



### परिपत्रक

या परिपत्रकाद्वारे सर्व संबंधितांना सुचित करण्यात येते की, विद्यापीठाचे परिपत्रक पदव्युत्तर/कोर्सवर्क/२०१०-११/१९३१, दिनांक ११/१०/२०१० नुसार जून/जुलै २००९ व तदनंतर पीएच.डी. नोंदणी करणा-या संशोधक विद्यार्थ्यांना कोर्सवर्क (Course Work) करणे अनिवाय आहे. वरील परिपत्रकामध्ये संबंधित विद्यार्थ्यांना लागणारी शुल्क व अभ्यासक्रम देण्यात आलेला आहे. कोर्सवर्क करिता नियमावली व अभ्यासक्रम या सोबत देण्यात येत आहे.

तरी सर्व संबंधितांनी याची नोंद घ्यावी व नियमावलीप्रमाणे पुढील कार्यवाही करावी.

संदर्भ पदव्युत्तर/कोर्सवर्क./२०१०-११/२३७९ ) ( स्वाक्षरीत/-  
दिनांक : ११/११/२०१० ) ( **संचालक**  
महाविद्यालय व विद्यापीठ विकास मंडळ

प्रत माहिती तथा योग्य त्या कार्यवाहीस्तव :

०१. मा. प्राचार्य/संचालक, सर्व संलग्नित संशोधन केंद्रे, प्रस्तुत विद्यापीठ
०२. मा. संचालक, शैक्षणिक संकुल, उपकेंद्र लातूर
०३. मा. वित्त व लेखाधिकारी साहेब, प्रस्तुत विद्यापीठ
०४. मा. कुलसचिव, प्रस्तुत विद्यापीठ
०५. मा. परीक्षा नियंत्रक, प्रस्तुत विद्यापीठ
०६. मा. विशेष कार्यासन अधिकारी, प्रस्तुत विद्यापीठ
०७. मा. ग्रंथपाल, प्रस्तुत विद्यापीठ
०८. सिस्टीम एक्सपर्ट, यू.जी.सी. संगणक कक्ष, प्रस्तुत विद्यापीठ यांना देवून सुचित करण्यात येते की, सदरील परिपत्रक विद्यापीठ संकेतस्थळावर प्रसिध्द करावे.



## **Guidelines for Implementation of New Ph.D. Ordinance (Ph.D./New. Ord./IV/(7))**

1. The Ph.D. Guide from research centre and affiliated to research center will instruct his /her Ph.D. students (whose Ph.D.topic is confirmed by Research and Recognition Committee) for admission to Ph.D. course work in research center by paying course-work fees of Rs. 2000/-.
2. The Principal/Director of research centre will send list of admitted students to University eligibility section for meeting eligibility requirement.
3. The research Guide/Co-guide will prepare course-work syllabus of paper III and paper IV. The syllabus of paper III should have focus on foundation philosophy of specific subject. This covers the core aspects of the subject, its relation with other related subjects.
4. The Principal/Director of Research Centre will collect syllabus of course-work paper III and IV from Guide/Co-guide (affiliated to research center) and submit to University for necessary information of respective BoS.
5. As per the University New Ph.D. Ordinance, the Principal/Director will monitor completion of course-work (including internal examination of paper I, II, III and IV) and External examination of paper III and IV.
6. The course-work paper III and IV external examination papers will be assessed by teachers from other research centre affiliated to S.R.T.M. University, Nanded. The appointment of external examiners shall be made by Principal/Director with due consultation of the concern Research Guide/Co-guide.
7. The two credit course-work i.e. Field work/Seminar/other academic activities will be completed and evaluated by Guide/Co-guide and marks will be given.
8. If the Ph.D. student fails in internal examination and clears external examination of paper I and II, the candidates need to appear again for Paper I and II examination. He/She has to clear paper I and II along with internal examinations.
9. **The Ph.D. student having Post Graduation in Engineering and Computer background course have to opt paper II as Advanced Computer Application course.**
10. For first two common papers, student has to fill examination form along with stipulated examination fees. The Principal/Director of Research center should submit examination forms to University as per the calendar of examination.
11. The University shall conduct course-work examinations at the end of semester (November/May).
12. Research centre shall complete course work on priority basis, of candidates registered for Ph.D. in June-July 2009.



## **Proposed Syllabus for Ph.D. Course Work** **(Research Methodology-I)**

**Paper Name:** Research Methodology -I  
**Total Marks:** 100

**Paper Code:**  
**Credits:** 04

### **Objective:**

To enable to student to understand and work methods and concepts related Research.  
To enable the student to develop research proposal and to work with research problem.  
To develop broad comprehension of research area.

### **Unit-I Introduction:**

Meaning, Concept, nature steps types and characteristics of research.  
Scientific Inquiry  
Philosophical and Sociological foundations of research  
Interdisciplinary approach and its implications in various research area.

### **Unit-II Methods of Research:**

Qualitative and quantitative methods of research like Historical, case study, ethnography, expost facto, documentary and content analysis, survey (Normative, descriptive, evaluative etc.) field and laboratory experimental studies.  
Characteristics of methods and their implications in research area.

### **Unit-III Development of research proposal:**

Research proposal and its elements  
Formulation of research problem-criteria of sources and definition  
Development of objectives and characteristics of objectives.  
Development hypotheses and applications.

### **Unit-IV Methods of data collection:**

Concept of sampling and other concepts related to sampling.  
Probability and non-probability samples, their characteristics and implications.  
Tools of data collections, their types, attributes and uses.  
Redesigning, research tools-like questionnaire, opinnaere, observation, interviews, scales and tests etc.

### **Unit-V Methods of data analysis:**

Analysis of qualitative data based on various tools.  
Analysis of quantative data and it presentation with tables, graphs etc.  
Statistical tools and techniques of data analysis-measures of central tendency, dispersion.  
Decision making with hypothesis testing through parametric and non parametric tests.  
Validity and delimitations of research findings.

### **Unit-VI Report writing and evaluations:**

Principles of report writing and guide lines according to style manuals.  
Writing and presentation of preliminary, main body and reference section of report.  
Evaluation of research report.



**References:**

- Bajpai S. R. (1975) Methods of Social Survey and Research, Kitabghar, Kanpur.
- Hans Raj (1988) Theory and Practice in Social Research, Surjeet Publication, Kolhapur.
- Krishnaswami O. R. (1988) Methodology of Research in Social Science, Himalaya Pub. House.
- Sadhu, Singh, Research Methodology in Social Science
- Bhandarkar, Research Methodology
- Kothari, C. R. (2005) Quantitative Technique, New Delhi, Vikas Publication House.
- Gautam, N. C. (2004) Development of Research tools, New Delhi, Shree Publishers.
- Gupta, Santosh (2005) Research Methodology and Statistical Techniques, Deep and Deep Publications.
- Chandra A. and Sexena T. P. (2000) Style Manual, New Delhi, Metropolitan Book Comp. Ltd.
- Shukla, J. J. (1999) Theories of Knowledge, Ahmadabad, Karnavati Publication.
- Bhattacharya, D. K. (2004) Research Methodology, New Delhi, Excel Books.
- Brymann, Alan and Carmer, D. (1995) Qualitative data analysis for social scientist, New York, Routledge Publication.
- Best J. W. and Khan J. V. (2005) Research in Education New Delhi, Prentice Hall India.



**Proposed Syllabus for Ph.D. Course Work**  
**(Computer Applications-II [A])**

**Paper Name:** Computer Applications –II (A)  
**Total Marks:** 100

**Paper Code:**  
**Credits:** 04

**Unit 1: Basics of Computer**

Characteristics of Computers, Evolution of computers, computer generations, Basic computer organization; System software application software, introduction to operating system, MS-windows, application software, introduction to operating system, MS-windows, application software, introduction to operating System, MS-windows, Linux.

**Unit 2: Using Internet for research**

The Internet: quick look, what is internet, major internet services, working of internet, electronic mail, www, downloading super tools for better computing Internet and the society, searching the keyword search engines, interaction, News and multimedia, governments, archives and statistics.

**Unit 3: Introduction to research related software's**

Data analysis software-SPSS, Core calculation software, Developing utility programs for research, Introduction to C programming.

**Unit 4: Research related tools and utilities**

Research publishing tool-MS Word, Adobe acrobat, Graphics tool-MS Excel, Presentation tool-MS Power point, Subject/field specific tools on www-freeware.

References Books

- 1] Computer fundamentals  
Pradip K. Singha and Priti Singha (BPB Publication)
- 2] The Internet: A users guide  
K. L. James (PHI publication)
- 3] Internet Research skill  
Niall O Dochartaigh (SAGE publication)
- 4] Microsoft office system 2003 edition  
(PHI publication)
- 5] Programming in ANSI C  
E. Balagurusamy (Tata McGraw Hill Publication)



**Proposed Syllabus for Ph.D. Course Work**  
**(For the students in Engineering & Computer background)**  
**(Advanced Computer Application-II[B])**

**Paper Name:** Advanced Computer Application -II [B]  
**Total Marks:** 100

**Paper Code:**  
**Credits:** 04

**Unit 1: Basics of Computer organization**

System software compilation and interpretation ,phases of compilation process, Lexical analysis, Lex packages on Linux system, Parsing Techniques, code generation and optimigation.

Application software, software development models, requirement analysis and specification for software design, Programming techniques and tools, software validation and quality assurance techniques, software maintenances and advance concepts, software management.

Operation systems, functions of OS. Multiprogramming, multiprocessing and multitasking, memory management, Concurrent programming. Scheduling, study of Linux operating system.

**Unit 2: Working with internet**

Introduction to internet, Searching on the internet, Using graphics on internet E-mail and the internet. The use of multimedia on the internet, Security on the internet, Exploring e-mail facilities.

Web design, creating web pages, themes and graphics, linking web pages, Navigation and testing, Making the website interactive, Internet and the society, study of search engines.

**Unit 3: Programming with C++**

Object oriented programming concepts, Classes, Objects, Installations, inheritance, Polymorphism and overloading, Elements of C++ tokens, identifiers, variables and constants, Data types, Operators, Control statements, Function parameter passing. Class and objects, Constructors and destructors, overloading inheritance templates, exception handling

Relational database design and SQL :  
E-R diagrams, transformation and normalization, SQL,DDL, DML, DCL command database objects.

**Unit 4: Research related tools and utilities**

Research publishing tools MS word, Adobe acrobat, Graphics tools, MS excel.  
Presentation tools Subject/Field specific tools on www.freeware.

**References :**

1. Computer Fundamentals :
2. Computer Organization and Architecture, William Stalling, PHI
3. The internet : uses's guide K.L. James
4. Internet research skills, Niall O Dochartaigh
5. Microsoft Office system 2007 edition
6. Programming with C++, E balaguruswami
7. A modern Approach to Software engineering, Rajib Mall, TMH
8. C.J. Date, "An Introduction to database Concepts"