



## Office of the Registrar

No. SGTU/Comm./37/2021/56

Dated: 5<sup>th</sup> April, 2021

### **Research Code of Ethics, SGT University, Gurugram**

SGT University believes in the philosophy of nurturing young minds to stimulate them to challenge the conventional, find solutions to pressing issues, investigate new ideas, innovate and finally disseminate the results. All the researchers should abide by the principles of honesty, integrity, trust, accountability, collegiality, and meet the high standards of ethics.

This policy applies to all Research conducted by faculty members, research scholars, Post-doctoral fellows, Postgraduate students, Graduate students or any other person involved in any kind of research at SGT University.

#### **General principles**

We are following WHO, ICMR and The American Psychological Association principles which include:

- Respecting human dignity and integrity
- Ensure honesty and transparency towards research
- Respect individual autonomy and obtaining free and informed consent
- Protect vulnerable individuals
- Ensure privacy and confidentiality
- Promote justice and inclusiveness
- Minimize harm and maximize benefits
- Share the benefits with underprivileged populations
- Respect and protect the environment and future generations

#### **The terms of reference of various departmental ethical committees are as follows:**

- To ensure that all proposed research projects conform to standard national and international ethical guidelines and that dignity, right and wellbeing of research participants is protected.
- To initiate and commission research studies on ethical aspects of practice Continuing education in research and ethical aspects via seminars, workshops and interactive discussions for all researchers.
- The Ethics committee endeavors to produce guidance on a broad range of topics. Assessments of risk benefit ratio, informed consent process etc. are some examples.
- The committee does not address or interfere in matters of an administrative nature, nor does the committee function as a grievance cell for staff members.

#### **Responsibility:**

- To ensure the competent review and evaluation of all ethical aspects of research projects received, to ensure compliance with the appropriate laws and safeguard welfare of subjects.
- Education of professional, administrative, and support staff about ethical issues.

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- Creation, developing, revising and implementing ethical guidelines (SOPs).
- Initiate studies in ethics.

Continuing education and training programs to ensure that ethical committee members are qualified to perform their specific duties.

#### **Ethics & Misconduct:**

Following looks at the ethical angle of the research and also check for any academic & research misconduct.

#### **(a) Plagiarism Policy:**

This policy ensures non-plagiarism in all research work at SGTU (in accordance with the UGC guidelines for plagiarism), and also deals with the actions on ethical misconduct by the faculty / student.

#### **(b) Data Interpretation:**

Whatever data has been generated while conducting research whether positive or negative should be reported as such, it is against the ethics to fail to report the data which at times fail to support the expected conclusions


#### **(c) IEC- Institutional Human Ethical Committee: (for Clinical Research)**

Research projects that involve human subjects, including those undertaken as part of a teaching program, must be approved in advance by the respective institutional ethical committees.

#### **(d) IAEC- Institutional Animal Ethics Committee:**

Research projects that involve use of animals, including those undertaken as part of a teaching program, must be approved in advance by the Animal Ethics committee.

The ethical code will be revised from time to time as and when needed.

  
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A copy is forwarded to the following for information and necessary action:

1. PA to Chairperson, Dashmesh Educational Charitable Trust for kind information of the Chairperson
2. PA to the VC for kind information of the Vice Chancellor
3. PA to PVC for kind information of the Pro Vice Chancellor
4. All Deans/Directors/Principals
5. All Members of the Committee
6. GM- Admin
7. GM-HR
8. Sports Officer

  
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# SGT University



## **SYLLABUS FOR PRE- PhD COURSE WORK**

**Shree Guru Gobind Singh Tricentenary University**  
Village- Budhera, Gurugram-Badli Road,  
Gurugram- 122505, Haryana (INDIA)

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### SYLLABUS FOR PRE- PhD COURSE WORK

Subject Code	Nomenclature of Paper	Credits	IA	University Exam	Max Marks
XXXXX 101	<b>Research Methodology &amp; Research and Publication Ethics</b>	4	20	80	100
XXXXX 102	<b>Statistics and Computer Fundamentals</b>	4	20	80	100
XXXXX 103	<b>Subject Specific Course</b>	3	20	80	100
XXXXX 104	<b>*Outline of Review/ Report/ Thesis Writing and Presentation (Non Credit Course)</b>	0	20	80	100
XXXXX 105	<b>Computer Fundamentals and Software Applications (Practical)</b>	1	10	40	50
	<b>Total</b>	<b>12</b>			<b>450</b>

*\*Review/ report/ thesis writing (40), Presentation (40)*

  
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Paper/ S. No	Topics to be Covered	Teaching Hours
<b>Xxxxx 101</b>	<b>Research Methodology &amp; Research and Publication Ethics (Paper code 101)</b>	<b>60</b>
<b>Section I</b>	<p><b>Introduction and basic concepts in Research Methodology:</b> Meaning of research, characteristics, significance &amp; types of research, research approaches, research plan &amp; its components, Criteria for good research &amp; problems encountered by research scholars.</p> <p><b>Identification and formation of research problem:</b> Necessity &amp; Techniques involved in defining problem, Formulation of research question / hypothesis.</p>	<b>8</b>
<b>Section II</b>	<p><b>Research Design:</b> Concept of research design, independent, dependable &amp; extraneous variables, research hypothesis, case study method, descriptive &amp; diagnostic studies, analytic studies, experimental designs- CRD, RBD, LSD &amp; Factorial designs</p>	<b>8</b>
<b>Section III</b>	<p><b>Data Collection-</b> primary &amp; secondary data collection, Case study method etc. Data preparations, processing, analysis &amp; interpretation.</p> <p><b>Writing of report-</b> types of reports, stages in preparation, Characteristics, layout structures, documentation, footnotes, Bibliography &amp; References- various methods. Editing final report, characteristics of good report</p>	<b>8</b>
<b>Section IV</b>	<p><b>Presentation of report/ paper-</b> Oral, Poster, publication of Paper, critical appraisal of Journal article.</p> <p><b>Funding agencies</b> such as DSF, DST, DBT, ICMR, CSIR, UGC etc. Preparing proposal for funding, Role of IPR in research &amp; development.</p>	<b>6</b>

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<b>Section V</b>	<b>Philosophy and Ethics</b>  <b>Introduction to philosophy :</b> definition, nature and scope, concept, branches  <b>Ethics:</b> definition, moral philosophy, nature of moral judgments and reactions	3
<b>Section VI</b>	<b>Scientific Conduct</b> <ul style="list-style-type: none"> <li>• Ethics with respect to science and research</li> <li>• Intellectual honesty and research integrity</li> <li>• Scientific misconduct : Falsification, Fabrication, and Plagiarism (FFP)</li> <li>• Redundant publications: duplicate and overlapping publications, salami slicing</li> <li>• Selective reporting and misrepresentation of data</li> </ul>	5
<b>Section VII</b>	<b>Publication Ethics</b> <ul style="list-style-type: none"> <li>• Publication ethics: definition, introduction and importance</li> <li>• Best practices / standards setting initiative and guidelines: COPE, WAME, etc.</li> <li>• Conflicts of interest</li> <li>• Publication misconduct: definition , concept, problems that leads to unethical behavior and vice versa, types</li> <li>• Violation of publication ethics, authorship and contributor ship</li> <li>• Identification of publication misconduct, complaints and appeals</li> <li>• Predatory publishers and journals</li> </ul> <b>PRACTICE:</b> <b>Open Access Publication:</b> <ul style="list-style-type: none"> <li>• Open access publication and initiatives</li> <li>• SHERPA / ROMEO online resource to check publisher copyright &amp; self – archiving policies</li> <li>• Software tool to identify predatory publication developed by SPPU</li> <li>• Journal finder / journal suggestion tool viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc</li> </ul>	7
		4

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	<p><b>Publication Misconduct:</b></p> <p>A. Group Discussion (2hrs)</p> <ol style="list-style-type: none"> <li>1. Subject specific ethical issues, FFP, authorship</li> <li>2. Conflicts of interest</li> <li>3. Complaints and appeals : examples and fraud from India and abroad</li> </ol> <p>B. Software tools (2hrs)</p> <p>Use of plagiarism software like Turnitin, urkund and other open source software tools</p> <p><b>Databases and Research Metrics:</b></p> <p>A. Databases (4 hrs)</p> <ol style="list-style-type: none"> <li>1. Indexing databases</li> <li>2. Citation databases: Web of Science, Scopus, etc</li> </ol> <p>B. Research Metrics (3hrs)</p> <ol style="list-style-type: none"> <li>1. Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IIP, Cite Score</li> <li>2. Metrics: h-index, g index, i10 index, altmetrics</li> </ol>	<p>4</p> <p>7</p>
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XXXX 102	<b>Statistics and Computer Fundamentals</b>	<b>60</b>
<b>Section I</b>	<p>1. Generations of Computer (I-V)</p> <p>2. Block Diagram of a Computer</p> <p>3. Functions of the Different Units: Input unit, Output unit, Memory unit, CPU (ALU+CU)</p> <p>4. Input &amp; Output Devices:</p> <p><b>Input Devices:</b></p> <ol style="list-style-type: none"> <li>Keyboard,</li> <li>Point and draw devices: mouse, joystick, track ball, light pen</li> <li>Data Scanning devices: image scanner, OCR, OMR, MICR, Bar code reader, card reader</li> <li>Voice Recognition Device</li> <li>Digitizers</li> </ol> <p><b>Output Devices:</b></p> <ol style="list-style-type: none"> <li>Monitor</li> <li>Printer: laser printer, ink jet printer, dot-matrix printer</li> <li>Projector</li> </ol> <p>5. Memories [Memory hierarchy]</p> <ol style="list-style-type: none"> <li>Registers [Types of Registers]</li> <li><b>Cache Memory</b></li> <li><b>Primary Memory:</b> <ol style="list-style-type: none"> <li>RAM <ol style="list-style-type: none"> <li>How data is stored in a RAM</li> </ol> </li> <li>DRAM and SRAM</li> </ol> </li> <li>ROM <ol style="list-style-type: none"> <li>ROM BIOS/ Firmware</li> <li>Types of ROM</li> </ol> </li> </ol> <li><b>Secondary Memories:</b> <ol style="list-style-type: none"> <li><b>Hard disk</b> <ol style="list-style-type: none"> <li>Structure of a hard disk, how data is stored in a hard disk, concept of tracks, sectors, clusters, cylinders</li> <li>Formatting of hard disc (low level formatting and high level formatting)</li> </ol> </li> <li><b>Floppy [data storage mechanism]</b></li> <li><b>CD [data storage mechanism]</b></li> <li><b>USB</b></li> </ol> </li> <p>6. Software</p> <p><b>System Software</b></p> <ol style="list-style-type: none"> <li><b>Operating System:</b> <ol style="list-style-type: none"> <li>Functions of O/S</li> <li>Types of O/S</li> </ol> </li> <li><b>Program Language Translators:</b> <ol style="list-style-type: none"> <li>Assembler</li> <li>Compiler</li> <li>Interpreter</li> </ol> </li> </ol>	<p>5</p> <p>5</p> <p>5</p>



	<ul style="list-style-type: none"> <li>b. Utility Programs</li> <li>c. Communication Software</li> <li>e. Performance Monitoring Software</li> </ul>	
	7. Application Software	
	8. Software hierarchy and dependence between the different layers	
	9. Computer Languages: <ul style="list-style-type: none"> <li>i. Machine language</li> <li>ii. Assembly language</li> <li>iii. High level language</li> </ul>	
Section II	<b>Descriptive statistics:</b> <b>Measures of Central tendency-</b> mean, median, mode <b>Measures of dispersion-</b> Range, mean deviation, standard deviation. <b>Index numbers, Analysis of time series.</b>	5
	<b>Correlation &amp; Regression analysis</b>	5
	<b>Probability:</b> Binomial Distribution, Poisson Distribution, Normal Distribution. Geometrical distribution, correlated measurements.	5
	<b>Variance-</b> measures of relationship, covariance's, Karl Pearson's Correlation coefficient, Measures of skewness, kurtosis, Spearman Rank correlation.	5
	<b>Sampling &amp; statistical inferences:</b> Types of sampling, Sampling & non-sampling errors, Sampling distribution- distribution of mean, proportion, student' <i>t</i> , Chi-square test, <i>F</i> - distributions, degree of freedom, central limit theorem & statistical inferences	10
	<b>Testing of Hypothesis-</b> test statistics & critical region, test of significant attributes, Tests of mean, proportion, variance, difference of two means, two proportions, two variances. student' <i>t</i> , Chi-square, <i>F</i> distributions Z test, Small sample tests- T Test, F test of equality of variance, large sample tests, normal test. P value approach, power of test. <b>Anova-</b> one way & two way techniques	15
Xxxxx 103	<b>Subject Specific Paper</b> Curriculum & syllabus will be as per concerned subject and be of Master's level.	45
Xxxxx 104	<b>*Outline of Review/ Report/ Thesis Writing and Presentation (Non Credit Course)</b>	0

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<b>XXXXX</b> <b>105</b>	<b>Computer Fundamentals and Software Applications : Practical</b>  <b>MS Office</b> i) Microsoft Word ii) Microsoft Excel iii) Microsoft PowerPoint  <b>Software</b> i) MATLAB ii) XPPAUT iii) SPSS iv) Epi Info v) STRATA vi) ProQuest vii) Delnet viii) SCC ix) J-Gate	30
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**Ph.D. CELL SGT UNIVERSITY  
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No. SGTU/Ph.D. Cell/2022/304

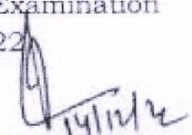
Dated: 13.12.2022

**NOTIFICATION**

It is notified for the information of all concerned that the Scheme of Examination for Pre-Ph.D. Course Work, approved by the Academic Council vide Agenda Item No. 31.3 of its 31<sup>st</sup> meeting held on 23.6.2022, the Vice-Chancellor has been pleased to approve the updated modified Scheme of Examination, in anticipation of the approval of the Academic Council, as under:

Subject Code	Nomenclature of paper	Credits	I.A.	Univ. Exam.	Max. Marks
101	Research Methodology and Research & Publication Ethics	04	20	80	100
102	Statistics and Computer Fundamentals	04	20	80	100
103	Subject specific course	04	20	80	100
104	Outline of Review/Report/Thesis Writing and presentation.	02	20	80	100
105	Computer Fundamentals and Software Applications (Practical)	02	10	40	050
Total		16			450

The above mentioned Scheme of Examination for Pre-Ph.D. Course Work shall be in supersession of the Scheme of Examination notified vide No. SGTU/Ph.D. Cell/2022/117 dated 25.07.2022.

  
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**CC: Copy forwarded to the following for information:**

- i) P.A. to Pro-Chancellor (for kind information of the Pro-Chancellor)
- ii) P.A. to Vice-Chancellor (for kind information of the Vice-Chancellor)
- iii) P.A. to Pro-Vice-Chancellor (Admin.) (for kind information of the Pro-Vice-Chancellor).
- iv) Dean, Faculty of Sciences and Coordinator, Pre-Ph.D. Course Work.
- v) Head, Ph.D. Cell.
- vi) Controller of Examinations.
- vii) Deputy Registrar (Academic/Regn.)

  
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# SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY

(UGC Approved)

Gurugram, Delhi-NCR

Budhera, Gurugram-Badli Road, Gurugram (Haryana) – 122505 Ph. : 0124-2278183, 2278184, 2278185

## Faculty of Allied Health Sciences

B.Sc. (Microbiology)

### RESEARCH METHODOLOGY AND BIOSTATISTICS

<b>Semester</b>	<b>: V</b>
<b>L T P – CREDITS</b>	<b>: 3 1 – 4</b>
<b>EXAMINATION</b>	<b>: 60 MARKS</b>
<b>INT ASSESSMENT</b>	<b>: 40 MARKS</b>
<b>TOTAL MARKS</b>	<b>: 100 MARKS</b>
<b>DURATION OF EXAM</b>	<b>: 3 HOURS</b>

#### UNIT I

1. Introduction of research, Research ethics, Clinical issue in research, pilot survey, inclusion, and exclusion criteria.
2. Research problems (questionnaire and schedule), hypotheses and type of errors, review of literature, measurement of scaling, the principle of measurements of reliability and validity,
3. Sampling design, Criteria for good samples, data types, Descriptive and analytical research.

#### UNIT II

1. Introduction of Biostatistics
2. Meaning, definition, and characteristics of statistics
3. Parameters and Statistics, Sources of data
4. Descriptive and inferential statistics
5. Variables and their types

#### Unit III

Raw & array data, frequency distribution, Basic principles of graphical representation  
Types of diagrams - histograms, frequency polygons, frequency polygon, cumulative frequency curve, Normal probability curve.

Measurement of Central Tendency: Definition and calculation of mean - ungrouped and grouped data, Meaning & calculation of median for ungrouped and grouped data, Meaning and calculation of mode, Comparison of the Mean, Median and mode, Measurement of Dispersion: Range, Quartile deviation, Mean Deviation & Standard Deviation. Concept of Correlation & Regression

#### Unit IV

Test of significance: t-test, F-test, Z-test, chi-square test & test of homogeneity (Normal distribution) Sampling methods, sampling and non-sampling errors.

  
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## Faculty of Agricultural Sciences M.Sc. (Agronomy)

### AGRICULTURAL RESEARCH, RESEARCH ETHICS & RURAL DEVELOPMENT PROGRAMMES

Course Details: 11060306: AGRICULTURAL RESEARCH, RESEARCH ETHICS & RURAL DEVELOPMENT PROGRAMMES (e-Course) 1(1+0)

#### Objective

To enlighten the students about the organization and functioning of agricultural research systems at national and international levels, research ethics, and rural development programmes and policies of Government.

#### Theory UNIT-I

History of agriculture in brief; Global agricultural research system: need, scope, opportunities; Role in promoting food security, reducing poverty and protecting the environment; National Agricultural Research Systems (NARS) and Regional Agricultural Research Institutions; Consultative Group on International Agricultural Research (CGIAR); International Agricultural Research Centres (IARC), partnership with NARS, role as a partner in the global agricultural research system, strengthening capacities at national and regional levels; International fellowships for scientific mobility.

#### UNIT-II

Research ethics: research integrity, research safety in laboratories, the welfare of animals used in research, computer ethics, standards and problems in research ethics.

#### UNIT-III

Concept and connotations of rural development, rural development policies and strategies. Rural development programmes: Community Development Programme, Intensive Agricultural District Programme, Special group – Area Specific Programme, Integrated Rural Development Programme (IRDP), Panchayati Raj Institutions, Co-operatives, Voluntary Agencies/Non-Governmental Organisations. Critical evaluation of rural development policies and programmes. Constraints in implementation of rural policies and programmes.

#### Suggested Readings:

- Bhalla GS & Singh G. 2001. Indian Agriculture - Four Decades of Development. Sage Publ. Punia MS. Manual on International Research and Research Ethics. CCS, Haryana Agricultural University, Hisar.
- Rao BSV. 2007. Rural Development Strategies and Role of Institutions -Issues, Innovations and Initiatives. Mittal Publ.
- Singh K. 1998. Rural Development - Principles, Policies and Management. Sage Publ.

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## Faculty of Nursing

### ETHICS IN RESEARCH

**Course Code** : MGE01024  
**Duration** : 60 Hours (Theory+Practical)  
**Total Marks** : 100 Marks  
**Duration of Exam** : 2 Hours  
**Placement** : Open to final year students of all disciplines in SGT University  
**Venue** : Faculty of Nursing, D Block  
**Method of Teaching**: Blended mode (Online/Offline)

#### Course Description

This course is designed to enable students to develop an understanding of concepts of ethics in research to participate in need-based research studies in various settings keeping in mind all the ethical principles related to research.

#### Objective of the Course:

The aim of the course is to train students so as to equip them with Competencies to:

1. Describe various ethical aspects in research
2. Explain frameworks to propose solutions to ethical dilemmas.
3. Analyze the ethical issues around public health policies

#### Syllabus

Unit	Hours	Content	Teaching learning activities	Assessment method
1	3	Introduction to ethics and bioethics	Lecture & Discussion	MCQs and SAQs
2	2	The historical development of clinical and research ethics	Lecture & Discussion	MCQs and SAQs
3	15	The guidelines, codes and ethical principles in research	Lecture & Discussion	MCQs and SAQs
4	15	Ethical dilemmas and use of frameworks to propose solutions to ethical dilemmas	Lecture & Discussion	MCQs and SAQs
5	10	Ethical issues in the planning, conducting, analysing and reporting of research, and suggest methods to endure ethical conduct of research	Lecture & Discussion	MCQs and SAQs VIVA-VOCE

- The examination will be conducted by SGT university, Haryana.
- At the end of the course a test will be conducted to assess the performance of acquired knowledge and skills.
- In order to pass a candidate should obtain at least 50% marks respectively to test of this course. Certification:
- The certification will be awarded by the Faculty of Nursing, SGT university, Haryana at the end of the course.

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## Faculty of Law BA LL..B (Hons)

### LEGAL METHODS AND RESEARCH METHODOLOGY

Trimester : XII  
Course Code : 08011204

#### Course Objective:

This course will introduce the student to the academic study of various aspects of Legal methods and Legal Research. The students will learn about the various objectives and methods of Legal Education and will also learn about the various forms of Clinical Legal Education. The students will learn about the importance of Legal Research and will also be able to understand the forms of legal writing and their usage in the field of Law.

#### Detailed Curriculum

##### Unit – I

Introduction: Objectives of Legal Education, Method of Teaching: Lecture Method; Problem Method; Discussion method and Seminar Method.  
Examination System and Problems in Evaluation: External and Internal assessment.

##### UNIT II

a. Student Participation in Law School Programmes: Organization of Seminars, Publication of journal and assessment of teachers Clinical Legal Education: Legal aid, Legal literacy, Legal survey and Law reform.

Research Methods: Socio-Legal Research, Doctrinal and Non-doctrinal, Relevance of empirical research, Induction and Deduction.

##### Unit – III

Legal Writing and Research

- a. Legal materials – Case law
- b. Statutes, Reports, Journals, Manuals, Digests, etc.
- c. Importance of legal research
- d. Techniques of Legal Research
- e. Legal writings and citations

#### Course Outcomes:

After the completion of the course, the students will be able to:

1. Understand the various aspects of Legal Education and the various forms of imparting it.
2. Determine the importance of research in law and the importance of active participation in legal education.
3. Understand the various aspects related to legal writing and the various techniques of the same.

  
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