



BVVS

MECHANICAL ENGINEERING

M.Tech (Machine Design)

NPMD 101 M	I SEM RESEARCH METHODOLOGY AND IPR	03 - Credits (3 : 0 : 0)
Hrs./Week : 03		CIE Marks : 50
Total Hours : 40		SEE Marks : 100

Course Outcomes:	
At the end of the course the student should be able to:	
<ol style="list-style-type: none"> 1. Able to study and understand need for research design. 2. Able to Study and review steps in sampling design. 3. Able to study and understand statistics in research. 4. Able to apply research paper and IPR. 	
Unit - I	10 Hrs
<p>Introduction to Research Methodology: Meaning, Objective of research, Motivation in research, Type of research, research approaches, significance of research, Research methods versus Methodology, Research and scientific method , importance of knowing how research is done , research process, criteria of good research, problem encountered by research in India.</p> <p>Defining the Research Problem: What is research problem, Selecting the problem, necessity of defining the problem, technique involved in defining a problem, meaning of research design, need for research design, features of a good design, importance concepts relating to research design , different research design, basic principal of experimental design .</p>	
UNIT - II	10 Hrs
<p>Sampling Design: Census and sample survey, Implications of a sample design , steps in sampling design, criteria of selecting a Sampling procedure , characteristics of a good sample design, different type of sample designs, how to select a random sample, Radom sample from an infinite universe , complex random sampling designs.</p> <p>Method of data collection: collection of primary data, observation method, interview method, collection of data through questionnaires, collection of data through schedules, different between questionnaires and schedules , some other method of data collection, collection of secondary data, selection of appropriate method for data collection ,case study method.</p>	
Unit - III	10 Hrs
<p>Processing and analysis of data: Processing operation, some problem in processing, elements of analysis, statistics in research , measures of central tendency, measures of central tendency, measures of dispersion, measures of asymmetry, measures of relationship, simple regression analysis , multiple correlation and regression , partial correlation, association in case of attributes, other measures.</p> <p>Testing of Hypothesis-I: Hypothesis, Basic concept concerning testing of hypothesis ,procedure for hypothesis testing, flow diagram for hypothesis testing, measuring the power of a hypothesis test, test of hypotheses, important parametric tests, hypothesis testing of mean, hypothesis testing for different between means, hypothesis testing for comparing two related samples.</p>	


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Unit - IV	10 Hrs
<p>Interpretation and Report Writing: Meaning of Interpretation, Technique of Interpretation, Precaution in Interpretation, Significance of Report Writing, Different Steps in Writing Report, Layout of the Research Report, Types of Reports, Oral Presentation, Mechanics of Writing a Research Report, Precautions for Writing Research report.</p> <p>Nature of Intellectual Property: Patents, Designs, Trade Mark and Copyright. Process of Patenting and Development: technological research, innovation, patenting & development. Procedure for grants of patents.</p>	
<p>Text-books:</p> <ol style="list-style-type: none"> 1. Kothari C.R. "Research Methodology "Methods & Techniques", Wishwa prakashan, A Division of New Age International Pvt. Ltd. 2. T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008. 	
<p>Reference books:</p> <ol style="list-style-type: none"> 1. RanjitKumar , " Research Methodology", Sage Publication , London, New Delhi,1999. 2. Meenakshi Raman & Sangeeta Sharma. "Technical Communication-Principles and Practice"Oxford University press,Jai Singh Road, New Delhi. 3. Ann M. Korner, Guide to Publishing a Scientific paper, Bioscript Press 2004. 4. Robert P. Merges, Peter S. Menell and Mark A. Lemley, "Intellectual Property in New Technological Age", Aspen Publishers, 2016. 5. Mayall , "Industrial Design", McGraw Hill, 1992. 6. Niebel , "Product Design", McGraw Hill, 1974. 	
<p>Scheme of Examination (SEE): Student has to solve PART-A compulsorily and from PART-B. FOUR full questions selecting any ONE from each of the FOUR UNITS.</p>	
<p>Course assessment method : Continuous and Semester end assessment.</p>	
<p>Assignments:</p> <ol style="list-style-type: none"> 1. This course will require assignments that will include the preparation of proto type model. 2. Preparation of reports and additional assignments as determined by the instructor. 	

CO's	Sub Code: NPMD 101 M	PO 1	PO 2	PO 3	PO 4
CO1	Able to study and understand need for research design.	3	2	3	2
CO2	Able to Study and review steps in sampling design.	3	2	3	2
CO3	Able to study and understand statistics in research.	3	2	3	2
CO4	Able to apply research paper and IPR.	3	3	3	2


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 Basaveeshwar Engineering College
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B.V.V.S.

BASAVESHWAR ENGINEERING COLLEGE (AUTONOMOUS) (ESTD : 1963)

[Government Aided Institution and Permanently Affiliated to Visvesvaraya Technological University, Belagavi
& Accredited by NAAC with 'A' grade from 2017 - 2022]

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E-mail : becprincipal@yahoo.com

Website : www.becbgk.edu

Ref. No. BEC / BGK /

Date : 06.11.2020



CIRCULAR

The Research Ethics Committee has been constituted at college level and the members are:

Sl.No.	Name	Designation	Affiliation	Role
1.	Dr. S. S. Injaganeri	Principal	BEC Bagalkote	Chairman
2.	Dr. Veena S. Soraganvi	Dean (R&D)	BEC Bagalkote	Member
3.	Dr. P. N. Kulkarni	Dean (Academic)	BEC Bagalkote	Member
4.	Dr. Bharti S. Meti	Professor & Head	Biotechnology	Member
5.	Dr. S. G. Kambalimath	Assoc. Professor	ECE Dept. BEC Bagalkote	Member Secretary

The research ethics committee has an obligation to the Researcher, Institution and Society at large. In this regard, the roles and responsibilities of the committee are as follows:

- To ensure that, the research conforms to recognised ethical standards, which includes respecting the dignity, rights, safety and well-being of the people who take part in research in general
- To ensure that, appropriate strategies are in place to protect the individuals who participate and are associated with research from potential adverse consequences of the research
- To guarantee fairness, confidentiality and privacy of data of all the subjects involved in the study and consent of the concerned has to be sought, when data is to be shared
- To review research proposals to assess whether the research is ethical
- To ensure that the copyright of original work is protected and due credit is given to all researchers
- To ensure and verify that, all the research papers and theses submitted have to pass the similarity test compulsorily
- To ensure that, full transparency is maintained about data-sharing and methodology followed in such cases where absolute confidentiality is not possible or required


Principal




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23.11.2020

Ref. No. BEC / BGK /

Date : _____

CIRCULAR

A meeting of Research Ethics Committee has been convened on 28.11.2020 at 4:30 pm in Board room, to discuss about the policies to maintain Ethical Standards in Research. All the members are informed to be present positively.

Agenda

1. To discuss about the roles and responsibilities of the committee
2. To formulate the guidelines for the operation of the committee
3. To formulate the terms and conditions to be followed in Research
4. Any other matter with the permission of the chair


Principal

PROCEEDINGS OF MEETING






Research Ethics Committee

28.11.2020

The meeting started with a welcome note by Dr. Veena Soraganvi Dean (R&D). Dr. S. S. Injaganeri, Chairman of the committee briefed about the importance of ethics in research and emphasised the need of such a committee in higher educational institutions.

1. It was discussed about the Roles and Responsibilities of the committee in general. It was resolved that, the committee members, have to ensure the research in the institute conforms to recognised ethical standards, which includes respecting the dignity, rights, safety and well-being of the people who take part in research
2. It has been discussed and approved that the Ethics committee has to monitor the following matter regularly
 - i. To safeguard the privacy of data, in case where social surveys are performed and personal data of subjects is collected
 - ii. The confidentiality or transparency of data being collected has to be informed to the Ethics committee and also to the subject before collecting any such data
 - iii. The laboratories have to follow safety measures and guidelines have to be displayed in each of the susceptible laboratories
 - iv. The laboratories where microorganisms are dealt with need to be taken utmost care to avoid leakage of harmful microorganisms and avoid infection by using proper preventive protocol by all those involved

- v. The plagiarism reports of all the Masters and PhD theses need to be approved by the committee
 - vi. Any issues regarding the copy right and sharing of research information has to be brought to the notice of the committee.
 - vii. Grievances of conflicts regarding the due credit to all the research contributors if any, has to be resolved by the committee
3. The guidelines for research at BEC to be in line with the guidelines of Affiliating University
 4. The meeting was concluded with Vote of Thanks Dr. P.N.Kulkarni, the Dean Academic

Sl. No.	Name	Designation	Role	Signature
1.	Dr. S. S. Injaganeri	Principal	Chairman	
2.	Dr. Veena S. Soraganvi	Dean (R & D)	Member	
3.	Dr. P. N. Kulkarni	Dean (Academic)	Member	
4.	Dr. Bharti S. Meti	Professor & Head	Member	
5.	Dr. S. G. Kambalimath	Assoc. Professor	Member Secretary	



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Date: 9.12.2020

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CIRCULAR

A meeting of Research Ethics Committee has been convened on 19.12.2020 at 2:30 pm in Board room. All the members are informed to be present at the venue on time

Agenda

1. To confirm the minutes of the previous Research Ethics committee meeting held on 28.11.2020
2. To apprise about research guidelines and policies for research at BEC
3. To review the research proposals to be submitted to AICTE under RPS
4. Any other matter with the permission of the chair

Principal


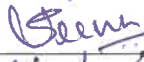

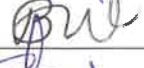
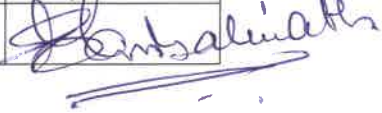
PROCEEDINGS OF MEETING

Research Ethics Committee

Date : 19.12.2020

The meeting started with a welcome note by Dr. Veena Soraganvi Dean (R&D). A brief introduction about RPS scheme of AICTE was given and informed about the proposals prepared by faculty members for the same. Dr. S. S. Injaganeri, Chairman briefed the importance of integrity in quality research and informed the committee to be fair

1. The minutes of the previous Research Ethics Committee meeting held on 28.11.2020 was presented by Principal to committee members present, it was resolved to approve the same
2. The guidelines and policies for research at BEC to be in line with the guidelines of Affiliating University were presented and approved by the committee (Annexure-I)
3. Twelve AICTE-RPS proposals were presented by Principal investigators before the committee from various departments. Committee verified the originality and authenticity of the proposals, and safety precautions in laboratory related to such research. After a detailed discussion, all the proposals have been approved as no proposals had any discrepancy regarding matters related to Ethics in research
4. The meeting was concluded with Vote of Thanks from the Member Secretary

Sl. No.	Name	Designation	Role	Signature
1.	Dr. S. S. Injaganeri	Principal	Chairman	
2.	Dr. Veena S. Soraganvi	Dean (R & D)	Member	
3.	Dr. P. N. Kulkarni	Dean (Academic)	Member	
4.	Dr. Bharti S. Meti	Professor & Head	Member	
5.	Dr. S. G. Kambalimath	Assoc. Professor	Member Secretary	



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Date 04.03..2021

CIRCULAR

A meeting of Research Ethics Committee has been convened for on 19.03.2021 at 4:30 pm in Board room, All the members are informed to be present at the venue

Agenda

1. To confirm the minutes of the previous Research Ethics committee meeting held on 19.12.2020
2. To review the project proposals for VTU Research Grants Scheme
3. Any other matter with the permission of the chair


Principal


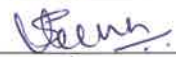
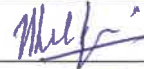


PROCEEDINGS OF MEETING

Research Ethics Committee

19.03.2021

The meeting started with a welcome note by Dr. Veena Soraganvi Dean (R&D). A brief information about the Research Grant Scheme (RGS) of Visvesvaraya Technological University, Belagavi. Dr. S. S. Injaganeri, Chairman briefed about the research proposals prepared by faculty members of various departments of the college and talked about the importance of integrity in quality research and informed the committee to be fair.

1. The minutes of the previous Research Ethics Committee meeting held on 19.12.2020 was presented by Principal to committee members present, it was resolved to approve the same
2. Six proposals were presented by Principal investigators before the committee from various departments. The Committee members verified the originality and authenticity of the proposals, and safety precautions in laboratory related to such research. After a detailed discussion, all the proposals were approved as no proposal had any discrepancy regarding the matters related to Ethics in research
3. The meeting was concluded with Vote of Thanks from the Member Secretary

Sl. No.	Name	Designation	Role	Signature
1.	Dr. S. S. Injaganeri	Principal	Chairman	
2.	Dr. Veena S. Soraganvi	Dean (R & D)	Member	
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Date: 21.08.2021

CIRCULAR

A meeting of Research Ethics Committee has been convened on 01.09.2021 at 4:30 pm in Board room. All the members are informed to be present at the venue in time

Agenda

1. To confirm the minutes of the previous Research Ethics committee meeting held on 19.03.2021
2. To apprise about research activities in the college since last meeting
3. To verify the Plagiarism reports of the post graduate Theses
4. Any other matter with the permission of the chair


Principal

PROCEEDINGS OF MEETING


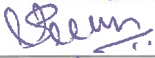

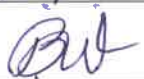

Research Ethics Committee

Date: 01.09.2021

The meeting started with a welcome note by Dr. Veena Soraganvi Dean (R&D).

Dr. S. S. Injaganeri, Chairman of the committee briefed about the process of similarity check of research papers and post graduate theses submitted to the college.

1. The minutes of the previous Research Ethics Committee meeting held on 19.03.2021 was presented by Principal to committee members present, it was resolved to approve the same
2. Research activities in the college were apprised to the committee members since last meeting
3. Overall 14 MCA, 64 MTech and 25 MBA theses had undergone similarity check and the reports were presented before the committee. The committee members verified the process of similarity check and the plagiarism reports of post graduate theses for the academic year 2020-21 and the reports within the allowable standard limit (25%) were approved
4. The meeting was concluded with Vote of Thanks from the Member Secretary

Sl. No.	Name	Designation	Role	Signature
1.	Dr. S. S. Injaganeri	Principal	Chairman	
2.	Dr. Veena S. Soraganvi	Dean (R & D)	Member	
3.	Dr. P. N. Kulkarni	Dean (Academic)	Member	
4.	Dr. Bharti S. Meti	Professor & Head	Member	
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25.08.2022

Ref. No. BEC / BGK /

Date: _____

CIRCULAR

A meeting of Research Ethics Committee has been convened on 29.08.2021 at 4:30 pm in Board room. All the members are informed to be present at the venue in time

Agenda

1. To confirm the minutes of the previous Research Ethics committee meeting held on 01.09.2021
2. To verify the Plagiarism reports of the MTech and MBA Theses
3. Any other matter with the permission of the chair


Principal


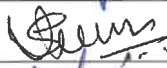
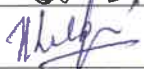

PROCEEDINGS OF MEETING

Research Ethics Committee

Date: 29.08.2022

The meeting started with a welcome note by Dr. Veena Soraganvi Dean (R&D) and apprised about the various research activities of the college since previous meeting. Dr. S. S. Injaganeri, Chairman briefed about the process of similarity check of various papers and post graduate theses submitted to the college.

1. The minutes of the previous Research Ethics Committee meeting held on 01.09.2021 was presented by Principal to committee members present, it was resolved to approve the same
2. Similarity check reports of post graduate theses of 56 MTech and 40 MBA were presented before the committee. The theses whose plagiarism content was within the allowable standard limit (25%) were approved
3. The meeting was concluded with Vote of Thanks from the Member Secretary

Sl. No.	Name	Designation	Role	Signature
1.	Dr. S. S. Injaganeri	Principal	Chairman	
2.	Dr. Veena S. Soraganvi	Dean (R & D)	Member	
3.	Dr. P. N. Kulkarni	Dean (Academic)	Member	
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