visual Basic for Applications (VBA)

- 8. What is the purpose of Power Pivot in Excel?
 - a) Data validation and cleaning
 - b) Data summarization with pivot tables
 - c) Building data models and performing analysis
 - d) Creating custom charts and graphs

Answer: c) Building data models and performing analysis

- 9. Which Excel tool is particularly useful for handling date-related data and performing time intelligence functions?
 - a) Scenario Manager
 - b) Pivot Table
 - c) Power Query
 - d) Power Pivot

Answer: d) Power Pivot

- 10. What is the significance of regular expressions in text cleaning and transformation?
 - a) They are used to create custom functions in Excel.
 - b) They provide an interface for setting up data validation rules.
 - c) They allow for advanced text manipulation and pattern matching.
 - d) They automate the process of creating pivot tables.

Answer: c) They allow for advanced text manipulation and pattern matching.



b) True/False Questions

 True or False: Data Validation in Excel allows you to restrict and control the type and format of data that can be entered into a cell or range of cells.

Answer: True

True or False: VLOOKUP is used to search for a specific value in a horizontal table (row) and return a corresponding value from another row.

Answer: False (VLOOKUP is used for vertical tables/columns)

True or False: The Scenario Manager in Excel is a tool for creating custom functions and automating repetitive tasks.

Answer: False (The Scenario Manager is used for managing different scenarios within a model)

4. True or False: Power Query is a tool for data transformation and manipulation, particularly suitable for larger datasets, and uses the "M" formula language.

Answer: True

5. True or False: Regular expressions are used to create pivot tables in Excel.

Answer: False (Regular expressions are used for text manipulation and pattern matching, not for creating pivot tables)

Section B: Long Answer Questions (25 Marks)

Answer the following questions in detail:

- Explain the process of creating a pivot table in Excel. Provide step-by-step instructions, and mention its advantages in data summarization.
- Discuss the importance of conditional formatting in data visualization. Provide examples of scenarios where conditional formatting can be effectively used.
- Describe the role of the INDEX-MATCH combination in Excel. Provide an example of a real-life application where this combination is beneficial.
- 4. What are the key principles of data storytelling, and how do they enhance data visualization and reporting?
- 5. In Excel, explain the concept of Monte Carlo Simulation. How can it be applied in financial modeling?

Section C: Short Notes (25 Marks)

Answer any five of the following in brief (each question is worth 5 marks):

- 1. Explain the purpose of the HLOOKUP function in Excel.
- 2. How can data tables be used for sensitivity analysis in Excel?



- 3. Define "Data Validation" and its role in Excel data management.
- 4. What is the significance of Power Query in data transformation?
- 5. Briefly explain the purpose of the VBA Editor in Excel.
- 6. Describe the role of regular expressions in text cleaning and transformation.
- 7. How can Power Pivot be used for time intelligence in data modelling?
- 8. What are the benefits of using custom functions (User-Defined Functions) in Excel?

Section D: Practical Questions (25 Marks)

Answer any two of the following practical questions:

- Using Excel, create a pivot table that summarizes the sales data for a fictional company. Include rows for product categories and columns for months. Calculate the total sales for each combination of category and month.
- Write a VBA macro that automates the process of extracting data from one worksheet and populating it into another. The data should be filtered to include only records where the sales are above a specified threshold.
- Create a custom function (User-Defined Function) in Excel using VBA that calculates the average of a range of numbers, excluding any outliers. Test the function on a sample dataset.
- 4. In Excel, use Power Query to import data from an external CSV file and perform the following transformations: remove duplicates, split a text column into multiple columns, and create a pivot table summarizing the transformed data.

