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Action Plan for
**Pre-Ph.D. Course Work for all
Faculties**
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By

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Pre Ph.D Course 2022

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1. Introduction:

Research plays an important role in the growth of a country. It refers to a creative work which is undertaken to in a systematic manner to increase one's stock of knowledge. The significance of research arises from its promotion of creative thinking; finding solutions to impending problems in a methodical, scientific and well-determined way; promoting further studies in the area of interest and keeping abreast with the latest developments in the selected field of study.

The innate talents of our researchers must be nurtured and fostered to make a mark in the national and international arena. All this call building the ability of innovation and creativeness amongst the research scholars. Moreover, the Scholars need to be trained for doing productive and significant research. This generates the need to design Pre PhD-Coursework. All the admitted candidates to PhD degree shall undergo Pre-PhD Course Work in accordance with the regulations of the university.

2. Objectives:

The objectives of the Pre-Ph.D. Course Work are:

1. To endow the student with adequate knowledge to understand research.
2. To equip research scholar with research methodology, advanced statistics and research integrity and ethics
3. To motivate research scholars to make original and significant contributions to the scientific knowledge based on their area of research.
4. To create awareness about productive research career including publications and project grants.
5. To create deep understanding about the following with respect to research topic:
 - **Knowledge:** relate, define, describe, identify, indicate
 - **Application:** apply, demonstrate, measure, illustrate
 - **Analysis:** appraise, analyze, identify, deduce, measure
 - **Comprehension:** assess, compare, classify, predict, understand
 - **Evaluation:** determine, measure, project, evaluate, determine, compare
 - **Synthesis:** construct, create, compose, develop, integrate, formulate

3. Course Details:

3.1 Structure of the Course: As per the ordinance of university and in light of the guidelines The UGC (*Minimum Standard and Procedure for award of M.Phil or Ph.D. Degree*) Regulation, 2016. In supersession of The UGC (*Minimum Standard and Procedure award of M.Phil or Ph.D. Degree*) Regulation, 2009 with effect from 03 Oct 2016, the proposed course work shall be based on two papers (Paper I and Paper II) including exam evaluation work composed of 16 Credits and the total contact hours 240 hours.

Paper	Title of the paper	Credits	Total Hours
I	Research Methodology		
	a) Review of Literature relevant field, Research Ethics	1	
	b) Quantitative Methods	2	
	c) Computer Application	1	
	d) Hands on instrumentation	2	
	Total	06	90
II	Advanced level courses in respective subject/Thrust area of respective subject	6	90
	Seminar	2	30
	Exam Evaluation (Paper I and Paper II)	2	30
Total Credits (Paper I, Paper II and Exam)		16	240

3.2 Course Contents: Paper I Research Methodology

Unit I : Research Fundamentals:

Introduction: Definition, research career, essentials for research career, objectives of the research, characteristics of the research, what makes people to do research, importance of research, pre-requisite for research.

Unit II : Identification of Research Problem :

Types of research, why-why analysis, defining the research problem: Identification of research problems, selection of research problem, facts one should know regarding selection of research problem, the process of research problem definition, some facts involved in defining research problem

Unit III : Formulation of Research Problem :

Difficulties encounter while doing research, overview of science and the scientific method, empirical approach, essentials and dispensable in research, formulation of the problems: steps involved in defining a problem: i) Selection of problem/Broad topic for research ii) Literature review iii) Fine tuning of research topic iv) Formulation of hypothesis v) Formulation of objectives & Methodology of the study vi) Preparation for collection of data vii) Collection of data viii) Interpretation / analysis of data ix) Evaluation of data and testing of hypothesis x) Making corrections in hypotheses and repeating steps (v to ix) xi) Writing the report.

Unit IV : Research Report and drafting Research Proposal :

Types of research reports : Pre-Ph. D. Synopsis / Synopsis for Projects (beginning) , Ph. D. Synopsis (End) / Synopsis for Projects , Ph. D. Thesis / Project Report, Manuscript of Research Paper, Research Proposal for fellowship / funding, Outline of Pre-Ph. D. Synopsis ; Outline of Ph. D. Synopsis (End) / Synopsis for Project : ; Outline of Ph. D. Thesis / Project Report ; Introduction to research proposal writing: Overall Organization of Project Proposal, Essentials for a Funded Proposal, Key Aspects of Drafting Research Proposal, Research Continuum : Background Preparation for Research project, Criteria for Good Research Problem for Project, Overall Organization of Research Proposal, Title of Research Project, Abstract / Summary, Introduction / Background, Origin of the Proposal, Hypothesis, Goals and/or Objectives of Research, Specific Aims, Significance and Impact, Methodology, Work plan and schedule, Budget, All other Operating Grants, Ethical Considerations, Outcomes / Results and Beneficiaries, Bibliography / References and Annexures, Referees, Co-applicants, Applicant's CV details, General Thoughts, Format of UGC Project Proposal, Format of the Proposal under Extramural Research (EMR) Scheme of SERB, DST, ICSSR research proposal format, Indian Research Funding Agencies, General Foreign or International Funding Agencies, Opportunities for Research Scalars.

UNIT V : Drafting Scientific Manuscript

Key aspects of drafting of scientific manuscript (Novelty, Social Relevance / National Importance, Credibility / Credential of Research Scholar, Drafting skills of Research Scholar), common content errors, useful resources, background (author's perspective), Author Publishing priorities, Identification of journal, Author Priorities for Journal Selection, Reader's priorities, ethical issues, style and language, article submission process, Manuscript Template, Title of the Manuscript, Title page, Abstract, Introduction, Experimental Details, Material and Methods, Statistical Methods, Results, Tables and Figures, Discussion, Acknowledgements/Funding, Reference section, General rules, After Submission, Overview of Peer Review Process, Publishing Tips, Final advice.

References:

1. Research Methodology by Dr. S. L. Gupta, Hitesh Gupta; International Book House Pvt Ltd (**2013**), ISBN-10: 8191064278, ISBN-13: 978-8191064278
2. Basic Research Methods-Gerard Guthrie SAGE Publications, India, Pvt Ltd, New Delhi (**2010**), ISBN-10: 8132104579, ISBN-13: 978-8132104575
3. Research Methodology-methods and techniques By C. R. Kothari, New Age International Publishers (**2011**) ISBN 978-81-224-1522-3
4. Principles of Research Methodology- Phyllis G. Supino, Jeffrey S. Borer; Springer, Verlag New York (**2012**), ISBN-ebook: 1461433592, ISBN (Hardcover): 978-1461433590
5. Research Design Qualitative, Quantitative. and Mixed Methods Approaches- John W. Creswell; SAGE Publications Ltd, UK (**2011**), ISBN-9780857023452
6. Research Methodology -A Step-by-Step Guide for Beginners- Ranjit Kumar; Sage Publications Ltd (**2010**), ISBN- 1849203016.
7. Scientific Writing and Communication- Angelika Hofmann; Oxford University Press, US (**2010**), ISBN-13-: 978-0 199947560, ISBN-10: 01 99947562
8. Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded- Joshua Schimel, Oxford University Press, (**2011**), ISBN: 9780199760237
9. Handbook of Scientific Proposal Writing- A.YavuzOruc; CRC Press, Taylor & Francis group (**2011**), ISBN: 9781439869185

ii) Quantitative and Statistical Methods

Data Collection: Sources of Data – Primary and Secondary, Types of Data – Categorical (nominal and ordinal), Numerical (discrete, continuous, ratio and interval). Methods of Data Collection:

Survey, Interviews (in-depth or Key Informant interviews), Focus Group Discussion (FGD), Observation, Records and Experimental Observations.

Sampling methods: basic of sampling, need of sampling method, sampling errors types of sampling (Probabilistic and Non Probabilistic sampling) and sample size. Design of questionnaire, validity and checking of questionnaire. Data processing, editing of data and data cleaning

Introduction of statistics – Functions – Limitations- Graphical representation with statistical software – Measures of central tendency - Arithmetic mean – Median – Mode, measure of dispersion – Range, quarter deviation , Standard deviation – Co-efficient of variation (Discrete series and continuous series) – Correlation, Types of correlation, Karl Pearson’s correlation, Spearman rank correlation, coefficient of determination(R^2) ,Regression – Simple and Multiple Regression/ logistic regression, multicollinearity analysis, multivariate analysis :Principal component analysis, Discriminate analysis

Hypothesis testing: Types of hypothesis, level of significance, errors in testing hypothesis, Parametric and Non Parametric Tests: Meaning and purpose of parametric test and non-parametric test.

Experimental Designs: Meaning and purpose of basic experimental design and basic types of errors, basic principal of experimental design, types of basic design (CRD,RBD and LSD) and its need ANOVA one way and two way ANOVA , multiple comparison test. Basic of Factor-Analysis.

Parametric and Non Parametric Tests: Meaning and purpose of parametric test and non-parametric test - Difference between parametric and non-parametric test, “H” test, its meaning, purpose; assumptions and uses, Analysis of variance technique of “F” test, Analysis of co-variance technique, Regression, step regression, X^2 -test, its purpose and use, Median test and sign test

Advanced Technique of Correlation: Meaning and purpose of correlation, Correlational technique - Contingency, Phi-correlation, Person’s correlation, Multiple-correlation, Factor-Analysis Technique with special reference to centroid method. Use of Statistical Software in data analysis

Statistical analysis by using SPSS (For Social Science) /R Programming (For Sciences and Technology): Introduction of SPSS/ R Programming, input of data and coding in SPSS/ R Programming

iii) **Computer Application in Research:** Use of computers in - Data processing, Word processing, Presentation software’s, Graphical processing Different phases of research.

iv) **Hands on Instrumentations** – The objective of Hands-on-Instrumentation section is to provide details of the research infrastructure available at the research center / department. The students are exposed to the different instrumentations available with the research center / department. The

research students are required to submit the report on the experimental work if any done by the student by using instruments available at research center / department. The Head of research center/ department will provide the necessary help required in smooth conduction this section of research methodology.

Paper II Advance level courses in respective subject (Thrust Area) : The research center/ department will be advised to provide maximum six research thrust areas to be offered based on the specialization of research guides associated with the research center / department. In this case, if research center / department offered six research thrust areas then each thrust area is to be offered for 1 credit (15 Hrs.) each. The departmental coordinator and head of research center /department will prepare the syllabus of Paper II and communicate the said to the Pre Ph. D. Course coordinator. The course content will also be shared with the students in well advance by the concern research center/ department.

Coursework Exemption:

Exemption in course work will be applicable only if scholar has done M.Phil. with 55% or equivalent grade ‘B’ in the UGC 7-point scale through regular mode from LPU or any other recognized university.

3.3 Execution of Course Work: The mode of execution of the course will be in off-line and online (Through Swayam courses) with the permission of the university. There will be common syllabus consisting the fundamental aspects of the subject that will bring new insight to the research student and will be benefitted with concerned knowledge.

	Mode	Autumn Term	Class Timings	Place of conduction
Option I	Offline	August to October	10:00 A.M.- 05:00 P.M.	HRDC, Dr.B.A.M.University Aurangabad
Option II	Online	August to December	Online (Through Swayam Courses)	Courses will be offered by Swayam Can be seen on www.swayam.gov.in

Induction programme will be conducted before the start of every coursework option.

After successful registration for Pre PhD coursework on University portal the Course will be executed for 16 credits in offline mode in Human Resource Development Center, Dr. B. A. M. University, and Aurangabad.

Option II:-Research scholar who wish to gain Credit through Swayam courses need to consult with the university Swayam coordinator and department Swayam coordinator for the selection of courses. The university Swayam coordinator is Professor B.W.Gawali, contact details: - 9011652174.

Instructions to the Students opting PrePhD coursework through Swayam

- Student has to gain 12 credits inclusive of paper1 (Research Methodology) and paper2 (Subject DOMAIN) for fulfilment of pre phd coursework through swayam .
- Two credits for the seminar will be in consultation with research guide.
- Credits Hands on instrumentation section need to be gained through visits to different labs / library of Dr.B.A.M.University .

Conduction Process for coursework through Swayam

- Student is advised to pay process and documentation fees 1000/- towards Dr.B.A.M.University.
- Courses delivered through SWAYAM are available free of cost for enrolment to the course for the learners, however **learners wanting a SWAYAM certificate** should register for the final proctored exams that come at a fee and attend in-person at designated centres on specified dates.
- The examination fee for each course is Rs. 1000 for general applicants and Rs. 500 for SC/ST/OBC/PwD candidates with more than 40% disability.
- Central Swayam Cell and Coordinator will design subject wise segregation of registration
- Central Swayam Cell and Coordinator will advise the courses for paper 1 (Research Methodology) and paper2 (subject based) from list of offered courses by UGC.
- Enrolment of the students to the advised courses will be mentored by department Swayam coordinator.

- Student will be mentored by Department Swayam coordinator for smooth conduction
- After successful completion of the course students will undergo Swayam examination by paying above said fees as applicable.
- After successful completion of the examination students will submit score card cum certificate to HRDC,Dr.B. A.M. University.
- After receiving the certificates for 12 credits gained by students from swayam,Two (2) credits from research guide towards evaluation of Seminar,and two (2) credits for examination and evaluation, HRDC will release Certificate for completion of Pre PhD coursework.

Medium of Instruction

For Offline Courses:

The medium of instructions, writing and presentation shall be English/Hindi/Marathi (as per subject need) language throughout the course of Ph.D.

For Online Courses

The medium of instructions, writing and presentation shall be English.

The execution of the Course Work will be conducted in following way.

02. Paper I – Research Methodology: This course shall be conducted in common for all discipline / faculties. The classroom conduction will be for almost 60 Hrs. Similarly, the students will also be provided an exposure of different learning resources (at max 15 Hrs. out of 90 Hrs.) and tutorials / home assignments / surveys / quizzes / other essential learning activities decided by the faculty during classroom teaching (for max 15 Hrs. out of 90 Hrs.)

ii. Paper II – Thrust area of respective subject: This course is subject specific, therefore the said course will be conducted through the department coordinator and head of research center/department at the research center / department. At the time of conduction of the course, it is essential to allocate maximum 60 hours for classroom teaching and learning, where are round15 Hrs. may be spent for library work for collection of references essential for the research work of student. Similarly, maximum 15 Hrs. collectively among all thrust areas may be spent towards tutorials / home assignments / surveys / quizzes / other essential learning activities provided by the faculty during

classroom teaching. The students are advised to prepare the report on the library and tutorial work assigned to them.

3.4 Learning Pedagogy: The course work will be conducted in accordance to the guidelines mentioned in execution of course work (3.c). the course will be conducted on the premises of the UGC-HRDC / department and coordinated by the Pre Ph. D course coordinator.

1. **Application to the course:** The students may join the Pre Ph.D. Course by submitting application form online as directed by the university in Course work Notification with payment of appropriate fees and submit the hardcopy to the UGC-HRDC office.

S.N.	NATURE OF WORK	PRESCRIBED FEE IN Rs.
	Offline Fee Structure	
01	Admission fee/ Registration Fee/ Examination Fee to be paid with the application towards University	500/-
02	Course Fee to be paid immediately after	3,000/-
	Online Fee Structure	
01	For Students Opting PrePhd Coursework from Swayam They need to pay process and documentation fees towards Dr. B.A.M.University.	1000/-
02	Swayam offers 3 credit and 4 credit courses. For 3 credit course 4 courses are required. For 4 credits 3 Courses are required Note: The medium of instruction of these courses is in English language	The examination fee for each course is Rs. 1000 for general applicants and Rs. 500 for SC/ST/OBC / PwD candidates with more than 40% disability

2. **Joining to the course:** The students are advised to contact the Central coordinator/HRDC office for any information related to the Pre Ph.D. course work. The students are advised to provide the email address and WhatsApp contact number to the central coordinator. Student will receive all communication on the preferred communication address of the students.

4. Assessment and Evaluation:

Grade in the course work including research methodology shall be finalized after a combined assessment by the Research Advisory Committee / Departmental committee of research center / Department. A Ph.D. Scholar must obtain a minimum of 55% of marks or its equivalent grade or CGPA, in the course work in order to be eligible to continue in the program and submit the thesis as per the ordinance of the university.

The evaluation of Paper I Research Methodology will be for 100 marks. The distribution of 100 Marks for various component of Paper 1 is as follows:

- Literature Review - 30 Marks . Research scholar has to submit the Literature Review of his research topic at the end of the coursework in standard research paper format.
 - Quantitative Methods – 30 Marks. Research Scholar will provided with 6 assignments. He/She has to complete and submit it to the coordinator. Each assignment will be for 5 marks.
 - Computer Application – 20 Marks .Research Scholar will provided with 4 assignments. He/She has to complete and submit it to the coordinator. Each assignment will be for 5 marks.
 - All above (LiteratureReview+Quantitative Methods + Computer Application) = 80 Marks
 - Final Online MCQ exam will be of 20 Marks.
- The evaluation of the paper I Research Methodology will be for 100 marks.

The evaluation will be subjective and multiple choice question with 80:20 pattern i.e 80 marks for paper I will be distributed as :-

Paper	Title of the	Submissions	FA	Total
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	paper			
I Research Methodology				
a) Quantitative Methods:	80	20 (MCQ online Examination)	100	
b) Computer Application:				
c) Review of Literature relevant field, Research Ethics				
d) Hands on instrumentation/ Tutorial				
Total Paper - I Marks			100	

- The paper II thrust area/subject domain will be conducted in school/cluster mode. The evaluation of the paper will be for 100 marks.
 - The evaluation for paper II will be again 80:20 pattern where 80 marks will be for subjective in the form of assignments/tutorials/case studies. Research Scholar will be provided with 4 assignments. He/She has to complete and submit it to the coordinator. Each assignment will be for 20 marks.
 - Final Online MCQ exam will be of 20 Marks.

II Advanced level courses in respective subject			
a) Thrust area of respective subject	80 (submission) 4 assignment each of 20 marks	20 Marks (Online MCQ Examination)	100
b) Seminar		100	100
Total Paper II Marks		200	
Total Marks (I+II)		300	

Seminar will be based on research advances in respective subjects for 100 marks which will be evaluated by the research supervisor/guide of the student.

4 General Guidelines

a) Roles and Responsibilities of the Student

Following general guidelines and code of conducts are provided for the students attending the course.

- Students must attend all the classes.

- The students required to fulfill the technical assistance required for taking the course.
- Student will required to follow the code of ethics for the online/offline classes conducted in the Pre Ph.D. Course work.
- The student those have availed leave for attending the course must submit their reliving certificate of the institute to the department coordinator. Upon completion of the course student will be provided reliving certificate to the student so that it can be submitted to their host institutes.
- The classroom discipline must be observed by all the research students.
- The 85% of theory class attendance will be mandatory to appear for the examination.
- The absence in the class in case of any unavoidable circumstances should be communicated to coordinator for Paper I and department coordinator for paper II.
- Students are advised to keep in touch with the department coordinator for all his queries.
- In case of any escalation of grievances, the student may reach to the coordinator of Pre Ph.D. Course work through department coordinator.

b) Roles and Responsibilities of the Department Coordinators

- Attend all meetings scheduled by the coordinator of Pre PhD Course.
- Act as first POC (Point of Contact) for the students of the course of the concern subject.
- To Provide the List of Expert as per nomination of department for the conduction of classes on the curriculum of Paper II.
- Departmental Coordinator need to maintain
- The record of attendance, assignments of students with respective to Paper-II
- Organize and schedule the online lectures of Paper II as per earmarked thrust area
- Coordinate in designing MCQ based question bank on each topic of thrust area
- Coordinate in setting the MCQ based question paper from question bank
- Actively participate in organizing examination related activity of the students registered for Pre PhD course.
- Provide expert for Final Seminar Evaluation.
- Prepare the comprehensive result sheet of the student.

All the above responsibility performed by the department coordinator will be under the supervision of **DRC Chairman**.

5 Grievances

The student may contact to the coordinator of Pre Ph.D. Course work on prephdcourse@bamu.ac.in for the grievances if any. All grievances must be submitted to the Coordinator Pre Ph. D Course work through Department Coordinator and Head of the research center / department. The coordinator of Pre PhD Course work will provide the updates about the grievances to the students. All grievances will be discussed in the committee meeting of the head of research center / department.

6 Certifications

Students those have found successful in the examinations conducted in the Pre Ph.D. Course work will be awarded with certificate of completion of the course.

7 Committees

There are several committees are prepared as per the requirement for smooth execution of the program. The approval for these committee be acquired from the university. The Coordinator of Pre Ph.D. course work is authorized to formulate the committee as per requirements.

8 Conflict of Interest

There is no conflict of interest noted and will be as per the ordinance of university and in light of the guidelines The UGC (*Minimum Standard and Procedure for award of M.Phil or Ph.D. Degree*) Regulation, 2016. In supersession of The UGC (Minimum Standard and Procedure award of M.Phil or Ph.D. Degree) Regulation, 2009 with effect from 03 Oct 2016.

This action plan is tentative and subject to the feasible modification required time to time.

9 Committee for the Pre Ph. D Course Work

Professor Mustajeeb, Director UGC-HRDC

Professor Bharti Gawali, Coordinator, Pre-PhD Course work

Technical Committee

- Dr. Mohammad Raffey
- Dr. PravinYannawar
- Shri Yashpal Salve

Examination and Evaluation Committee

- Professor Bharti Gawali,
- Dr. Bhaskar Sathe
- Dr. Ganesh Manza,

Coordination Committee for Paper I

- Professor. Bharti Gawali
- Dr. PravinYannawar
- Dr. Bhaskar Sathe
- Dr. Kailas Ambhure

Grievance Committee:

- Professor Mustajeeb Khan
- Professor Bharti Gawali
- DRC chairman of concern subject
- Department Coordinator of concern subject