Mangalore University

Department of PG Studies and Research in Computer Science, Mangalagangothri- 574199.

Preamble:

As per the communication from the UGC & University **(Ref. No: MU/ACC/CR.67/2020 - 21/A2 Dated.12.08.2021)** number of courses for the Ph.D. programme course work in Computer Science has been updated totally three courses. **Course - 1: Research Methodology, Course - 2: Research and Publication Ethics [RPE] and Course - 3: Review of literature**

Accordingly PG BOS in Computer Science revised and updated the syllabus with the **Course - 1 as - CS01, Course 2 as CS02** and **Course 3 as CS03** also decided to frame the Regulation governing the Ph.D course work in Computer Science as per the norms of the University.

Eligibility for Admission: Holders of Master Degree in Computer Science/ Information Science/ Computer Science and Engineering/ Information Technology/MCA or its Equivalent

Papers	Particulars	Hours of Instruction per week	Duration of Examination (hrs)	Marks			Credits
				IA	Theory	Total	
Course - 1	CS01: Research Methodology	4	3	30	70	100	4
Course - 2	CS02:Research and Publication Ethics (RPE)	2	3	30	70	100	2
Course - 3	CS03: Review of Literature Review Report	16	-	-	-	150	8
	Viva	-	-	-	-	50	-
TOTAL						400	14

Course - 1

CS01: Research Methodology

Hours/Week: 4
Credits: 04

I.A. Marks:30
Exam. Marks: 70

UNIT – I

14 Hrs.

Fundamentals of Research: Introduction to Research issues in computer science, the objectives and dimension of research. Exploring research in computer science, browsing the periodicals sections of the library. **Tools of research:** General tools of research, library and its resource as a tool of research, the computer and its software as a tool of research, measurement as a tool as research, different measurements, statistics as a tool of research, the human mind as a tool of research, language as tool of research. Open research tools. **Focusing your research efforts:** Identifying and describing the research problem/project, stating the research problem, identifying sub - problems and its characteristics, stating the hypotheses, preparing a research proposal, a sample research proposal.

UNIT - II

14 Hrs.

Reviewing the Related Literature: Role of review, locating related literature, using library catalog indexes, abstracts, and other general reference, using the library's online database, organizing information collected, evaluating, organizing and synthesizing the literature, writing a sample research proposal. **Research planning:** planning a research proposal, basic format of a research proposal, research planning versus research methodology, general criteria for a research project, role of data in research, linking data and research methodology, comparing quantitative and qualitative approaches, **Writing the research proposal:** Organizing a research proposal, practical applications.

UNIT - III

14 Hrs.

Quantitative Research Methodologies: Descriptive research Design, correlation research, development design, computerizing data collection in descriptive research, using the internet to collect questionnaire data, choosing a sample in descriptive study, sampling design, sampling in surveys of very large population, identifying a sufficient sample size, Bais in research sampling, population analysis for a descriptive survey.. **Strategies for Analyzing Quantitative data:** Exploring and Organizing a data set, analyze data, functions of statistics, considering the nature of data, descriptive statistics, the point of central tendency, measures of variability. Dispersion and deviation, measures of association: correlation, inferential statistics, estimating population parameters, testing hypotheses, meta-analysis, using statistical software packages interpreting the data, general computational tools.

UNIT - IV

14 Hrs.

Preparing The Research Report: planning a research report, description of research, description of methods, presentation of the data, interpretation of the data, concluding the report, s graphic organizer for the research report, organizing the research report, the principles of writing, practical applications, **plagiarism:** Introduction, occurrence of plagiarism, types of plagiarism maintenance, open source plagiarism tools.

Reference Books:

1. Paul D Leedy, and Jeanne Eills Ormord, Practical Research Planning, and Design, Person publication, 11th Edition, 2015.(Chapters 1,2,3,4,5,6,9,11nad 12)
2. MICHAEL P. MARDER, Research Methods of Science, Cambridge University Press, 2011 (Chapter-3 & 4)
3. Diane Pecorari, Teaching to Avoid Plagiarism: How to Promote Good Source use, 2013, Open University Press. (Part-I and Part-II)

Course - 2

Hours/Week: 2
Credits: 02

I.A. Marks:30
Exam. Marks:70

CS02: Research and Publication Ethics (RPE):

Details Syllabus have been enclosed in PDF form as per the recommendation and norms of UGC.

Course - 3

Hours/Week: 16
Credits: 08

Literature Review Report Marks:150
Viva Marks:50

CS03: Review of Literature

Contents of the review of literature are based on the research field under the direction of Research Supervisor. Content of the Review report shall include the art of research work analysts, related implementation issues and motivation for the stated research problem.

Assessment of the complete course is based on the report of Literature review and concern review report viva.

ज्ञान–विज्ञान विमुक्तये

प्रो. रजनीश जैन
सचिव
Prof. Rajnish Jain
Secretary

सत्यमेव जयते

विश्वविद्यालय अनुदान आयोग
University Grants Commission
(मानव संसाधन विकास मंत्रालय, भारत सरकार)
(Ministry of Human Resource Development, Govt. of India)
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D.O.No.F.1-1/2018(Journal/CARE)

December, 2019

Respected Sir/Madam,

University Grants Commission in its 543rd meeting held on 9th August, 2019 approved two Credit Courses for awareness about publication ethics and publication misconducts entitled **"Research and Publication Ethics (RPE)"** to be made compulsory for all Ph.D. students for pre-registration course work (**attached as Annexure**).

In view of the above, you are requested to ensure that the above two Credit courses may be made compulsory for all Ph.D. students for pre-registration course work undertaken in your University from the forthcoming academic session.

With regards,

Yours sincerely,

(Rajnish Jain)

TO THE VICE-CHANCELLORS OF ALL UNIVERSITIES

ANNEXURE

Course Title:

- **Research and Publication Ethics (RPE)**-Course for awareness about the publication ethics and publication misconducts.

Course Level:

- 2 Credit course (30 hrs.)

Eligibility:

- M.Phil., Ph.D. students and interested faculty members (It will be made available to post graduate students at later date)

Fees:

- As per University Rules

Faculty:

- Interdisciplinary Studies

Qualifications of faculty members of the course:

- Ph.D. in relevant subject areas having more than 10 years' of teaching experience

About the course

Course Code: CPE- RPE

Overview

- This course has total 6 units focusing on basics of philosophy of science and ethics, research integrity, publication ethics. Hands-on-sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools will be introduced in this course.

Pedagogy:

- Class room teaching, guest lectures, group discussions, and practical sessions.

Evaluation

- Continuous assessment will be done through tutorials, assignments, quizzes, and group discussions. Weightage will be given for active participation. Final written examination will be conducted at the end of the course.

Course structure

- The course comprises of six modules listed in table below. Each module has 4-5 units.

Modules	Unit title	Teaching hours
Theory		
RPE 01	Philosophy and Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publication Ethics	7
Practice		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Databases and Research Metrics	7
	Total	**30**

Syllabus in detail

THEORY

- **RPE 01: PHILOSOPHY AND ETHICS (3 hrs.)**

1. Introduction to philosophy: definition, nature and scope, concept, branches
2. Ethics: definition, moral philosophy, nature of moral judgements and reactions

- **RPE 02: SCIENTIFICCONDUCT (5hrs.)**

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

- **RPE 03: PUBLICATION ETHICS (7 hrs.)**

1. Publication ethics: definition, introduction and importance
2. Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

PRACTICE

1. Open access publications and initiatives
2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

- **RPE 05: PUBLICATION MISCONDUCT (4hrs.)**

A. Group Discussions (2 hrs.)

1. Subject specific ethical issues, FFP, authorship
2. Conflicts of interest
3. Complaints and appeals: examples and fraud from India and abroad

B. Software tools (2 hrs.)

Use of plagiarism software like Turnitin, Urkund and other open source software tools

- **RPE 06: DATABASES AND RESEARCH METRICS (7hrs.)**

A. Databases (4 hrs.)

1. Indexing databases
2. Citation databases: Web of Science, Scopus, etc.

B. Research Metrics (3 hrs.)

1. Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
2. Metrics: h-index, g index, i10 index, altmetrics

References

Bird, A. (2006). *Philosophy of Science*. Routledge.

MacIntyre, Alasdair (1967) *A Short History of Ethics*. London.

P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN:978-9387480865

National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. National Academies Press.

Resnik, D. B. (2011). What is ethics in research & why is it important. *National Institute of Environmental Health Sciences*, 1–10. Retrieved from https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm

Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179–179. https://doi.org/10.1038/489179a

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