**Course Title:** Research methodology

**Course level:** Four credit course

**Course code:** HSR 801

**Course credits:** Four

**Mode:** Offline Real time Lecture based modules

**Course structure:** This course consists of 20 modules. Each module will contain:

**Course Schedule:** Wednesdays 4 to 7 PM (June to December)

**Syllabus**

<table>
<thead>
<tr>
<th>Session Titles</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction to Research Methodology</td>
<td>Course introduction, history of medical research, landmarks in medical research, basic concepts of research methodology</td>
</tr>
<tr>
<td>3. Hypothesis Testing – Means part I</td>
<td>Null versus Alternate Hypothesis, Type I &amp; Type II errors, Standard Error, Critical Value, Z test, Z table.</td>
</tr>
<tr>
<td>4. Hypothesis testing Means Part II</td>
<td>T distribution, degrees of freedom, t tests – paired t test, independent t test, Welch’s t test, assumptions for t test, one tail vs two tailed testing, Effect size options, Non-Parametric alternatives to T tests.</td>
</tr>
<tr>
<td>5. Hypothesis testing -Categorical data part I</td>
<td>Dichotomous data, Binomial distribution, One sample test for proportions, Assumptions for one sample test for proportions, Two independent samples test for proportions, Assumptions for two independent samples test for proportions.</td>
</tr>
<tr>
<td>6. Hypothesis testing -Categorical data part II</td>
<td>Chi Square distribution, Pearson’s Chi Square test, Assumptions for Pearson’s $X^2$, Yates Corrected $X^2$, Fischer’s Exact test, paired samples for proportions, Menenar’s $X^2$</td>
</tr>
<tr>
<td>7. Hypothesis testing -Categorical data part III</td>
<td>Special $X^2$ Tests – Mantel Haenszel $X^2$ for two factors, Mantel Haenszel $X^2$ for linear trend. Effect Size for categorical data analysis.</td>
</tr>
<tr>
<td>12. Simple Linear Regression</td>
<td>Ordinary Least Squares (OLS) method, regression line &amp; regression equation, regression coefficients, F table for regression, magnitude of effect in regression, Coefficient of Determination.</td>
</tr>
<tr>
<td>13. Multiple Linear Regression</td>
<td>Basics of Multiple Linear Regression, Anova Table in Multiple regression, Multiple correlation coefficient (MCC), R^2, Adjusted R^2, Reporting guidelines for multiple linear regression.</td>
</tr>
<tr>
<td>16. Survival Analysis Part B</td>
<td>Kaplan Meier Approach (KMA), Hazard function, Assumptions of Survival Analysis, comparing two or more groups in Survival Analysis, Cox proportional Hazards (PH)model - basics.</td>
</tr>
<tr>
<td>17. Study Designs A - Randomized Control Trials</td>
<td>Basics of Randomized Control Trial (RCT) design, Classification of RCTS, RCT designs, Components of RCT design, Analysis of data in RCTs, interpreting results of RCTs, Bias in RCTs.</td>
</tr>
<tr>
<td>18. Study Designs B - DAS (Diagnostic Accuracy Studies)</td>
<td>Basics of Diagnostic accuracy designs, Evaluation of a Diagnostic accuracy study (DAS), Diagnostic accuracy parameters, Comparing performance of two DAS, bias in DAS.</td>
</tr>
</tbody>
</table>
References: (Books)

1. Biostatistics - The Bare Essentials (4th Edn) by Geoffrey R Norman PhD & David L Streiner PhD.


Course Lead and Instructor

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Email drmanuraj@gmail.com, manuraj@aims.amrita.edu
Title of the course: “An Introduction to Indian Philosophy”

Course code: HSR 802

Credits : 1

Course Director : Mr Sivakumar V, Research Professor, Dept HSR

Course Description:

This course work has been designed to sensitize research scholars regarding the moral and ethical foundations enunciated by the philosophical traditions of Indian culture which in turn could be expected to have a positive bearing on the means, methods and output of their research work.

Syllabus:

1. Introduction to Philosophy
2. Western and Eastern Philosophical thoughts
3. Indian Philosophy
4. Religion and Philosophy
5. Role of Metaphors
6. Synthesis of Cultures
7. Evolution of newer linguistic, cultural stands and its political influence
8. Indian Culture: Standing the test of Time
9. Modern Sciences and Philosophy
10. Spirituality as the core of religious philosophy
11. Spirituality and Mind
12. Mechanism of accessing Intuition
13. Life and Teachings of noted saints of India

References:

The Story of Philosophy- Will Durant
Philosophy of Religion- Dr. S. Radhakrishnan
Collected works of Swami Vivekananda
Self-Realization- Arthur Osborne
The Conscious Universe- Dr. Dean Radin
Entangled Minds- Dr. Dean Radin
Prinicpal Upanishads
Bhagawad Gita.
The quality and credibility of research is dependent on the integrity of the researchers who have a significant social responsibility to abide by the standards prescribed for their professions and by their institutions and also to be guided by the applicable regulations and guidelines. Responsible Conduct of Research (RCR) involves components such as planning and conducting research, reviewing, and reporting research, responsible authorship, and publication of the research work. The research team should maintain highest standards to uphold the fundamental values of research. These principles must be followed for safeguarding the dignity, rights, safety, and well-being of research participants and for maintaining the research integrity.
**Course Title:** Integrity in Research and Publication (IRP)

**Course level:** Two credit course

**Course code:** 807IRP

**Eligibility:** PhD Scholars

**Overview**

The IRP course is for 10 weeks. The course is offered online. There will be two classes per week for 1.30 hours duration for 8 weeks. There are ten modules in this course which included Lectures, Assignments and Evaluation.

**Days of the week:** Wednesday and Saturday.  **Time:** 2 pm to 3.30 pm

Each module will contain:
- A lecture class - video
- Study materials for pre-reading and further reference
- Assignments
- Evaluation
- Slides/handouts of the sessions (which will be uploaded after the lecture)

- The course is offered by Google Classroom so, it is recommended to use a Gmail account in case such features are not accessible through non-Gmail accounts.
- Candidate progress will be monitored by Assignments submission, Evaluation of module and attendance

**Evaluation:** Each candidate must attend the online class, complete the evaluation and the assignments, will be eligible to write final evaluation at the tenth week. The online evaluation consists of the 100 MCQs questions for 3 hours of duration. Following successful completion of the final evaluation, the certificate will be issued.
<table>
<thead>
<tr>
<th>Modules</th>
<th>Unit title</th>
<th>Description</th>
<th>Lectures Hours</th>
<th>Activity</th>
<th>Reading Hours</th>
<th>Assignment Hours</th>
<th>Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRP-01</td>
<td>Philosophy of Ethics</td>
<td>Introduction to Ethics and Morality, moral philosophies, and moral judgements.</td>
<td>1</td>
<td>Case Scenario</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IRP-02</td>
<td>Science &amp; Ethics</td>
<td>Science and Ethics</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>IRP-03</td>
<td>Historical Perspectives of Research Ethics</td>
<td>Historical cases studies of ethical violation in medical research</td>
<td>1</td>
<td>Video</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>IRP-04</td>
<td>Ethical Evaluation of Research</td>
<td>Ethical review procedures, Informed consent process, Privacy and Confidentiality, Justice, Vulnerable populations, Risk Benefit analysis, Standard of care, Post trail Access, Therapeutic misconception Guidelines</td>
<td>4</td>
<td>Case Scenario</td>
<td>2</td>
<td>1</td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>IRP-05</td>
<td>Research Integrity</td>
<td>Introduction to Research Integrity, Mentorship, Whistle blowing, Data integrity, Conflict of Interest, Authorship</td>
<td>2</td>
<td>Case Scenario</td>
<td>1</td>
<td>2</td>
<td>2 &amp; 3</td>
</tr>
<tr>
<td>IRP-06</td>
<td>Scientific Misconduct</td>
<td>Historical classical cases studies of scientific misconduct in research, Scientific Misconduct, Fabrication, Falsification, Case studies</td>
<td>1</td>
<td>Case Scenario</td>
<td>1</td>
<td>1</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>IRP-07</td>
<td>Publication ethics</td>
<td>Best practices in Publications, Publication metrics, Databases, Plagiarism, Publication misconduct, Authorship process, Statistical integrity, Negative results publications, Peer Review, Spin Publications</td>
<td>4</td>
<td>Case Scenario</td>
<td>1</td>
<td>2</td>
<td>4 &amp; 5</td>
</tr>
<tr>
<td>IRP-08</td>
<td>Special areas of research</td>
<td>Animal Research ethics, Public Health Ethics, Records based research, Social and Behavioural research</td>
<td>2</td>
<td>Case Scenario</td>
<td>1</td>
<td>1</td>
<td>6 &amp; 7</td>
</tr>
<tr>
<td>IRP-09</td>
<td>Redressal in Scientific &amp; Publication ethics</td>
<td>Integrity Practices, Clinical Trail Registry, Policy on research and publication ethics, Incidental Findings, Reporting Requirements in Biomedical Research, Cultural Competence in research</td>
<td>3</td>
<td>Problem Solving</td>
<td>1</td>
<td>1</td>
<td>7 &amp; 8</td>
</tr>
</tbody>
</table>
Certification

Successful completion of course online certificate will be awarded from the Amrita Institute of Medical Sciences, Cochin

Course Lead and Instructor/Speaker

Chandrashekar Janakiram
Diplomate, American Board Dental Public Health
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Course WhatsApp 62388 28409
PHILOSOPHY AND THEORETICAL FRAMEWORK OF NURSING

Course Code: ACN801

Course overview:

The aim of this course is to develop the philosophical basis of Nursing and the application of theoretical as well as conceptual frameworks based on the philosophy of Nursing with special emphasis on human welfare through research.

Objectives:

Upon completion of this course, the research scholars will be able to:

1. Analyse the philosophical background that influence the nursing phenomenon
2. Describe strategies for concept and theory development
3. Evaluate theories used in nursing practices
4. Demonstrate skill in developing and testing conceptual models that has an impact on nursing science.
5. Examine interrelationship among science, theory, practice and research in nursing

Course Content:

1. Philosophy of nursing science (2 hrs)
2. Development of nursing knowledge (2 hrs)
   - Historical roots
   - Domains of nursing
   - Paradigms in nursing
   - Knowledge development
3. Paradigms that influence approach to nursing science development. (2 hrs)
4. Basics of nursing theories – A review
   - Importance of theories in nursing (1 hr)
   - Classification of theories in nursing (1 hr)
   - Strategies & issues in theory development (2 hrs)
5. Nursing theories – Analysis and Application
   - Analysis of selected nursing theories (8 hrs)
   - Application of nursing theories (12 hrs)