MIT | Arts, Commerce & Science College

Research and Development Manual

2021-2022

Table of Content

1. Introduction

The vision of MAEER's MIT Arts, Commerce and Science College is to strive for excellence in education and research. The college consistently works to create research culture among the teachers and students. Research is an original contribution to the existing stock of knowledge making for its advancement. It is a pursuit for the truth with the help of study, observation, comparison, experiment, collection of facts or data, analysis of the facts to reach certain conclusions either in the form of solution(s) towards the concerned problem or in certain generalizations for some theoretical formulation. In short, the search for knowledge through objective and systematic method of finding solution to a problem is research.
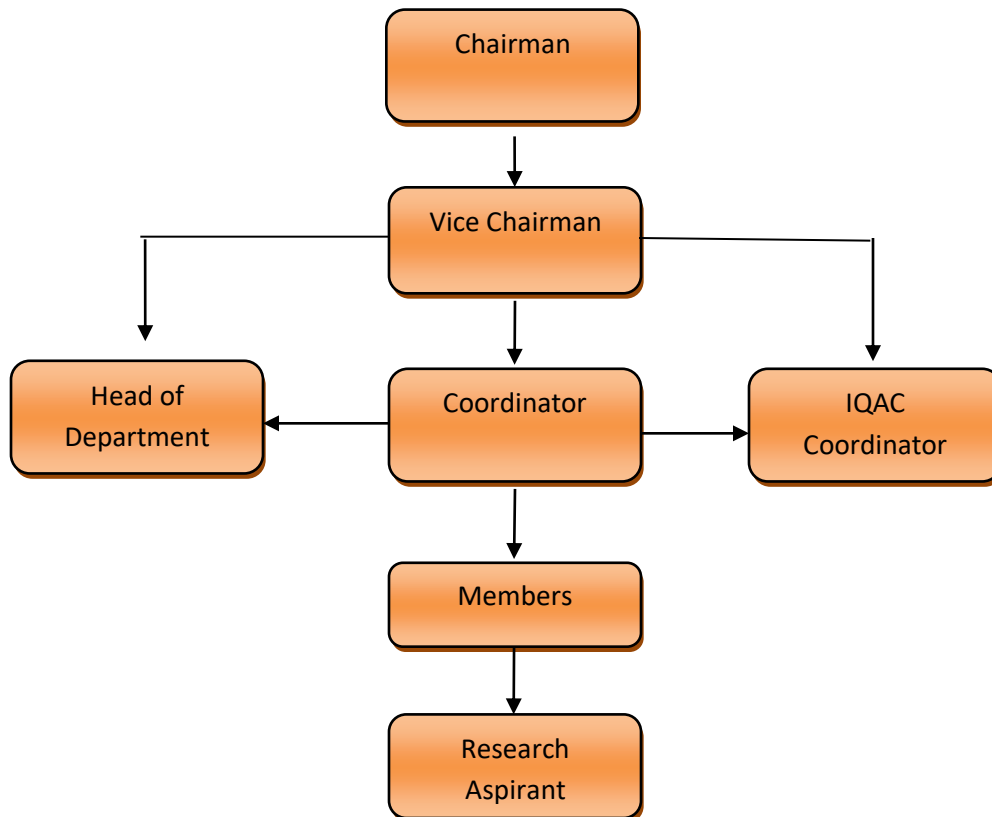

Research essentially nourishes the academic program. Engagement in research helps teachers to remain at the cutting edge, with advances in their subjects. It also sustains the interest in academic activities and widens the scope of learning. Importantly, it helps the college to stand at the global level. With this view, this Research Manual has been designed. College Research Manual is a source of information about the college research and development policies. The aim of the research manual is to seed, grow and facilitate research culture to stimulate faculty and students' creative and innovative thoughts through collaborations with research experts

Research Manual has 5 units. First unit (chapter 1) of this manual describes the introduction part related to research. Second unit (chapter 2) of this manual describes about Research and Development Cell structure, Aim objectives and role of members. The third unit (chapter 3) deals with research and development policies like Reimbursement Policy, Funded Projects, Seed Money Policy, & Student research. The fourth section (Chapter 4) explains the code and ethics in academic research and publications like Integrity & Honesty, Fairness & Justice, sense of responsibility and Plagiarism. The last unit (chapter 5) provides research formats and list of funding agencies.

2. Research and Development Cell (R & D Cell)

R & D Cell oversees the smooth and efficient coordination of research and development activities in the college, fostering overall growth.

2.1 Structure

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                    │   Chairman   │
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                  ┌─────────────────┐
          ┌───────│  Vice Chairman  │───────┐
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 │   Head of    │◄─│  Coordinator │─►│     IQAC     │
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                  │   Research   │
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- Chairman: Principal of the college heads the cell in the capacity of Chairman.
- Vice Chairman: Vice Principal of the college functions as the vice chairman.
- Co-coordinator: Principal, Vice Principal and Head of the departments appoint Co-ordinator from the faculties.
- Members: One faculty from each department has been appointed as a member of R & D Cell by the heads of respective departments in association with Vice Principal and Principal.
- Research Aspirants: Research aspirants are all those who are involved in research activities.

This hierarchical structure is followed in all types of research work.

2.2 Aim and Objectives

Aim

- To build research acquaintance amongst the research scholar.
- To establish links with different sectors like Industry, research and development organizations and universities which provide support for research activities.
- To motivate and take efforts to develop research centre in the college.

Objectives

- To engross research scholar in research and development activities such as the acquisition of Ph.D. degree, writing research proposal and research paper etc.
- To have productive collaboration and interaction for the long-term association with research and development organizations, this will give benefit to the research scholar.
- To develop research awareness by conducting events such as national and international conferences, workshops, symposia and guest lectures on research methodology and patents.

2.3 Role of R & D Cell members

- To encourage and motivate research scholar to get engaged with externally funded research and development, interdisciplinary and multidisciplinary research, product design and development, publications in journals of high standing.
- To facilitate discussions and collaborations with researchers from other colleges, with the possibility of joint work in various thrust areas of national and international importance.
- To initiate and promote MoU with industries and research and development organizations for consultancy, collaborative research, sponsored projects and industry college interactions.
- To arrange talks and interactions by eminent personalities from industry, research and development organizations and institutions of repute for the better understanding of research methodology and practices that are currently followed.
- To support research scholar to deliver talks at different events and to conduct workshops, training programs, seminars, conferences, symposiums, faculty development programs.
- To recommend peer reviewed national and international journals for the subscription.
- To formulate the research and development budget of department in close co-operation with the research scholar and the head of department.
- To keep everyone abreast of announcements by various funding agencies namely DST, DAE, DRDO, ISRO, CSIR, UGC, SPPU, BCUD and the like.
- To motivate students to present research papers in National and International conferences and to participate in research projects competitions and exhibitions.
- To attend and discuss the progress of research and development in the periodic meeting.
- To collect research data from the departments and then prepare final sheet of research data at the college level.
- Research co-ordinator must regularly and diligently update the research and development information on the college website.

3. Research &Development Policy

3.1 Reimbursement Policy for Publications

- Research and in-depth review papers shall be submitted to University Grant Commission (UGC) Care list /Scopus/Web of Science journals for possible publication.
- One can apply to funding agencies for publication charges of his/ her research papers.
- Funded projects can cover a part of the publication charges of research papers.
- For reimbursement "MAEER's MIT Arts, Commerce and Science College, Alandi" name should appear in the published paper.
- Publication charges (if any) of the research papers published by research scholar, will be reimbursed by the college as per reimbursement policy.
- Reimbursement of 60% of publication charges for papers published in the journal indexed only by Scopus, SCI and Web of Science.
- Reimbursement of publication charges for paper published in UGC Care listed journal (Other than Scopus, SCI and Web of Science)
  - Up to Rs. 2000   **:**   80% of registration fee
  - Rs. 2000 to Rs. 5000   **:**   70% of registration fee
  - Rs. 5000 onwards   **:**   50% of registration fee

3.2 Conferences/ Workshops/Symposium

R & D Cell encourages research aspirants to participate in research activities and to publish genuine research work in reputed conferences and journals. They are promoted to attend conferences, workshops, and symposium and financial support is provided for the registration fee as per the requirement.

3.3 Funded Projects

The depth of research culture in any college is judged by the number of grants approved and funds generated via various projects. A large number of new research projects are initiated every year with funding from various national and international governmental organizations and industries. R&D Cell keeps the research aspirants, abreast of research project announcements and encourages them to submit proposals to the same. (Refer Appendix C for research schemes links)

a. Guidelines

All research aspirants who intend to apply for research projects and grants, and all those who have obtained approval for their projects from various apex bodies, industries and universities shall follow the work procedure given herewith.

- Every research proposal shall pass through a multi-tier review, where the proposal shall first be reviewed by the PI/ Co-PI, then by the concerned Head of the department, followed by other eminent researchers in the field.
- All applications related to research shall be routed through the Chairman (R&D Cell). One hard and soft copy of the same should be forwarded to R & D Cell and Head of the respective department.

- Dead stock registers shall be maintained for all research related projects.
- Purchase of instruments, software, etc. and the audit report made for the same shall follow the guidelines & rules of funding agency
- Principal Investigator and Co-Investigator shall ensure that the instruments, software, etc. purchased are secured in the laboratory/ department.
- The entire sanctioned amount shall be utilized as per the guidelines of the funding agency.
- In case the Principal Investigator leaves the college, all the items, instruments, software, etc. purchased shall remain as an asset of the college.

b. Policy for Procurement and Maintenance

Following policy for procurement and maintenance shall be followed:
- The purchase committee for any research project shall comprise of The Principal, Registrar, concerned HOD and PI/ Co-PI. The role of the committee is to streamline the purchase requests and gauge its utility; in completion of the project. The said committee shall also look into the recruitment of JRF/ SRF, if any.
- The accounts department shall submit a photocopy of the sanctioned letter and cheque/ DD to the concerned Principal Investigator (PI) of the research project.
- The PI shall plan and apply to Chairman of R & D Cell- Principal to release the funds sanctioned under the budgetary heads as per the research project requirement e.g. travelling, contingency expenses, consumables, books, technical assistance, hiring charges, etc. i.e. excluding the equipment cost and salary, if any. After the approval by Chairman of R & D Cell- Principal, The Accounts Department should immediately release the fund. PI should settle the account as and when required.
- PI should plan to purchase equipment as per the existing purchase procedure of the college.
- It is advisable though not mandatory to procure high end equipment from reputed manufacturers with a proven track record.
- All the sanctioned funds shall be spent as per the guidelines of the concerned funding agency.
- All the equipment purchased, shall first be registered in the Stores.
- In case PI leaves the college, the Co-PI shall be fully responsible to complete the project as per the guidelines of the concerned apex bodies.
- If PI is not in a position to continue the project, PI should utilize all the funds received as on date and submit the utilization certificate and progress report to the R&D Cell. He/she shall only then be relieved from his/her duties.
- The PI/ Co-PI shall complete the project by all means within the stipulated period and submit the audited statement of expenditure, utilization certificate and progress report to the concerned funding agency. A copy of all such documents should be submitted to the R & D Cell Chairman- Principal for records.

3.4 Seed Money Policy

To strengthen quality research, Seed Money Policy has been initiated by the college. Research aspirants can receive up to Rs.100, 000/- financial assistance under this policy for the period of two years subject to the recommendation of the expert committee.

Selection Process

Following stages are followed to grant financial assistance under Seed Money Policy

- Stage-I: A call for the research proposals under Seed Money Scheme will be announced by R & D Cell coordinator and details regarding this will be communicated to all the staff members.
- Stage-II: The research proposals will be scrutinized and short listed as per the guidelines by the experts of respective subjects
- Stage-III: Expert Committee will evaluate the presentation and will raise queries if any. After satisfactory presentation and clarification by PI and CO-PI, the committee will declare the result.

Eligibility Criteria

- Research aspirant should have completed at least three years of continuous service in MAEER's MIT Arts, Commerce and Science College, Alandi, Pune.
- Research aspirant should not have any ongoing research project sanctioned and funded by other funding agency.
- Duration of project can be minimum 12 months to maximum18 months. Proposals can be individual/interdisciplinary / collaborative with industry.
- Research outcomes should be in terms of publications in reputed referred journals (Scopus, Web of Science, and UGC Care list), product design, patents, Industrial consultancy and/or Continuing Education Programs and need to be clearly specified.
- Principal Investigator will be responsible for the completion of the research project and submission of the expenditure details.
- Advance will be given on half yearly basis against the sanctioned amount. After the settlement of first advancement, next amount will be released.

3.5 Student Research

a. Student Research Projects

Students will be encouraged to initiate research in the area of their interest.

Guidelines for the students:

- Students from different or same stream are allowed to perform collaborative research work.

- Student needs to find an area of interest, frame a valid research question, and develop a suitable methodology to investigate answer.
- Student needs to inform HOD and R & D Cell member of the Department about their research projects.

b. Guidance and Mentoring

Student research project requires thoughtful and sustained collaboration between the student and a faculty. The college has made the provision of faculty mentors for the students to guide and support in their research project.

Guidelines for the students:

- Generally, it is advisable to choose a faculty mentor whose expert area suits to the proposed research problem.
- A student can approach to his/her head of the department to get mentor for research work.
- Students should be aware that the role of faculty mentor is entirely voluntary so student should always be prompt and respectful to his/her faculty mentor.

c. Research Activities

Research & Development Cell consistently works through various student centric research activities for the promotion of research culture. Some of these activities are listed below:

- Organising research project competitions, expert talks.
- Organising college level research project competitions for the students.
- Motivating students to participate in various research competitions such as AVISHKAR, HACKATHON etc.

The objective of these activities is to provide expert views to the students, so that they can sharpen their skills & fill gaps. This boosts participants with confidence and energy to face competitors throughout the state. Financial support will be provided to the students for the participation in research competitions and presentation and publication of research papers in conferences and Journals.

d.Presentations and Publications

- Students will be motivated and supported to present their research work in seminars and conferences.
- They will be encouraged and guided to publish their research papers in UGC Care Listed journals.

4. Code of Ethics in Academic Research & Publication

MAEER's MIT Arts, Commerce and Science College, Alandi (D) is committed to promote and maintain high standards of integrity and accountability in the conduct of academic research at all levels and is intense to support the tradition of honesty and transparency in all its activities. This is the demand of an academic integrity that all researchers follow prominent professional standards, including appropriate research design and frameworks. We define academic integrity in terms of the assurance to the ethics of honesty, trust, fairness, respect and responsibility.

As an academic institution, we undertake to preserve, extend, and communicate truth. The following Code of Ethics in Research attributes general ideology of ethical demeanour to guide research aspirants towards the highest morals of academic research.

4.1 Integrity and Honesty

Considering Integrity and honesty as the two basic pillars in academic research, the research aspirants are always motivated to carry all of their research related activities as per the accepted standards of regulations. They should abide by the following responsibilities:

- All the data that is gathered and used for research purpose should be correct and authentic.
- Only the verified and correct data should be reported in journals, conferences and reports at any level.
- Any kind of error that the researcher observes in any of his/her published material should be rectified by taking all required reasonable steps via issuance of retraction or correction of data.
- Any statement that could be misinterpreted or misleading for someone should not be declared asserted or published anywhere.
- Proper acknowledgement should be given to research funding agency in the publication.
- Complete, detailed and up-to date records should be kept for all kinds of research undertaking.
- Complete transparency in the use and disbursement of resources for research should be followed.
- Research results must be accessible to the public, once the research is concluded.
- Confidentiality of sources must be respected and confidential data and information must not be revealed in any of the report or research outcome.

4.2 Fairness and Justice

Considering research as a collaborative effort, contributing to the knowledge by sharing resources and expertise, our peers, colleagues, students, benefactors, and research participants must

be treated impartially and fairly. To have this, each of us is expected to fulfil the following responsibilities and standards of conduct:

- Peers, colleagues, students, and research participants should be respected in due manner.
- One should provide assistance to other researchers, especially if one is specifically skilled and gained expertise in that specific field.
- Confidentiality and proprietary rights of peers, colleagues, and students whose material is being reviewed for publication, presentation, or funding by a grant must be respected.
- Special care should be given to the equipment, material resources, and results.
- The material contribution of others in research undertaken by someone should be acknowledged.
- The legal ownership of the research and/or its products should be properly distributed among the stakeholders.

4.3 Sense of responsibility and Safety

Being intellectuals, it becomes the responsibility of the researchers to protect and promote the safety and interests of the community. In this respect, the obligations are stated below:

- Call the attention of the public and the authorities to any observed vulnerability or risk that threatens human and environmental safety.
- Making misleading or exaggerated statements, or publicizing equivocal research findings as fact should be avoided.
- Safety practices in all research activities should be observed.
- Deliberate violation or circumvention of regulations governing research should be avoided.
- At the end of any kind of research activity, it should be ensured that laboratory wastes are properly disposed or treated.
- It must be assured that research activities do not result in environmental degradation.

- Data needs to be authentic & validate

4.4 Plagiarism

- Plagiarism will not be accepted at any cost, that it is highly forbidden to present portions of another's report or data as our own, even if the other work or source of data is cited somewhere previously by us.
- Research aspirants must clearly cite every source of information and data, which is used in the research document and is not the result of his/her, own research.

Note to researcher: Each researcher needs to inform his/her research contribution to R and D cell regularly. To submit details of research work follow formats given Appendix d**.**

Appendix A

Seed Money Policy Application Form

Application Form for Research Proposal under Seed Money Policy	
Name of Faculty:	**Date of Application:**
Department:	
Date of joining:	**Date of Birth:**
Email:	**Phone No.:**
Designation:	

Do you have completed any funded research project earlier?(YES/NO) :

If, Yes then fill following information

Title of Project	Nature of the Project: Minor/ Major	Duration	Name of the funding Agency	Year of Completion

Do you have any ongoing funded research project?(YES/NO) :

If, Yes then write name of its funding agency:

Research Project Information

Project Title:

Broad Subject:

Area of Specialization:

Signature of faculty

Appendix B

Research Proposal Format

1. Title of research proposal

2. Introduction of research proposal

3. Origin of research problem

4. Interdisciplinary relevance

5. Review of research and development in the subject

   (a) International status

   (b) National status

6. Significance of the study in the context of current status

7. Objectives

8. Methodology

9. Quarterly plan of work and targets to be achieved (expected time schedules for the Various activities of a proposed investigation)

10. Expenditure Budget with proper justification.

Expenditure Heads	Expected Budget required/ Expenditure (in Rs.)
Hiring Services	
Field Work and Travel	
Books and Journals	
Equipment	
Contingency	
Miscellaneous	
Total	

Appendix C

Research Schemes Links

Sr. No.	Name of the Agency	Link
1	Ministry of Environment & Forests	http://www.moef.nic.in/
2	Forests Research Institute	http://fridu.edu.in/
3	Department of Science and Technology (DST)	https://dst.gov.in/
4	Department of Atomic Energy (DAE)	https://dae.gov.in/
5	Department of Biotechnology (DBT)	http://dbtindia.gov.in/
6	Department of Education (DOEd)	https://www.education.gov.in/
7	Department of Food Processing Industries	http://www.mofpi.nic.in/
8	Department of Non Conventional Energy Sources (DNES).	http://www.mnre.gov.in/
9	Science and Technology Application for Rural Development (STARD) Science and Society Related Programmes	http://www.scienceandsociety-dst.org/
10	Technology Absorption and Adaptation Scheme (TAAS).	http://www.dsir.gov.in/
11	Department of Space (DOS).	https://www.isro.gov.in/
12	Science and Engineering Research Council (SERC)	https://dst.gov.in/
13	Intensification of Research in High Priority Areas (IRHPA).	http://www.serb.gov.in/
14	Science and Society Related Programmes	https://www.scienceandsociety-dst.org/
15	Research Scheme Applied to River Valley Projects(RSRVP)	http://www.cbip.org/
16	Science & Technology for Weaker Sections (STAWS). Science and Society Related Programmes	http://www.scienceandsociety.dst.org/
17	Scheme for Young Scientific professionals Science and Society Related Programmes (STARD)	http://www.scienceandsociety-dst.org/
18	WCP (Women Component Plan) Science and Society Related Programmes	http://www.scienceandsociety-dst.org/
19	Science & Technology Communication & Popularisation Programme	http://www.scienceandsociety.dst.org/
20	Natural Resources Data Management System (NRDMS)	https://dst.gov.in/natural-resources-data-management-system
21	Instrument Development Program (IDP)	http://www.scienceandsociety-dst.org/
22	R&D Medium Range Weather Forecasting (NCMRWF) and Crop Weather Relationships	http://www.scienceandsociety-dst.org
23	Opportunities for Young Scientists	http://www.scienceandsociety-dst.org
24	Science & Technology indicator and Manpower Studies	http://www.scienceandsociety-dst.org
25	Consumer Protection through Science & Technology	http://www.scienceandsociety-dst.org
26	Research and Development ALL INDIA COUNCIL FOR TECHNICAL EDUCATION	https://www.aicte-india.org/schemes/research-innovations-development-schemes
27	Indian Council of Agricultural Research (ICAR)	https://icar.org.in/
28	Indian Council of Medical Research (ICMR)	https://www.icmr.gov.in/
29	Council of Scientific and Industrial Research (CSIR)	http://www.csir.res.in
30	Defence Research and Development Organisation (DRDO)	https://www.drdo.gov.in/
31	Ministry of Statistics and Programme Implementation	http://mospi.nic.in/

32	Indian National Science Academy (INSA)	https://www.insaindia.res.in/
33	National Academy of Agricultural Sciences **(NAAS)**	http://naasindia.org/
34	National Council for Economic Research and Training	https://www.ncaer.org/
35	Indian Council of Social Science Research(ICSSR)	https://icssr.org/
36	NABARD	https://www.nabard.org/
37	Consumer Welfare Fund	https://consumeraffairs.nic.in/
38	Agriculture and processed Food Products	https://apeda.gov.in/apedawebsite/
39	Indian National Committee on Irrigation & Drainage (INCID)	http://www.cwc.gov.in
40	Tata Institute of fundamental research	http://www.tifr.res.in
41	Bhaba Atomic research centre (BARC)	http://www.barc.ernet.in
42	World Intellectual Property Organization	http://www.wipo.org
43	INDIAN PATENTS	http://www.indianpatents.org.in
44	JAPAN PATENT OFFICE	http://www.jpo.go.jp
45	U. S. PATENTS & TRADEMARKS	http://www.uspto.gov
46	EUROPE's PATENT DATABASE	http://www.espacenet.com
	International	
47	International Foundation for Science	http://www.ifs.se/ifs-programme/
48	The World Academy of Sciences (TWAS)	https://twas.org/
49	United Nations Educational, Scientific and Cultural Organisation.	https://en.unesco.org/
50	The Third World Network of Scientific organizations(TWNSO)	https://www.cbd.int/
51	Animal Production & Health Division, International Atomic Energy Agency	https://www.iaea.org/
52	International Federation for Women in Agriculture	https://www.aucetk.edu.in/fa/ia.html

Appendix D
Research Data Submission Formats

Research work done by research aspirants should be submitted to R&D Cell through departmental member on regular basis.

1. **Paper published in National/International Journals**

Sr No.	Name of the Faculty	Department	Author /Co-Author	Title of the Paper	Name of the Journal	Volume & Pages	Month and Year of Publication	National (N)/International (I)	ISBN/ISSN No.	Impact Factor	Citation	UGC Referred (Yes/No)	Peer Reviewed/ Non-peer Reviewed	Indexing Web of Science/ Scopus etc	Applicable Link

2. **Paper published in National/International Conference Proceedings**

Sr. No.	Name of the faculty	Department	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / international	Year of publication	Date Of Publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher	Presented Yes/No	Applicable Link

3. **Conference /Seminar/ Workshops/ STTPs Attended (Related to Research Topic)**

Sr. No.	Name of the Faculty	Seminar/Conference/Workshop	State/National/International	Title of the workshop	Venue	Date

4. **Research Grants**

Sr. No	Name of Principal & Co-Investigator	Name of the Research Project	Department	Type of Project Minor/Major	Funding Agency	Amount Sanctioned	Duration of Project	Level State/National/International

5. **Research Awards**

Sr. No.	Name of the Faculty	Title of the Award	Body/ Institutes	Level State/National/International	Date

6. **Book Publication:**

Sr. No.	Name of the Faculty	Book Name/ Chapter Name	ISBN	Publication	Date

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Approved by
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