

MSPM's
Deogiri Institute of Technology and Management Studies,
Chhatrapati Sambhajinagar



Add – On Course

BCS Department

Research Methodology

Course Coordinator

Mr. Pratik Jaiswal

Research Methodology

Course Objectives

- To understand the fundamental steps of the research process in IT and CS.
- To learn how to conduct a literature review using digital libraries.
- To gain hands-on experience in technical writing and data visualization.



Unit 1: Foundations of CS Research (5 Hours)

This unit covers how to identify a problem in the fast-evolving tech landscape.



- **Introduction to Research:** Meaning, objectives, and types of research (*Basic vs. Applied*)
- **The Research Process:** From problem identification to hypothesis formulation
- **Literature Review:** Searching IEEE Xplore, ACM Digital Library, and Google Scholar
- **Defining the Problem:** Identifying gaps in existing software, algorithms, or systems
- **Ethics in Research:** Avoiding plagiarism (Turnitin/Urkund) and the role of Open Source

Unit 2: Research Design & Data Modeling (5 Hours)

- **Research Design:** Exploratory, Descriptive, and Experimental designs in CS
- **Data Collection:** Primary vs. Secondary data; using APIs, datasets (Kaggle), and web scraping
- **Sampling Techniques:** Probability and Non-probability sampling for user studies
- **Tools for Data Analysis:** Brief introduction to Python (Pandas/Matplotlib) or R for analyzing results.
- **Testing Hypotheses:** Understanding "Proof of Concept" in software development



Evaluation Scheme



Assessment Component	Task	Weightage
Continuous Assessment	Literature Review of 5 papers in a chosen domain.	30%
Practical Assignment	Creating a research proposal or a LaTeX document.	30%
Final Project	A mini-research paper or poster presentation.	40%

Research Methodology

Goal of the Course



To equip students with essential skills to conduct effective research, analyze findings, and present results in the field of Information Technology and Computer Science.



Course Objectives

Course Objectives

- To understand the fundamental steps of the research process in IT and CS.
- To learn how to conduct a literature review using digital libraries.
- To gain hands-on experience in technical writing and data visualization.

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Chh. Sambhajinagar

Academic Year -2025-26

Date: 01/01/2026

Notice

It is hereby informed to all BCS II-year students that BCS Department of DITMS is going to launch 60 hours certificate course of "Certificate Course in Research Methodology" from 05/01/2026 to 09/02/2026. Only 60 seats are available, Students have to pre-register it to consult teachers.

Contact Person : Mr. Pratik S. Jaiswal

Mobile No. : 8888069288

Email ID : pratikjaiswal35@gmail.com

Note:

1. Seats will be filled on first come first serve basis.
2. Certificate will be given to only those students who will attend the complete course.
3. Course Fees: Free of Cost

Please be benefitted with this 'Golden opportunity' introduced by the DITMS.



HoD

Pratik S. Jaiswal
Programme Coordinator
DITMS Chh. Sambhajinagar



Director

Dr. R.R. Gaikwad

DIRECTOR

DEOGIRI INSTITUTE OF TECHNOLOGY &
MANAGEMENT STUDIES CHH. SAMBHAJINAGAR



Course Coordinator

Mr. Pratik Jaiswal

Proposal for Add-on Course: Research Methodology

Title of the Course: Research Methodology (Add-on Course)

Introduction

In the modern academic and professional environment, research skills are essential for students in Computer Science and Information Technology. The proposed add-on course "Research Methodology" aims to equip students with the fundamental knowledge and practical skills required to conduct systematic research, analyze data, and present findings effectively. This course will enhance students' analytical thinking, problem-solving abilities, and technical writing skills.

Need for the Course

- To develop research aptitude among undergraduate students
- To prepare students for higher studies (M.Sc., MCA, Ph.D.)
- To improve technical writing and documentation skills
- To enable students to publish research papers and participate in conferences
- To bridge the gap between theoretical knowledge and practical research work

Fees Structure: Free

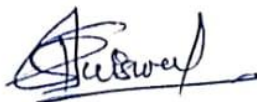
Number of Students: 60

Name of Faculty responsible for the proposed new course: Mr. Pratik Jaiswal

Date : 25/12/2025


Programme Coordinator
DITMS Chh. Sambhajinagar


DIRECTOR
DEOGIRI INSTITUTE OF TECHNOLOGY &
MANAGEMENT STUDIES CHH. SAMBHAJINAGAR



Course Title: Research Methodology

Nature: Add on Short Term Course

Number of Students: 60

Fees: Free

Course Outcomes

After successful completion of this course, students will be able to:

1. CO1: Understand the fundamental concepts, types, and processes of research in Information Technology and Computer Science.
2. CO2: Identify research problems and formulate clear objectives and hypotheses based on gaps in existing literature.
3. CO3: Perform effective literature reviews using digital libraries such as IEEE, ACM, and Google Scholar.
4. CO4: Design appropriate research methodologies and select suitable data collection and sampling techniques.
5. CO5: Apply basic tools (Python/R) for data analysis and interpret research results effectively.
6. CO6: Demonstrate ethical research practices, including proper citation, referencing, and avoiding plagiarism.
7. CO7: Prepare structured research documents using standard formats (APA, IEEE) and tools like LaTeX/Overleaf.
8. CO8: Present research findings clearly using visualizations, reports, and oral presentations.

Course Objectives

- To understand the fundamental steps of the research process in IT and CS.
- To learn how to conduct a literature review using digital libraries.
- To gain hands-on experience in technical writing and data visualization.

Resources Requirement:

Class Room: - Class Room No.6 With Digital

Trainer: - Mr. Pratik S. Jaiswal

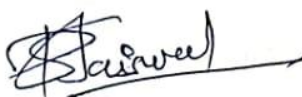


Programme Coordinator
DITMS Chh. Sambhajinagar



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Syllabus

Unit 1: Foundations of CS Research (10 Hours)

This unit covers how to identify a problem in the fast-evolving tech landscape.

- **Introduction to Research:** Meaning, objectives, and types of research (Basic vs. Applied).
- **The Research Process:** From problem identification to hypothesis formulation.
- **Literature Review:** Searching IEEE Xplore, ACM Digital Library, and Google Scholar.
- **Defining the Problem:** Identifying gaps in existing software, algorithms, or systems.
- **Ethics in Research:** Avoiding plagiarism (Turnitin/Urkund) and the role of Open Source.

Unit 2: Research Design & Data Modeling (10 Hours)

- **Research Design:** Exploratory, Descriptive, and Experimental designs in CS.
- **Data Collection:** Primary vs. Secondary data; using APIs, datasets (Kaggle), and web scraping.
- **Sampling Techniques:** Probability and Non-probability sampling for user studies.
- **Tools for Data Analysis:** Brief introduction to Python (Pandas/Matplotlib) or R for analyzing results.
- **Testing Hypotheses:** Understanding "Proof of Concept" in software development.

Unit 3: Technical Writing & Presentation (10 Hours)

- **Structure of a Research Paper:** Abstract, Introduction, Methodology, Results, and Conclusion.
- **Referencing Styles:** APA, IEEE, and MLA formats; using Reference Managers (Mendeley/Zotero).
- **LaTeX Basics:** Introduction to Overleaf for writing professional technical papers.
- **Effective Presentation:** Visualizing data through charts and system architecture diagrams.
- **Publication Avenues:** Difference between Journals (Scopus/UGC Care) and Conferences.

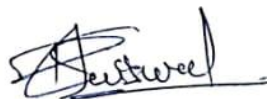
Evaluation Scheme

Assessment Component	Task	Weightage
Continuous Assessment	Literature Review of 5 papers in a chosen domain.	30%
Practical Assignment	Creating a research proposal or a LaTeX document.	30%
Final Project	A mini-research paper or poster presentation.	40%

Recommended Resources

- **Books:** *Research Methodology: Methods and Techniques* by C.R. Kothari.
- **Digital Tools:** Overleaf (LaTeX), Google Scholar, Kaggle (for datasets), Mendeley.
- **Journals:** IEEE Transactions, Springer Computer Science.


Programme Coordinator
DITMS Chh. Sambhajinagar.




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DEOGIRI INSTITUTE OF TECHNOLOGY &
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Deogiri Institute of Technology and Management Studies,

Chh. Sambhajiagar

List of Students Enrolled for the Add-on Course: Research Methodology

Sr. No.	Name of the Student	Class
1	Pratiksha Kanadje	BCS – SY
2	Samiksha Patil	BCS – SY
3	Dhanashri Lokhande	BCS – SY
4	Komal Ugale	BCS – SY
5	Nutan kankal	BCS – SY
6	Pallavi Barwal	BCS – SY
7	Vaishnavi Thorat	BCS – SY
8	Gunjan Yendole	BCS – SY
9	Shrushti Anadrao	BCS – SY
10	Arpita Dhage	BCS – SY
11	Samiksha More	BCS – SY
12	Sara pathan	BCS – SY
13	Vijaya Rothe	BCS – SY
14	Varsha Jadhav	BCS – SY
15	Supriya Bodkhe	BCS – SY
16	Asmita Pawar	BCS – SY
17	Tanuja Kharad	BCS – SY
18	Anajana Gawali	BCS – SY
19	Pranali Kharad	BCS – SY
20	Bhavna Kotambe	BCS – SY
21	Sharaddha Kotambe	BCS – SY
22	Bhakti Ghunawat	BCS – SY
23	Pallavi Surase	BCS – SY
24	More Priyanka	BCS – SY
25	Sharavni Chavan	BCS – SY
26	Aishwarya Chavan	BCS – SY
27	Pooja Gulve	BCS – SY
28	Pooja Pattiwale	BCS – SY
29	Shradhha Pawar	BCS – SY
30	Sakshi Devkar	BCS – SY
31	Dipali Thorat	BCS – SY
32	Yugank Sharma	BCS – SY
33	Aditya Chavan	BCS – SY

34	Yash Ahire	BCS – SY
35	Sanathkumar Jadhav	BCS – SY
36	Tushar Mate	BCS – SY
37	Nachiket Mahalkar	BCS – SY
38	Kamlesh Mhaske	BCS – SY
39	Manoj Pawar	BCS – SY
40	Shubham Pawar	BCS – SY
41	Tanush Rathod	BCS – SY
42	Dhananjay Aghade	BCS – SY
43	Rajesh Murkute	BCS – SY
44	Aniket Parde	BCS – SY
45	Devendra Khare	BCS – SY
46	Ajay Bhagure	BCS – SY
47	Ajay Magre	BCS – SY
48	Durgesh Yadav	BCS – SY
49	Shreyash Bodhkhe	BCS – SY
50	Harshali Bodkhe	BCS – SY
51	Aniket Dhopte	BCS – SY


Programme Coordinator
DITMS Chh. Sambhajinagar


DIRECTOR
DEOGIRI INSTITUTE OF TECHNOLOGY &
MANAGEMENT STUDIES CHH. SAMBHAJINAGAR



MSPM's
**Deogiri Institute of Technology and Management Studies, Chh.
sambhajinagar.**

Deogiri College Campus Railway Station Road, Chh. Sambhajinager

Ph.No.(0240) 2353701

Email:mspmditms@gmail.com

Web: www.ditms.org

Add-on Course
Registration Form



Registration No.: _____

Course applied for: Research methodology

Name in block letters) SHREYAS SANTOSH BODKHE

Date of Birth: 28/04/2006 Age: 19 Years

Marital Status: unmarried.

Category: General SC/ST OBC(Certificate to be attached)

Name of Father: Santosh Bodkhe

Name of Mother: Archana Bodkhe

Educational Qualifications:

Sr.No.	Name of School/College/Board	Exam Year	Main Subjects	% Marks
1	10th Rmv High school Debhgaon	2022		86%
2	12th Rmv Jaitapur	2024	Science.	74%
3	Second year IV (DITMS)	2026	Bcs.	8.55

Address for correspondence with telephone no

Address /House No. Kakanwadi chh Sambhajinagar

Village Sambhajinagar Tahsil Sambhajinagar P.O. Sambhajinagar

Dist chh sambhajinagar P.Stn Vedant nagar City chh sambhajinagar

PIN State Telephone No:

Mobile No:(Candidate) 9529280272 (Guardian) 9890611892

E-Mail Address shreyasbodkhe14@gmail.com

Signature: Shreyas@

Name: Shreyas santosh Bodkhe.

Date: 2/1/2026

MSPM's

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sambhajinagar.

Deogiri College Campus Railway Station Road, Chh. Sambhajinager

Ph.No.(0240) 2353701

Web: www.ditms.org

Email:mSPMDITMS@gmail.com

Add-on Course

Registration Form



Registration No.: _____

Course applied for: Research Methodology

Name in block letters) DURGESH NADESHWAR YADAV

Date of Birth: 19-5-2006 Age: 19 Years

Marital Status: unmarried

Category: General SC/ST OBC(Certificate to be attached)

Name of Father: Nadeswar Yadav

Name of Mother: Madhuri Yadav

Educational Qualifications:

Sr.No.	Name of School/College/Board	Exam Year	Main Subjects	% Marks
1	10 th AGP Public School	2022		69%
2	12 th Deogiri College	2024	Science	72%
3	Second Year IV (DITMS)	2026	BCS	8.18

Address for correspondence with telephone no

Address /House No. Wadgaon Kolhadi Shivaji Nagar

Village Sambhaji Nagar Tahsil Sambhaji Nagar P.O. Sambhaji Nagar

Dist Chh. Sambhaji Nagar P.Stn Thabara Pindap City Sambhaji Nagar

PIN State Telephone No: _____ chowk

Mobile No:(Candidate) 9769126405 (Guardian) 9699817544

E-Mail Address Dp105632@gmail.com

Signature: Yadav

Name: Durgesh Nadeswar Yadav

Date: 17-4-2026

MSPM's
Deogiri Institute of Technology and Management Studies, Chh.
sambhajinagar.

Deogiri College Campus Railway Station Road, Chh. Sambhajinager

Ph.No.(0240) 2353701

Web: www.ditms.org

Email:mspmditms@gmail.com

Add-on Course
Registration Form



Registration No.: _____

Course applied for: Research Methodology

Name in block letters) Asmita Namdev Pawar

Date of Birth: 14/12/2005 Age: 20 Years Marital Status: unmarried

Category: General SC/ST OBC(Certificate to be attached)

Name of Father: Namdev Pawar

Name of Mother: Pallavi Pawar

Educational Qualifications:

Sr.No.	Name of School/College/Board	Exam Year	Main Subjects	% Marks
1	^{10th} Jaihind School	2022		88%
2	12 th Jaihind junior collage	2024	science	71%
3	second yrs (DITMS)	2026	BCS	8.85

Address for correspondence with telephone no

Address /House No. Cambridge, Chikalthan, Chh. Sambhajinagar

Village Chh. SN Tahsil Chh. SN P.O. Chh. SN

Dist Chh. SN P.Stn Chikalthan City Chh. SN

PIN State Telephone No:

Mobile No:(Candidate) 9665708673 (Guardian) 9673288673

E-Mail Address asmitap6666@gmail.com

Signature: Asmita

Name: Asmita Namdev Pawar

Date: 21/4/26

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Ph.No.(0240) 2353701

Web: www.ditms.org

Email:mspmditms@gmail.com

Add-on Course
Registration Form



Registration No.: _____

Course applied for: Research Methodology

Name in block letters) Devendra Kailas Khase

Date of Birth: 12/6/2004 Age: 21 Years

Marital Status: Unmarried

Category: General SC/ST OBC(Certificate to be attached)

Name of Father: Kailas Khase

Name of Mother: Mangal Khase

Educational Qualifications:

Sr.No.	Name of School/College/Board	Exam Year	Main Subjects	% Marks
1	^{10th} Arshankay School	2020		89%
2	^{12th} shivaji collage	2022	Science	64%
3	2 nd yr (DITMS)	2026	BCS	8.36

Address for correspondence with telephone no

Address /House No. bhokangav, kannad, chh: Sambhajinagar.

Village bhokangav Tahsil kannad P.O. kannad.

Dist Chh. GN P.Stn chikalthan City P. bh Sambhajin.

PIN State Telephone No:

Mobile No:(Candidate) 9875802129 (Guardian) 9588854469

E-Mail Address devkhase2629@gmail.com

Signature: [Signature]

Name: Devendra Khase

Date: 17/4/26

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Ph.No.(0240) 2353701

Web: www.ditms.org

Email:mspmmitms@gmail.com

Add-on Course
Registration Form



Registration No.: _____

Course applied for: Research Methodology

Name in block letters) Sanatkumar Ganesh Jadhav

Date of Birth: 21/08/2007 Age: 18 Years Marital Status: unMarried.

Category: General SC/ST OBC(Certificate to be attached)

Name of Father: Ganesh Jadhav

Name of Mother: Savita Jadhav

Educational Qualifications:

Sr.No.	Name of School/College/Board	Exam Year	Main Subjects	% Marks
1	10th Swatantraaer Savarkar vidyalay	2022		86%
2	12th Dashrababa highschool	2024	Science.	79%
3	Second year IV (DITMS)	2026	BCS	8.45

Address for correspondence with telephone no

Address/House No. Kokanwadi chh. sambhajinagar.

Village Sambhajinagar Tahsil Sambhajinagar P.O. Sambhajinagar

Dist Chh. Sambhajinagar P.Stn Vedant nagar City Chh. sambhajinagar

PIN State Telephone No:

Mobile No:(Candidate) 8788133191 (Guardian) 9404221237

E-Mail Address jadhavsanatkumar952@gmail.com.

Signature: [Signature]

Name: Sanatkumar ganesh Jadhav

Date: 2/1/2026



MSPM's
Deogiri Institute of Technology And Management Studies,
Chh. Sambhaji Nagar

CERTIFICATE OF COMPLETION

This is presented to :

Sanathkumar Jadhav

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator

3256



MSPM's
Deogiri Institute of Technology And Management Studies,
Chh. Sambhaji Nagar

CERTIFICATE OF COMPLETION

This is presented to :

Shreyas Bodkhe

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator



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Deogiri Institute of Technology And Management Studies,
Chh. Sambhaji Nagar

CERTIFICATE OF COMPLETION

This is presented to :

Durgesh Yadav

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator



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Chh. Sambhaji Nagar

CERTIFICATE OF COMPLETION

This is presented to :

Asmita Pawar

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator



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Deogiri Institute of Technology And Management Studies,
Chh. Sambhaji Nagar

CERTIFICATE OF COMPLETION

This is presented to :

Devendra Khare

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator



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CERTIFICATE OF COMPLETION

This is presented to :

Supriya Bodkhe

Successfully completed a one month Research Methodology course at
DITMS from January to February 2026.

Dr. R.R Gaikwad
Director

Mr. Pratik Jaiswal
Course Coordinator

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10	Arpita Dhage	BCS – SY
11	Samiksha More	BCS – SY
12	Sara pathan	BCS – SY
13	Vijaya Rothe	BCS – SY
14	Varsha Jadhav	BCS – SY
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18	Anajana Gawali	BCS – SY
19	Pranali Kharad	BCS – SY
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23	Pallavi Surase	BCS – SY
24	More Priyanka	BCS – SY
25	Sharavni Chavan	BCS – SY
26	Aishwarya Chavan	BCS – SY
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44	Aniket Parde	BCS – SY
45	Devendra Khare	BCS – SY
46	Ajay Bhagure	BCS – SY
47	Ajay Magre	BCS – SY
48	Durgesh Yadav	BCS – SY
49	Shreyash Bodhkhe	BCS – SY
50	Harshali Bodkhe	BCS – SY
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