



FUTURE UNIVERSITY

Learn · Assimilate · Transcend

FUTURE UNIVERSITY, BAREILLY

(Established under the Uttar Pradesh Private Universities (Third Amendment) Act, 2024)

COURSE CURRICULUM

AND

EVALUATION SCHEME

Ph.D. (Computer Application)

For the Students Admitted in Academic Session 2025-26

Effective From

Academic Session 2025-26

Prepared By

Board of Studies

Approved By

**Academic Council
Future University, Bareilly**

Published By

**Office of the Registrar
Future University, Bareilly**



(This Curriculum and Evaluation Scheme shall be applicable to all students admitted to the Ph.D. (Computer Applications) Programme from the Academic Session 2025-26 onwards and shall remain in force until amended or revised by the Academic Council of Future University, Bareilly.)



**FUTURE
UNIVERSITY**
Learn · Assimilate · Transcend

Board of Studies

*(Including Proceeding, Course Structure, Course Curriculum and
Evaluation Scheme)*

for

Doctor of Philosophy

(Effective from the Session: 2025-26)



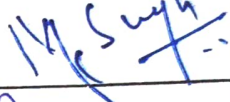
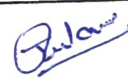
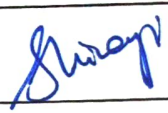
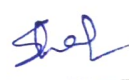
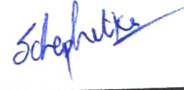
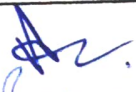
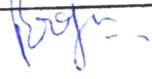
[Handwritten signature]

Board of Studies (P.hD.)

Name of Faculty: Faculty of Computer Applications, Future University.

Department: Department of Computer Application

Attendance Sheet

S. No.	Name	Designation	Position	Signature
1	Prof. (Dr.) Shashi Kr. Shingh	Professor	Chairperson	
2	Prof. (Dr.) Hemant Yadav	Professor	Senior Member	
3	Prof. (Dr.) M. K Singh	Professor	Senior Member	
4	Dr. Abhishek Saxena	Professor	Senior Member	
5	Dr. Jeelani	Associate Professor	Member Secretary	
6	Dr. Shivangi Ghildiyal	Associate Professor	Member	
7	Dr. Shalabh Saxena	Associate Professor	Member	
8	Dr. Schephalika	Associate Professor	Member	
9	Dr. Akhtar Hussain	Associate Professor	Academic Expert (External Member)	
10	Dr. Pooja Yadav	Assistant Professor	Academic Expert (External Member)	
11	Dr. Abhineet Anand	Professor	Academic Expert (External Member)	


 Faculty of Engg. & Tech.
 Future University
 Bareilly
 Chairperson of BOS

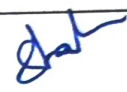
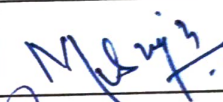
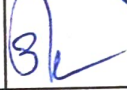
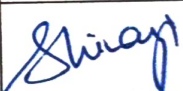
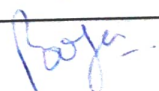
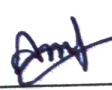
Academic Council
 Future University
 Bareilly

Board of Studies (P.hD.)

Name of Faculty: Faculty of Computer Applications, Future University.

Department: Department of Computer Application

Attendance Sheet

S. No.	Name	Designation	Position	Signature
1	Prof. (Dr.) Shashi Kr. Shingh	Professor	Chairperson	
2	Prof. (Dr.) Hemant Yadav	Professor	Senior Member	
3	Prof. (Dr.) M. K Singh	Professor	Senior Member	
4	Dr. Abhishek Saxena	Professor	Senior Member	
5	Dr. Jeelani	Associate Professor	Member Secretary	
6	Dr. Shivangi Ghildiyal	Associate Professor	Member	
7	Dr. Shalabh Saxena	Associate Professor	Member	
8	Dr. Schephalika	Associate Professor	Member	
9	Dr. Akhtar Hussain	Associate Professor	Academic Expert (External Member)	
10	Dr. Pooja Yadav	Assistant Professor	Academic Expert (External Member)	
11	Dr. Abhineet Anand	Professor	Academic Expert (External Member)	

Dean
Faculty of Eng. & Tech.
Future University
Chairperson of BOS

Academic Council
Future University



**FUTURE
UNIVERSITY**
Learn · Assimilate · Transcend

Board of Studies (P.hD.)

Name of Faculty: Faculty of Computer Application

S. N.	Position	Designation	Proposed Name of member, Designation, Affiliation
1	Senior Faculty	Chairperson	Prof. (Dr.) Shashi Kr. Shingh, Dean, Professor. Department of Computer Science and Engineering, Future University, Contact No. 9958170827, Email: kumar.shashi651@gmail.com
2	Senior Faculty	Senior Member	Prof. (Dr.) Hemant Yadav, Group Director, Future University, Contact No. 7830373244, Email: groupdirector@futureuniversity.in
3	Senior Faculty	Senior Member	Prof. (Dr.) Manish Kumar Singh, Professor, Faculty of sciences, Future University, Contact No. 8475010063, Email: mksingh@futureuniversity.in
4	Senior Faculty	Senior Member	Dr. Abhishek Saxena, Dean, Faculty of Computer Application, Future University, Contact No. 8475010072, Email: abhisheksaxena@futureuniversity.in
5	Senior Faculty	Member Secretary	Dr. Jeelani, HOD, Department of Computer Application, Future University, Contact No. 8273303430, Email: jeelani@futureuniversity.in
6	Senior Faculty	Member	Dr. Shivangi Ghildiyal, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 8979988886, Email: shivangi@futureuniversity.in
7	Senior Faculty	Member	Dr. Schephalika, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 8532005079, Email: schephalika@futureuniversity.in
8	Senior Faculty	Member	Dr. Shalabh Saxena, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 9760043061, Email: shalabh@futureuniversity.in
9	Academic Expert (Member)	Member	Dr. Akhtar Hussain, Asso. Prof. Department of Computer Science & Information Technology, MJPRU, Bareilly, Contact No. 9457381048, Email: akhtarhusain@mjpru.ac.in
10	Academic Expert (Member)	Member	Dr. Pooja Yadav, Assis. Prof. Department of Computer Science & Information Technology, MJPRU, Bareilly, Contact No. 9897187723, Email ID: drpoojayadavfet15@gmail.com
11	Academic Expert (Member)	Member	Prof. (Dr.) Abhineet Anand, Dean of School of Computer Science & Engineering Bahra University Shimla Hills, HP, Contact No. 8126302065, Email ID: abhineet.mnnit@gmail.com

Delone

Mr. Singh *Shal* *5* *Mr. Singh*

Dean
Faculty of Engg. & Tech.
Future University
Bareilly
Chairperson

Academic Council
Future University
Bareilly



**FUTURE
UNIVERSITY**
Learn · Assimilate · Transcend

Minutes of Meeting (P.hD.)

Name of Faculty: Faculty of Computer Application

Date:

Time:

Venue: Board Room

Chairperson: Prof. (Dr.) Shashi Kumar Singh

Panel of BoS Attendees:

S. N.	Position	Designation	Proposed Name of member, Designation, Affiliation
1	Senior Faculty	Chairperson	Prof. (Dr.) Shashi Kr. Shingh, Dean, Professor, Department of Computer Science and Engineering, Future University, Contact No. 9958170827, Email: kumar.shashi651@gmail.com
2	Senior Faculty	Senior Member	Prof. (Dr.) Hemant Yadav, Group Director, Future University, Contact No. 7830373244, Email: groupdirector@futureuniversity.in
3	Senior Faculty	Senior Member	Prof. (Dr.) Manish Kumar Singh, Professor, Faculty of sciences, Future University, Contact No. 8475010063, Email: mksingh@futureuniversity.in
4	Senior Faculty	Senior Member	Dr. Abhishek Saxena, Dean, Faculty of Computer Application, Future University, Contact No. 8475010072, Email: abhisheksaxena@futureuniversity.in
5	Senior Faculty	Member Secretary	Dr. Jeelani, HOD, Department of Computer Application, Future University, Contact No. 8273303430, Email: jeelani@futureuniversity.in
6	Senior Faculty	Member	Dr. Shivangi Ghildiyal, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 8979988886, Email: shivangi@futureuniversity.in
7	Senior Faculty	Member	Dr. Schephalika, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 8532005079, Email: schephalika@futureuniversity.in
8	Senior Faculty	Member	Dr. Shalabh Saxena, Asso. Prof. Department of Computer Science and Engineering, Future University, Contact No. 9760043061, Email: shalabh@futureuniversity.in
9	Academic Expert (Member)	Member	Dr. Akhtar Hussain, Asso. Prof. Department of Computer Science & Information Technology, MJPRU, Bareilly, Contact No. 9457381048, Email: akhtarhussain@mjpru.ac.in
10	Academic Expert (Member)	Member	Dr. Pooja Yadav, Assis. Prof. Department of Computer Science & Information Technology, MJPRU, Bareilly, Contact No. 9897187723, Email ID: drpoojayadavfet15@gmail.com
11	Academic Expert (Member)	Member	Prof. (Dr.) Abhineet Anand, Dean of School of Computer Science & Engineering Bahra University Shimla Hills, HP, Contact No. 8126302065, Email ID: abhineet.mnnit@gmail.com

Shashi

M. J. Shal

*Dean
Faculty of Engg. Tech.
Future University
Bareilly*

*Academic Council
Future University
Bareilly*

The following are the details of the discussions held:

1. To minutes of the first BOS held on..... were approved by the members as no comments were received.
2. The proposed syllabus for Doctorate of Philosophy in Computer Application on the basis of the recommendations of the first BOS for the session 2025-26 and for all semesters was discussed and suggestions were given by the experts which were incorporated in the various placed.
3. The total credits to be taken for the program based on the decision taken in the meeting of all the Deans.
4. After discussion it was agreed that all evaluations will be on 100 with 30 internal continuous evaluation and 70 end semester evaluation.
5. Any other item with the permission of the chair:
 - Course work and practical will have code as per the UGC suggestion for ABC purpose
 - Tutorial are not needed in practical subjects and should be removed
 - It was suggested that the University should follow the NCRF structure in all programs offered.
 - Practical credit shall be as per UGC norms.
 - UGC guidelines suggests for other Region language, and is not mentioning foreign languages as in the syllabus. College can reconsider the same.

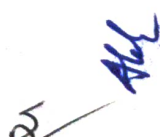
The members appreciated the efforts of the faculty members in formulating the syllabus for 2025-26 academic batch.

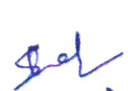
HOD computer informed the members that the syllabus for the year 2025-26 may need some corrections based on inputs from experts of the subject. BOS empowered the Dean Computer Application to finalize the syllabus in consultation with subject experts and seek approval of the Academic Council when it meets next. Also the modifications be informed the Board of Studies when it meets next.

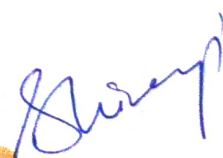
The meeting ended with a Vote of thanks to the external members who spared their valuable time and for the suggestions.


Faculty of Engg. & Tech.
Future University
Prof. (Dr.) Shashi Kumar Singh
Dean-Faculty of Engineering & Technology
Future University, Bareilly

Academic Council
Future University
Bareilly







Ph.D. Course Work (Computer Applications)											
COURSE			Credit Structure & Total Hours						Evaluation Scheme		
S No	Paper Code	Subject Title	Course Type	L	T	P	TC	CH	CA	EE	TM
1	25RMPHDUC01	Research Methodology	UCC	4	0	0	4	60	30	70	100
2	25CAPHD101QMC	Quantitative Methods and Computer Applications	UCC	4	0	0	4	60	30	70	100
3	25REPHDUC02	Research and Publications Ethics	DSC	2	0	0	2	30	30	70	100
4	25REPHDUC03	Review of Literature	DSC	2	0	0	2	30	30	70	100
5	25CSEPHD102RTF	Emerging Computational Technologies	DSE	4	0	0	4	60	30	70	100
	25CSEPHD103RTF	Machine Learning and Artificial Intelligence Foundations	DSE	4	0	0	4	60	30	70	100
	25CSEPHD104RTF	Advanced Algorithms and Data Structures	DSE	4	0	0	4	60	30	70	100
Doctor of Philosophy (Ph.D.)			Total	16	0	0	16	240	150	350	500

Handwritten signatures in blue ink are present above and around the stamp, including one that appears to read "Dr. [unclear]".



Course Code:	PhD Programme (Future University, Bareilly) 25RMPHDUC01-RESEARCH METHODOLOGY	L-4 T-0 P-0 C-4
Objective:	To familiarize the research scholar with the fundamentals of scientific research.	
Course Content:		
Unit-1:	Research Methodology Meaning and Characteristics of Scientific Research, Phases/Stages of Research; Types of Research- Descriptive, Analytical, Applied, Fundamental, Quantitative, Qualitative, Conceptual, Empirical; Research Approaches, Ethical Problems in Research; Constructs and Variables- Concept and Nature, Types of Variables- Continuous and Categorical, Direct and Indirect, Phases of Research.	8 Hours
Unit-2:	Literature Review & Problem Identification Purpose of the Review, Sources of the Review, writing Literature Review, Research Gaps identification, Meaning and Characteristics of a Research Problem, Types of Problems, Generality and Specificity of the Problem, and Objectives Formulation.	8 Hours
Unit-3:	Research and Sampling Design Meaning and Purpose of Research Design, Types of Research Designs, Criteria of Good Research Design, Concepts of Research Design, Basic Principles of Experimental Design. Meaning and Types of Sampling; Probability and Non-probability Sampling, Methods of Drawing Samples, Characteristics of a Good Sampling Design, Sample Size, Sampling Error, Sampling Distribution, Sampling Schemes and Sample Size.	12 Hours
Unit-4:	Methods and Techniques of Data Collection Methods of Data Collection - Primary Data, Secondary Data; Primary Data Collection Methods- Observation Method, Interview Method, Questionnaire, Guidelines for Constructing Questionnaires, Secondary Data Collection Methods- Selection of appropriate method of Data Collection; Coding, Editing and Tabulation of Data, Charts and Diagrams used in Data Analysis, Bar and Pie Diagrams and their Significance.	12 Hours
Unit-5:	Hypothesis Formulation & Report Writing Hypothesis- Meaning and Characteristics of Good Hypothesis, Types of Hypotheses, Formulation of a Hypothesis, Ways of stating a Hypothesis; Testing experimental hypotheses- Standard Error, Test of Significance, Level of Significance, Degrees of Freedom, Errors in Hypothesis- Type-I, Type-II. Report Writing- Meaning and Significance of Report Writing, Types of Reports, Steps in Writing Report, Layout of the Research Report, Precaution in Writing Research Report, Developing Thesis, Formatting, Various Citations formats, References and Bibliography, Steps for Writing Synopsis/Research Proposal.	20 Hours
Note:	In each unit, Assignments are to be given to the students.	
Text Books:	1. Cooper & Schindler, Business Research Methods, Tata McGraw Hill, 2022. 2. Kothari C.R., Research Methodology-Methods and Techniques, New Age International Publishers, 2023. *Latest editions of all the suggested books are recommended.	

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly



Course Code:	PhD Programme (Future University, Bareilly) 25CAPHD101QMC- QUANTITATIVE METHODS AND COMPUTER APPLICATIONS	L-2 T-0 P-0 C-2
Objective:	To gain familiarity with various statistical tools and techniques, data analysis and interpretation along with the application of computer and statistical software in research.	
Course Content:		
Unit-1:	Measurement and Scaling Techniques Measurement in Research, Measurement Scales- Nominal Scale, Ordinal Scale, Interval Scale, Ratio Scale; Sources of Errors in Measurement- Respondent, Situation, Measurer, Instrument; Tests of Sound Measurement, Techniques of Developing Measurement Tools, Scaling, Meaning of Scaling, Scale Classification Bases, Important Scaling Techniques, Scale Construction Techniques.	8 Hours
Unit-2:	Processing and Analysis of Data Processing Operations, Some Problems in Processing, Elements/Types of Analysis, Statistics in Research, Measures of Central Tendency, Measures of Dispersion, Measures of Asymmetry (Skewness), Measures of Relationship, Simple Regression Analysis, Multiple Correlation and Regression-meaning, uses & methods of calculation of Correlation Coefficient, Partial Correlation.	8 Hours
Unit-3:	Microsoft Office Introduction & Applications to Microsoft Word, Microsoft Excel and Power Point.	12 Hours
Unit-4:	Data Analysis through Statistical Tools Applications of z-test, t-test, f-test and chi-square test, Association of attributes and techniques of testing, ANOVA-Analysis, Principle, Technique, Short-cut method for one way ANOVA, Two-way ANOVA, Coding Method Data Analysis through Simulators & Special Packages Introduction to Data Analysis and Simulation, Fundamentals of Simulation, Introduction to Specialized Software Packages and their Applications, Application of statistical techniques through statistical software like SPSS, AMOS.	14 Hours
Unit-5:	Introduction & Applications to MATLAB and LATEX.	16 Hours
Note:	In each unit, Assignments are to be given to the students.	
Text Books:	1. Chandan J. S., Statistics for Business and Economics, Vikas Publications, 2022. 2. Kothari C.R., Research Methodology-Methods and Techniques, New Age International Publishers, 2023. 3. Joyce Cox & Polly Urban, Microsoft Office, Galgotia Publishing, 2007. 4. Latex: A Document Preparation System, 2/E Pearson low price edition by Lamport, 2011. 5. MATLAB: An Introduction with Applications by Gilat Wiley India Pvt Ltd, 2012. *Latest editions of all the suggested books are recommended.	

[Handwritten signatures and stamps]
Dean
Faculty of Engg. & Tech.
Future University
Bareilly
Academic Council
Future University
Bareilly



<u>Course Code:</u>	PhD Programme (Future University, Bareilly) 25REPHDUC02- RESEARCH AND PUBLICATIONS ETHICS (RPE)	L-2 T-0 P-0 C-2
Objective:	This course has focused on the basics of philosophy of science and ethics, research integrity, and 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 are introduced in this course.	
Course Content:		
	THEORY	
Unit-1:	Philosophy, Ethics and Scientific Conduct Introduction to Philosophy: Definition, Nature and Scope, Concept, Branches Ethics: Definition, Moral Philosophy, Nature of Moral Judgments and Reactions Scientific Conduct: Ethics for Science and Research, Intellectual honesty and Research Integrity, Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP), Redundant Publications: Duplicate and Overlapping Publications, Salami Slicing, Selective reporting and misrepresentation of data.	8 Hours
Unit-2:	Publication Ethics Definition, Introduction and Importance; Best practices/standards setting initiatives and guidelines: COPE, WAME, etc.; Conflicts of Interest; Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types; Violation of Publication Ethics, Authorship and Contributorship; Identification of Publication misconduct, complaints and appeals; Predatory Publishers and Journals.	7 Hours
	PRACTICE	
Unit-3:	Open Access Publishing Open access publications and initiatives, SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies, Software tool to identify predatory publications developed by SPPU, Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested etc.	4 Hours
Unit-4:	Publication Misconduct Group Discussions: Subject-Specific Ethical Issues, FFP, Authorship, Conflicts of Interest, Complaints and Appeals: Examples and fraud from India and abroad Software Tools: Use plagiarism software like Turnitin, Urkund and other open-source software tools.	4 Hours
Unit-5:	Databases and Research Metrics Databases-Indexing databases; Citation databases- Web of Science, Scopus, etc. Research Metrics- Impact Factor of journal as per Journal Citation Report, SNIP, SIR, IPP, Cite Score; Metrics- h-index, g index, i10 index, altmetrics.	7 Hours
Note:	In each unit, Assignments are to be given to the students.	
Text Books:	1. Santosh Kumar Yadav, Research & Publication Ethics, Springer, 2023. 2. V K Ahuja, Kankana Baishya, Research & Publication Ethics, NLU, Assam, 2024. 3. Dr. Yatendra Kumar Singh, Bipin Kumar Dubey, Research Methods and Publication Ethics, Friends Publication, 2023. *Latest editions of all the suggested books are recommended.	

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

Course Code	25REPHDUC03 REVIEW OF LITERATURE	L-2 T-0 P-0 C-2
Objective	To develop research scholars' ability to conduct comprehensive, systematic, and critical literature reviews using both traditional and digital research tools, enabling them to identify research gaps, synthesise knowledge, and build strong theoretical frameworks for advanced academic writing.	
Course Content		
Unit-1	Fundamentals of Literature Review Meaning, Purpose, and Significance of Literature Review, Types of Literature Reviews – Narrative, Systematic, Scoping, Meta-analysis, and Integrative, Concept of Review in the Context of Research Methodology, Theoretical vs. Empirical Reviews, Role of Literature Review in Research Proposal and Thesis Writing	8 Hours
Unit-2	Sources and Tools for Literature Search Primary, Secondary, and Tertiary Sources of Literature, Scholarly Databases: Scopus, Web of Science, JSTOR, PubMed, and Google Scholar, AI-assisted and Digital Tools for Research: Connected Papers, Research Rabbit, Semantic Scholar, Zotero, Mendeley, and EndNote, Use of Keywords, Boolean Operators, and Advanced Search Strategies, Evaluating Source Credibility and Relevance	7 Hours
Unit-3	Structuring and Writing a Literature Review Framework and Organisation of a Review (Chronological, Thematic, Methodological, Theoretical Approaches), Summarising and Synthesising Literature, Critical Evaluation of Existing Studies, Identifying Research Gaps and Building Conceptual Frameworks, Writing Style, Coherence, and Logical Flow in Academic Reviews	4 Hours
Unit-4	Integrative and Systematic Review Techniques Steps in Conducting a Systematic Review, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Guidelines, Meta-analysis: Concepts and Applications, Use of NVivo and Similar Software for Qualitative Data Analysis, Cross-disciplinary and Interdisciplinary Review Approaches	4 Hours
Unit-5	Ethics, Reporting, and Publication of Reviews Ethical Considerations in Reviewing Literature: Plagiarism, Bias, and Transparency, Citation Styles: APA, MLA, Chicago, and Harvard, Writing and Formatting Review Papers for Journals, Preparing Annotated Bibliographies and Reference Lists Publication Process: Selecting Journals, Peer Review, and Open Access Platforms	7 Hours
Note	In each unit, assignments should include practical activities such as identifying review gaps, creating annotated bibliographies, drafting review outlines, and using digital tools for literature synthesis.	
Text Books	- Booth, W. C., Colomb, G. G., & Williams, J. M. (2021). The Craft of Research. University of Chicago Press. - Hart, C. (2018). Doing a Literature Review: Releasing the Research Imagination. Sage Publications. - Ridley, D. (2023). The Literature Review: A Step-by-Step Guide for Students. Sage Publications. - Jesson, J., Matheson, L., & Lacey, F. M. (2019). Doing Your Literature Review: Traditional and Systematic Techniques. Sage Publications. - Machi, L. A., & McEvoy, B. T. (2022). The Literature Review: Six Steps to Success. Corwin Press. *Latest editions of all the suggested books are recommended.	

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly



Course Code		Course Title		Lecture			Semester: II
25CSEPHD102RTF		Emerging Computational Technologies		L	T	P	
Version:		Date of Approval:		3	1	0	
Scheme of Instruction				Scheme of Examination			
No. of Periods	:	60 Hrs.		Maximum Score		:	100
Periods/ Week	:	4		Internal Evaluation		:	30
Credits	:	4		End Semester		:	70
Instruction Mode	:	Lecture		Exam Duration		:	3 Hrs.
Course Objectives:							
1. To expose scholars to the latest developments and disruptive trends in computing.							
2. To provide understanding of emerging paradigms such as cloud, edge, quantum, and blockchain technologies.							
3. To develop critical thinking for identifying research challenges in modern computational systems.							
4. To encourage exploration of innovative applications and interdisciplinary research areas.							
Course Outcomes:							
1. Analyze and compare recent computational paradigms and their architectures.							
2. Evaluate the role of emerging technologies in solving complex computational problems.							
3. Identify research gaps and propose innovative solutions using new computing technologies.							
4. Understand ethical, security, and sustainability issues related to emerging computational trends.							
Unit	Detailed Contents:						Hours
Unit: 1	Introduction to Emerging Technologies: Evolution of computing paradigms: From mainframe to cloud to quantum, Overview of emerging computational models, Trends in hardware acceleration, GPUs, and AI chips, Research challenges and opportunities in modern computing.						8 Hours
Unit: 2	Cloud, Edge, and Fog Computing: Cloud service models (IaaS, PaaS, SaaS), Edge and Fog computing architectures and use cases, Resource management, scalability, and latency issues, Cloud-native and serverless computing.						7 Hours
Unit: 3	Cyber Security: Introduction to Cyber Security and Information Security: Types of Cyber Threats: Malware, Phishing, Ransomware, DoS, Security Mechanisms: Authentication, Encryption, Firewalls, Security Policies and Best Practices, Basics of Ethical Hacking and Cyber Laws.						4 Hours
Unit: 4	Blockchain and Secure Distributed Systems: Blockchain architecture, consensus mechanisms, and smart contracts, Cryptographic primitives and trust management, Applications in data security, IoT, and decentralized computation, Limitations and scalability of blockchain systems.						4 Hours
Unit: 5	Data Analytics: Introduction to Data Analytics and Data Science, Data Types, Data Collection, and Cleaning, Data Visualization and Interpretation, Basic Statistical Analysis and Tools (Excel, Python, R), Applications in Business, Health, and Social Media.						7 Hours
Note	In each unit, assignments should include practical activities such as identifying review gaps, creating annotated bibliographies, drafting review outlines, and using digital tools for literature synthesis.						
TEXT BOOKS	1. Rajkumar Buyya et al., Cloud Computing: Principles and Paradigms, Wiley. 2. Melanie Swan, Blockchain: Blueprint for a New Economy, O'Reilly Media. 3. Michael A. Nielsen and Isaac L. Chuang, Quantum Computation and Quantum Information, Cambridge University Press. 4. Satyanarayanan, M., "The Emergence of Edge Computing," Computer, IEEE. 5. Recent IEEE/ACM journal papers on cloud, blockchain, and quantum computing.						

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly



Course Code		Course Title		Lecture			Semester: II
25CSEPHD103RTF		Machine Learning and Artificial Intelligence Foundations		L	T	P	
Version:		Date of Approval:		3	1	0	
Scheme of Instruction				Scheme of Examination			
No. of Periods		:	60 Hrs.	Maximum Score		:	100
Periods/ Week		:	4	Internal Evaluation		:	30
Credits		:	4	End Semester		:	70
Instruction Mode		:	Lecture	Exam Duration		:	3 Hrs.
Course Objectives:							
1. To provide research scholars with a deep understanding of the mathematical and conceptual foundations of Machine Learning (ML) and Artificial Intelligence (AI).							
2. To enable learners to design and evaluate intelligent systems capable of decision-making, pattern recognition, and knowledge discovery.							
3. To familiarize scholars with classical and modern AI techniques, including deep learning and probabilistic reasoning.							
4. To prepare scholars to identify open research challenges and develop innovative solutions in ML and AI domains.							
Course Outcomes:							
1. Comprehend the theoretical foundations and evolution of AI and ML.							
2. Apply supervised, unsupervised, and reinforcement learning techniques to real-world problems.							
3. Analyze and evaluate model performance and optimization strategies.							
4. Explore neural architectures and emerging research in deep and explainable AI.							
5. Formulate and investigate research problems in the AI–ML domain with ethical considerations.							
Unit	Detailed Contents:						Hours
Unit: 1	Foundations of Artificial Intelligence and Machine Learning: Introduction to AI: Definitions, history, and scope, Components of intelligent systems: Knowledge representation, reasoning, learning, ML paradigms: Supervised, unsupervised, semi-supervised, reinforcement learning, Mathematical foundations: Linear algebra, probability, statistics, and optimization, AI problem-solving techniques: Search algorithms, heuristics, and constraint satisfaction.						8 Hours
Unit: 2	Supervised Learning Techniques: Regression and Classification algorithms, Decision Trees, Random Forests, Support Vector Machines, k-Nearest Neighbors, Ensemble methods and boosting, Evaluation metrics: Precision, recall, F1-score, ROC-AUC, Bias–variance trade-off and model generalization.						7 Hours
Unit: 3	Unsupervised and Reinforcement Learning: Clustering techniques: k-Means, Hierarchical, DBSCAN, Dimensionality reduction: PCA, LDA, t-SNE, Hidden Markov Models, Gaussian Mixture Models, Reinforcement Learning (RL): Markov Decision Processes, Q-Learning, Policy Gradients, Applications of RL in robotics, games, and control systems.						4 Hours
Unit: 4	Neural Networks and Deep Learning Foundations: Biological and artificial neurons, perceptron model, Multilayer perceptrons and backpropagation, Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs), Generative models: Autoencoders, GANs, and Transformers, Optimization techniques: Gradient descent, Adam, regularization methods.						4 Hours
Unit: 5	Advanced Topics, Ethics, and Research Directions: Explainable AI (XAI) and interpretable models, Federated and Transfer Learning, AI for social good, healthcare, and sustainability, Ethical AI: Fairness, accountability, transparency, and bias mitigation, Research trends and open challenges in ML and AI.						7 Hours
Note	In each unit, assignments should include practical activities such as identifying review gaps, creating annotated bibliographies, drafting review outlines, and using digital tools for literature synthesis.						
TEXT BOOKS	1. Christopher M. Bishop, Pattern Recognition and Machine Learning, Springer. 2. Ian Goodfellow, Yoshua Bengio, Aaron Courville, Deep Learning, MIT Press. 3. Stuart Russell & Peter Norvig, Artificial Intelligence: A Modern Approach, Pearson. 4. Trevor Hastie, Robert Tibshirani, Jerome Friedman, The Elements of Statistical Learning, Springer. 5. Selected papers from IEEE Transactions on Neural Networks and Learning Systems, Journal of Machine Learning Research (JMLR), and AI Magazine.						

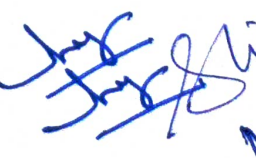
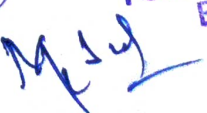
Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly



Course Code		Course Title		Lecture			Semester: II
25CSEPHD104RTF		Advanced Algorithms and Data Structures		L	T	P	
Version:		Date of Approval:		3	1	0	
Scheme of Instruction				Scheme of Examination			
No. of Periods	:	60 Hrs.		Maximum Score		:	100
Periods/ Week	:	4		Internal Evaluation		:	30
Credits	:	4		End Semester		:	70
Instruction Mode	:	Lecture		Exam Duration		:	3 Hrs.
Course Objectives:							
1. To strengthen the theoretical understanding of algorithm design and analysis. 2. To study advanced data structures and their role in efficient algorithmic solutions. 3. To analyze the complexity of algorithms using formal methods and asymptotic notations. 4. To explore parallel, randomized, and approximation algorithms. 5. To develop research aptitude for solving open computational problems.							
Course Outcomes:							
1.Apply advanced algorithmic techniques to complex computational problems. 2.Evaluate and compare algorithm efficiency using mathematical rigor. 3.Design optimized algorithms using suitable data structures. 4.Understand and apply concepts of NP-completeness and approximation algorithms. 5. Identify emerging research directions in algorithmic theory and applications.							
Unit	Detailed Contents:						Hours
Unit: 1	Algorithmic Foundations and Complexity Analysis: Review of algorithmic paradigms: Divide & conquer, greedy, dynamic programming, Asymptotic analysis and amortized analysis, Recurrence relations and the Master Theorem, Computational complexity: P, NP, NP-hard, NP-complete classes.						8 Hours
Unit: 2	Advanced Data Structures: Balanced search trees (AVL, Red-Black, B-Trees), Heaps, Fibonacci heaps, and Union-Find structures, Hashing techniques and collision resolution, Segment trees, Fenwick trees, and Tries, Persistent and concurrent data structures.						7 Hours
Unit: 3	Graph Algorithms and Network Optimization: Minimum spanning tree and shortest path algorithms, Network flow, bipartite matching, and cut problems, Planar graphs and graph coloring, Dynamic graph algorithms and applications in social networks.						4 Hours
Unit: 4	Randomized and Approximation Algorithms: Probabilistic analysis of algorithms, Monte Carlo and Las Vegas algorithms, Randomized QuickSort, Min-Cut, and Hashing, Approximation algorithms for NP-hard problems (Set Cover, TSP).						4 Hours
Unit: 5	Parallel and Distributed Algorithms: PRAM models and parallel algorithm design, Parallel sorting and searching, Distributed consensus and leader election, Applications in large-scale and high-performance computing.						7 Hours
Note	In each unit, assignments should include practical activities such as identifying review gaps, creating annotated bibliographies, drafting review outlines, and using digital tools for literature synthesis.						
TEXT BOOKS	1. Cormen, Leiserson, Rivest, and Stein, <i>Introduction to Algorithms</i>, MIT Press. 2. Kleinberg & Tardos, <i>Algorithm Design</i>, Pearson. 3. Dasgupta, Papadimitriou & Vazirani, <i>Algorithms</i>, McGraw-Hill. 4. Motwani & Raghavan, <i>Randomized Algorithms</i>, Cambridge University Press. 5. Recent IEEE/ACM papers on parallel and approximation algorithms.						





 Dr. Anshu
 Head
 Faculty of Engg & Tech.
 Future University
 Bareilly
 Academic Council
 Future University
 Bareilly



Dean
 Faculty of Engg. & Tech.
 Future University
 Bareilly

Academic Council
 Future University
 Bareilly



Dean
 Faculty of Engg. & Tech.
 Future University
 Bareilly

Academic Council
 Future University
 Bareilly



Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly



**FUTURE
UNIVERSITY**
Learn · Assimilate · Transcend

18th Milestone, Bareilly-Lucknow Highway NH-24 Near Faridpur, Bareilly,
Uttar Pradesh 243503 Website: www.futureuniversity.in

Ph.D. Ordinance

FUTURE UNIVERSITY BAREILLY

Ordinance for Degree of Doctor of Philosophy (Ph.D.)

[As per University Grants Commission (Minimum Standards and Procedure for Award of Ph.D. Degrees) Regulations, 2022]

PREAMBLE

Future University, Bareilly is offering broad-based research program leading to the award of Ph.D. degree, from Academic Session 2025-26. The research work may be characterized either by discovery of new facts or enunciation of a new theory or theories or by fresh interpretation of known facts or development of equipment making a distinct advancement in instrument technology.

The award of Ph.D. degree is in recognition of high academic achievements and application of knowledge to the solution of real-life problems in every sphere. The University encourages research in interdisciplinary areas and provides excellent opportunities for research work in the modern era of 21st century.

APPLICABILITY: This Ordinance shall apply to the program leading to the degree of Doctor of Philosophy (Ph.D.)

1. DEFINITIONS

“Act” means the University Grants Commission Act, 1956 (3 of 1956);

“Adjunct Faculty” means a part-time or contingent instructor, but not full-time faculty member hired to teach by a Higher Educational Institution;

“BOS” shall mean the Board of Studies of the College/ Department concerned

“Candidate/Applicant” shall mean a person who has applied for the Ph.D. program but is not yet registered for the same.

“Cumulative Grade Point Average (CGPA)” means a measure of the overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all semesters. It is expressed up to two decimal places;

“Credit” means the number of hours of instruction required per week over the duration of a semester. A three-credit course in a semester means three one-hour lectures per week, with each one-hour lecture counted as one credit;

“COE” shall mean Controller of Examinations of the University.

“College” means an institution engaged in higher education and/or research, either established by a university as its constituent unit;

“Commission” means the University Grants Commission established under Section 4 of the UGC Act 1956;

“Course” means one of the specified units which go to comprise a programmed of study;

“Course Work” means courses of study prescribed by the College/ Faculty /Department/ Centre to be undertaken by a student registered for the Ph.D. Degree;

“CRC” shall mean a Central Research Committee consisting of Director/Principal/Head of the concerned College, all Professors of the concerned College, two Associate Professors and one Assistant Professor/s having Ph.D. degree, by rotation in order of seniority (for two years), the proposed supervisor(s) or the approved supervisor(s) and

Jalau

Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

nominee of the URCC. The CRC shall also include one Professor, having Ph.D., from the other concerned department in case of inter-disciplinary topic of the research of the candidate. Quorum of the CRC will be deemed complete only when two members of the URCC are present of which one should be the Chairperson / Member Secretary of the URCC.

“Degree” means a degree awarded by a Higher Educational Institution in accordance with the provisions of section 22 (3) of the Act;

“External examiner” means an academician/researcher with published research work who is not part of the Higher Educational Institution where the Ph.D. scholar has registered for the Ph.D. programmed;

“Grade Point” means a numerical weight allotted to each letter grade on a 10-point scale;

“Guide/Research Supervisor” means an academician/researcher approved by the CRC to guide/supervise the research work of the research scholar.

“Co- Supervisor” shall mean a member of the academic staff of this or another university/ college/ research institution, other than the Supervisor, as approved by the CRC to guide/supervise the research work of the research scholar.

“Caretaker Supervisor” shall mean a member of the academic staff of the University appointed to act as the supervisor of the research scholar in the absence of the original Supervisor before and/or after submission of the thesis.

“Degree” shall mean the degree of Doctor of Philosophy (Ph.D.) of the University.

“Higher Educational Institution” means a university or institution specified under clause 2 of Regulation 1 of these Regulations;

“Interdisciplinary Research” means research conducted by a Ph.D. scholar in two or more academic disciplines;

“Minimum Submission Period” shall mean the minimum period for which a research scholar must be registered, prior to the date of submission of the thesis. The date of registration will be the date on which the first installment of fee is deposited.

“Open and Distance Learning Mode” shall have the same meaning as defined under the UGC(Open and Distance Learning Programs and Online Programs) Regulations 2020;

“Online Mode” shall have the same meaning as defined under the UGC (Open and Distance Learning Programs and Online Programs) Regulations 2020;

“ODC” shall mean the Oral Defense Committee, and shall consist of the Director/Principal/Head of the concerned College, the supervisor(s), and at least one of the two external examiners.

“Plagiarism” means the practice of taking someone else’s work or idea and passing them as one’s own;

“Programmed” means a higher education programmed pursued for a degree specified by the Commission under sub-section (3) of section 22 of the Act;

“Prospectus” means any document, whether in print or otherwise, issued for providing fair and transparent information relating to a Higher Educational Institution and programmed, to the general public (including to those seeking admission in such Higher Educational Institutions) by the Higher Educational Institutions;

Dulawa

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

“RAC” shall mean the Research Advisory Committee, which will consist of the Research Supervisor(s), the Principal of the college, Head of the concerned department, if applicable, and the senior most faculty of the college preferably from the related area/discipline.

“Registration Period” shall mean the length of period commencing with the date of registration and ending on the date of award of the Ph.D. degree, counting out any gaps as per Clause 11 of the Ordinance.

“RDC” shall mean Research Degree Committee, and shall consist of the Vice-Chancellor, Director/Principal of the concerned college, Controller of Examinations, and two Professors of the University other than the Supervisor(s) of the candidate to be nominated by the Vice-Chancellor. The Vice Chancellor shall be the Chairman of the Committee.

“Research Proposal” means a brief write-up giving an outline of the proposed research work which the Ph.D. scholar shall submit along with the application for registration for Ph.D. programmed;

“SOP” shall mean the Standard Operating Procedure governing the Ph.D. program of the University. (Annexure –).

“Sponsored Research Scholar” shall mean a research scholar sponsored by an employing organization

“URCC” shall mean a University Research and Consultancy Centre which will be the nodal office controlling the Ph.D. program in the University.

“University” means Future University Bareilly

2 Academic, research, administrative, and infrastructure requirements to be fulfilled by colleges for offering Ph.D. program.-

(1) Post-graduate Colleges offering 4-year Undergraduate Programme and/or Post-graduate Programme, may offer Ph.D. programme, provided they satisfy the availability of eligible Research Supervisors, required infrastructure, and supporting administrative and research facilities as per these Regulations.

i. At least two faculty members in a college

ii. Adequate infrastructure, administrative support, research facilities and library resources for research

(2) The University shall provide facilities for studies and research leading to award of the degree of Doctor of Philosophy. The program shall be conducted at and through the Faculties of the University, subject to the guidelines laid down by the Academic Council and control exercised by the University Research and Consultancy Centre (URCC) and Central Research Committee (CRC).

(3) URCC will notify a prospectus well in advance on the university website specifying the number of seats for admission, subject/discipline-wise distribution of available seats, criteria for admission, the procedure for admission, and all other relevant information for the candidates including the seats filled by Research scholars.

(4) URCC shall maintain a list of Ph.D. supervisors (specifying the name of the supervisor, his or her designation, and the department/school/center), along with the details of Ph.D. scholars (specifying the name of the registered Ph.D. scholar, the topic of his/her research and the date of admission) admitted under them and upload the same on the website of the university and update this list every admission cycle.

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

- (5) A Research Scholar shall be required to pursue the research work or any prescribed course work at the colleges of the University/approved institution and/or industry under the guidance of approved supervisor(s). The CRC may permit a research scholar to carry out research work outside the University at a Research Centre approved by the University (**Annexure –**). Further, the CRC may also permit the research scholar to work at his place of employment provided adequate facilities for research on the proposed topic of research are available there to the entire satisfaction of the CRC and approved by URCC.

3 COMPOSITION OF CRC, URCC, RDC, RAC

3.1 The composition of Central Research Committee (CRC) shall be as:

(i)	Dean of Research and Development	Chairperson
(ii)	Dean of Concerned Faculty and Two Professor of the each concerned faculty	Members
(iii)	Two associate professor and one assistant professor having Ph.D. Degree by rotation for the period of two years from each faculty	Members
(iv)	Two subject experts not below the rank of Professor/Associate Professor from other university nominated by Vice Chancellor -	External Experts
(v)	One nominee of the URCC appointed by the Vice Chancellor	Members
(vi)	Joint Registrar (R & D)	Member secretary

3.2 The composition of University Research Consultancy Committee (URCC) shall be as:

(i)	Vice Chancellor	Chairperson
(ii)	Dean (Research and Development)	Convener
(iii)	Two Deans by rotation for the period of three years	Members
(iv)	Three professors by rotation for the period of three years	Members
(v)	Special invitee(s) with the permission by the Vice Chancellor	Members
(vi)	Joint Registrar (R & D)	Member
(vii)	Registrar	Member Secretary

3.3 the composition of Research Degree Committee (RDC) shall be as:

(i)	Vice Chancellor	Chairperson
(ii)	Director/Principal/Head of concerned College/Faculty	Members
(iii)	Controller of Examinations	Members
(iv)	two Professor of the University other than the Supervisor(s)	Members
(v)	Registrar of the research scholar to be nominated by the Vice Chancellor	Member Secretary

3.4 The composition of Research Advisory Committee (RAC) shall be as:

(i)	Principal/Head of the College/Faculty	Chairperson
(ii)	Research Supervisor(s)	Convener
(iii)	Senior most faculty of the college/dept. preferably from the related area/discipline	Member

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

4 ADMISSION ELIGIBILITY

4.1 A candidate possessing any one of the following qualifications shall be eligible to apply for admission to a Ph.D. program of the University.

a. Candidates who have completed:

A 1-year/2-semester master's degree programme after a 4-year/8-semester bachelor's degree programme or a 2-year/4-semester master's degree programme after a 3-year bachelor's degree programme or qualifications declared equivalent to the master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and accreditation agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country to assess, accredit or assure quality and standards of the educational institution.

A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Provided that a candidate seeking admission after a 4-year/8-semester bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

4.2 Candidates who have completed the M.Phil. program with at least 55% marks in aggregate or its equivalent grade in a point scale wherever grading system is followed or equivalent qualification from a foreign educational institution accredited by an assessment and accreditation agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country to assess, accredit or assure quality and standards of educational institutions, shall be eligible for admission to the Ph.D. programme. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates as per the decision of the Commission from time to time.

Note: The eligibility marks of 55% (or an equivalent grade in a point scale wherever grading system is followed) and the relaxation of 5% to the categories mentioned above are permissible based only on the qualifying marks without including the grace mark procedures.

b. Eligibility Criteria for Admission to Ph.D. in Nursing

- (a) M.Phil. (Nursing) or M.Sc. (Nursing) or a Post Graduate degree in Nursing recognized by Council with 3 years teaching or Clinical experience after M.Sc. (Nursing) for enrolment for Ph.D. in Nursing (part-time) under Faculty of Nursing in the respective University.
- (b) The scholars should have passed M.Sc. (Nursing) with a minimum of 60% marks.

5 APPLYING FOR ADMISSION

The candidate shall apply for admission in the prescribed form available on the website of the University (www.futureuniversity.in), or the office of the University Research Cell (Annexure -).

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

Applicants who are in employment of any organization either in India or abroad will be eligible for registration as Research Scholar provided:

- a. they fulfill qualifications laid down in Clause 4 above;
- b. the applicant who is pursuing employment, must produce a No Objection Certificate (NOC) from his/her employer;
- c. the applicant proves to the satisfaction of the CRC that his employment duties will permit him to devote sufficient time for research work and prescribed course;
- d. the application for admission is endorsed by the Head of applicant's employing organization;

6 ADMISSION TEST AND RESEARCH PLAN

The University shall admit the candidates by a two-stage process through:

- 1.1. Each candidate shall be required to take a Future University Research Aptitude Test (FURAT) which shall comprise of written test (weightage of 70%) and interview (weightage of 30%). The written test shall carry maximum 70 marks and interview/viva-voce shall carry 30 marks.
- 1.2. The syllabus of FURAT shall consist of 50% questions on Research Methodology and 50% questions shall be subject specific. The Entrance Test (FURAT) will be conducted at the Centre(s) notified in advance (change of Centre, if any, shall be notified well in advance) twice a year (2nd Saturday of January and July). In case of holiday, the next working day will be the date of the admission test. In Special circumstances, the written test may be conducted in online mode using a pre-approved platform.

Note: Presently FURAT is held only at the University campus, Bareilly

- 1.3. The FURAT intends to test the basic capability of the candidate to undertake research work. A minimum score of 50 percent shall be required to clear the test under each category i.e. Research Methodology and subject specific and be eligible to present the research plan to the CRC.
- 1.4. The written test shall be conducted by the Examination Cell of the University which shall notify the result of the candidates those who qualify the written test. The candidates those who qualify the test shall be required to appear for the interview on the date as notified. The dates for interview shall be notified by the Ph.D. Cell of the University.
- 1.5. An interview/viva-voce shall be organized by the respective CRC on the dates thus notified for the candidates those who qualify the written test. The interview/viva-voce shall consider the following aspects:
 - (i) Research Interest/Area through the presentation
 - (ii) Whether the candidate possess the competency for the proposed research
 - (iii) The proposed area of research can contribute to new/additional knowledge

The marks scored by the candidates in the interview/viva-voce shall be submitted by CRC to the Examination Cell of the University.

The Final result composite of marks of written test and interview/viva-voce of the qualified candidates shall be declared by the Exam Cell of the University.

Note: Candidates who have qualified UGC-NET (including JRF)/UGC-CSIR NET (including JRF)/SLET/Teacher fellowship holder or have passed M.Phil programme are exempted from the University FURAT.

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

The candidates those who qualify the FURAT shall be required to submit the requisite Registration Fee. The date of registration will be the date on which the candidate deposits the requisite Registration Fee.

On clearance of the entrance test (FURAT), the CRC Chairperson will appoint a proposed supervisor to the candidate under whose supervision the candidate will formulate the research proposal to be presented during the first CRC.

- a. On clearance of the entrance test (FURAT), the applicant needs to send six copies of statement of research purpose/ synopsis, within three months of declaration of FURAT result, to CRC mentioning the topic of his proposed research and objectives of the work that the candidate intends doing on the subject or topic (Indicative format for the same is as **Annexure –**).
- b. Candidate shall be required to discuss his/her research plan before the CRC, justifying his/her suitability to pursue research which will consider the following aspects, viz:
- (a) the candidate possesses the competence for the proposed research;
 - (b) the research work can be suitably undertaken at the College;
 - (c) the proposed area of research can contribute to new/ additional knowledge.

CRC will also convey its views on the additional course paper, including the subject, if needed, that the candidate may have to undertake in addition to the three mandatory papers during course work.

- c. On basis of the contents of the Research Plan and the presentation, the CRC shall either recommend the case for consideration of the concerned BOS, or, may ask the candidate to make a fresh presentation of the Research Plan. The CRC shall give its recommendations on the prescribed format. (**Annexure –**).
- d. A candidate will ordinarily be allowed two attempts for presentation before the CRC. In case the Research Plan of a candidate is not approved, a third attempt may be allowed only with the approval of the Vice-Chancellor on the specific recommendation of the CRC, justifying the reasons for an extra attempt. Under no circumstances the duration of approval of research plan would exceed eighteen months from the date of FURAT result.
- e. While recommending the Research Plan, the CRC will also recommend the supervisor(s) of the thesis in line with the qualification under Clause 9.

7 REGISTRATION AS A RESEARCH SCHOLAR

- a. After the acceptance of the Research Plan and the name of Supervisor(s) of a candidate by the CRC, the case shall be submitted to the BOS for its consideration and approval. The BOS would normally meet in the third week of January and July each year. If an approval is not accorded by the BOS, then such candidate may submit his/her case for fresh for approval through the CRC, taking into consideration the views of the BOS, and presenting a fresh/modified Research Plan.
- b. On the approval of the CRC and BOS, the candidate will receive a letter of offer of admission from URCC against which s/he will be required to deposit the fees as prescribed by the University (**Annexure –**). A candidate shall be formally registered as a Research Scholar with effect from the date on which s/he has deposited the required fee with the University. A formal letter of registration of the candidate would be issued by the URCC.
- c. A candidate shall be required to renew his/her Registration every year in the manner prescribed by paying the fees as prescribed by the University from time to time.

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

8 COURSE WORK

All research scholars admitted to the Ph.D. programme shall be required to complete the prescribed course work during the initial two semesters from the date of the registration. The credits assigned to the Ph.D. course work shall be a minimum of 14 credits and maximum of 18 credits. The research scholar shall be evaluated at the end of the course work. The research scholar has to pass the coursework with minimum 55% marks.

- a. The course work shall be treated as a prerequisite for completion of Ph.D. programme. Registered students will be required to take a minimum of three courses and up to a maximum of four courses (of 4 credits each) as per the decision of the College Research Committee, plus mandatory two (2) credit course work titled Research and Publications Ethics (RPE) as per UGC circular No F.1-1/2018(Journal/Care) in 2019 and a research methodology course. The University Research Advisory Committee can also recommend UGC recognized online courses as part of the credit requirements for the Ph.D. programme.
- b. All Ph.D. scholars, irrespective of discipline, shall be required to train in teaching /education /pedagogy/writing related to their chosen Ph.D. subject during their doctoral period. Ph.D. scholars may also be assigned 4-6 hours per week of teaching/research assistantship for conducting tutorial or laboratory work and evaluations.
- c. The following 14 credit courses are mandatory for a student to complete during two semesters starting from the date of registration:
 - (a) One course on Research Methodology (4 Credits),
 - (b) One course on Quantitative Methods and Computer Applications (4 Credits),
 - (c) Review of literature in the area of research to be evaluated by the external examiner and CRC through a seminar/ presentation (4 Credits).
 - (d) Research and Publications Ethics (RPE) – 2 Credits

Additional course where recommended by URCC/CRC under Clause 6.3:

- (e) Advance level course preparing the student for the field of research (4 credits).

Note: A Ph.D. scholar must obtain a minimum of 55% marks or its equivalent grade in the UGC 10-pointscale in the course work to be eligible to continue in the programme and submit his or her thesis.

- d. Minimum qualification of the faculty member(s) teaching the course work shall be Ph.D. in relevant subject areas having more than ten (10) years of teaching experience in case of 'd' above.
- e. The research scholar shall be required to carry out intensive research on the approved topic. At the end of the first semester from the date of registration, the scholar shall be required to submit a Term Paper and present the same to the CRC. At this stage the scholar will have an option to review the topic of research and if recommended by the CRC/BOS, the same shall be considered final after seeking due approval. Further change in the topic would be allowed on the recommendation of CRC/BOS only in exceptional cases and with the approval of the Vice Chancellor.

9 ELIGIBILITY CRITERIA TO BE A RESEARCH SUPERVISOR/CO-SUPERVISOR

9.1 (A) Eligibility to be appointed as a Supervisor/Co-Supervisor, for faculty, of all colleges, other than Medical and Dental College shall be:

- (i) Any regular Professor/ Associate Professor of the University with a Ph.D. degree in the respective discipline and at least five research publications in refereed/ peer-reviewed journals and any regular Assistant Professor of the University with a Ph.D. degree and at least three

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

research publications in refereed journals would be eligible to be considered as research supervisor/ co-supervisor.

- (ii) In case of topics which are of inter-disciplinary nature where the Department concerned feels that the expertise in the Department has to be supplemented from outside, the Department may appoint a Research Supervisor from the Department itself, who shall be known as the Research Supervisor, and a Co-Supervisor from outside the Department/Faculty/College/Institution on such terms and conditions as may be specified and agreed upon by the consenting Institutions/Colleges.

Note:

- (i) Refereed journal would be journals as specified by UGC from time to time through notification. Currently refereed journals indexed in Scopus, Web of Science and Indian Citation Index and PubMed are acceptable.
- (ii) Only papers in above referred journal with faculty as the first or second author only would be considered as valid papers.
- (iii) Provided further, that in areas/ disciplines where there is no or only a limited number of refereed journals, the URCC may relax the above condition for recognition of a faculty member as Research Supervisor with reasons recorded in writing, duly routed through the BOS, and due approval of the Vice Chancellor. The Academic Council would be notified of the same from time to time.

Only a full-time regular teacher of the University can act as a supervisor. External supervisor(s) are not allowed. However, a co-supervisor can be allowed from other institutions with available Research facility with the recommendation of CRC and approval of the Vice Chancellor. Adjunct Faculty members shall not act as Research Supervisors and can only act as co-supervisors.

Note: Faculty members with less than three years of service before superannuation shall not be allowed to take new research scholars under their supervision. However, such faculty members can continue to supervise Ph.D. scholars who are already registered until superannuation and as a co-supervisor after superannuation, but not after attaining the age of 70 years.

- a. The allocation of Research Supervisor for a research scholar shall be decided by the CRC of the concerned College, depending upon the number of scholars per Research Supervisor, the available specialization among the Supervisors and research interests of the scholar as indicated by him/her at the time of presentation before the CRC.
- b. In case of topics which are of inter- disciplinary nature, where the CRC of the concerned College feels that the expertise in the College has to be supplemented from outside, the concerned College shall appoint a Research Supervisor from the College itself, who shall be known as Research Supervisor, and a Co- Supervisor from outside the College or University on such terms and conditions as may be specified and agreed upon by the consenting Co-supervisor and his/her Institution/ College.
- c. An approved Research Supervisor/ Co- Supervisor who is a Professor, at any given point of time, can guide not more than Eight (8) Ph.D. scholars. An Associate Professor as Research Supervisor can guide up to a maximum of six (6) Ph.D. scholars and an Assistant Professor as Research Supervisor can guide up to a maximum of four (4) Ph.D. scholars.
- d. The BOS, on the recommendation of the CRC, shall consider the names of the Supervisor/Co-supervisor for approval.
- e. A change of Supervisor/co-supervisor shall be permitted in case of inability or non-availability of the Supervisor. The BOS, on recommendation of the CRC, shall seek approval from the Vice Chancellor for appointment of a Caretaker Supervisor/ re-allotment of supervisor.

Number of
research
scholars under a
supervisor

Jalawa

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

- f. In case of relocation of a Ph.D. woman scholar due to marriage or otherwise, the research scholar shall be allowed to be transferred to the University to which the scholar intends to relocate provided all the other conditions in these regulations are followed in letter and spirit and the research work does not pertain to the project secured by the parent institution/supervisor from any funding agency. The scholar will however give due credit to the parent Research Supervisor/ Co-supervisor and the Future University for the part of research already done.
- g. In case of relocation of a Ph.D. woman scholar due to marriage or otherwise, from another University to Future University, the research scholar would be used to further proceed with the research work, if allowed to be transferred by the University where the scholar was originally registered and the guidelines of UGC were followed in letter and spirit. The scholar will give due credit to the parent Research Supervisor/ Co-supervisor and the parent University for the part of research already done. In case the transfer of research data is not allowed the scholar case will be reviewed by the CRC and BOS and approval to proceed further will be sought from the Vice Chancellor.

10 PERFORMANCE MONITORING

- a. There shall be a Research Advisory Committee for each Ph.D. scholar. The Research Supervisor of the scholar shall be the Convener of the Committee. This Committee shall have the following responsibilities:
 - (a) To review the research proposal and finalize the topic of research;
 - (b) To guide the research scholar to develop the study design and methodology of research and identify the course (s) that he/she has to do;
 - (c) To periodically review and assist in the progress of the research work of the research scholar.
- b. The academic/research progress of each research scholar will be regularly monitored by the RAC. A research scholar shall appear before the CRC once in six months to make a presentation of the progress of his/ her work for evaluation and further guidance. The six-monthly progress reports will be submitted by CRC to the URCC with a copy to the research scholar and RAC.

The Semester Progress Review Meeting shall be held as specified in the Academic Calendar in the second week of January and July each year. A student cannot skip a presentation without prior permission, subject to a maximum of two presentations in the complete duration. The RAC must record the progress of the research in the Semester Progress Review form and submit it to CRC (**Annexure –**).

In case the progress of the Ph.D. scholar is unsatisfactory, the Research Advisory Committee shall record the reasons for the same and suggest corrective measures. If the Ph.D. scholar fails to implement these corrective measures, the Research Advisory Committee may recommend, with specific reasons, the cancellation of the registration of the Ph.D. scholar from the Ph.D. programme

- c. The CRC after having considered the progress report of each research scholar shall recommend any of the following:
 - (i) Continuation of registration, or
 - (ii) Continuation of registration and issuance of a warning to the research scholar and making recommendation of steps necessary to improve his/her performance in consultation with the supervisor(s) or
 - (iii) Termination of registration.

[Signature]

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

If the research scholar is issued a warning letter, two times, the minimum registration period for allowing a candidate to submit the thesis shall be increased by one semester every time a warning has been issued.

Copy of the same would be sent to the scholar, supervisor and the URCC for records in the scholar's file.

11 DURATION OF THE PROGRAMME

Ph.D. programme shall be of a minimum duration of three years, including coursework and a maximum of six years. From date of registration.

- a. The minimum period of programme after which a research scholar can submit the thesis shall be three years from the date of registration.
- b. A research scholar shall normally be allowed to submit his thesis within a maximum period of six (6) years. However, in exceptional cases, this limit may be extended by the Vice-Chancellor by a maximum period of two years, on specific request from the research scholar duly recommended by the CRC. This extension shall be provided subject to re-registration. Thus, the total duration shall not exceed eight years.
- c. The Women candidates and Persons with Disability (more than 40% disability) shall be allowed a relaxation of two years for Ph.D. programme in the maximum duration of ten (10) years. In addition, the women candidates shall be provided Maternity Leave/ Child Care Leave once in the entire duration of Ph.D. programme for up to 240 days.

12 EVALUATION AND ASSESSMENT METHODS, MINIMUM STANDARDS/ CREDITS FOR THE AWARD OF THE DEGREE PRE-THESIS SUBMISSION PRESENTATION

- a. Upon satisfactory completion of course work, and obtaining the credits prescribed in Clause 8, as the case may be, the Ph.D. scholar shall be required to undertake research work and produce a draft thesis within stipulated time as per this ordinance.
- b. A pre-thesis submission presentation by the research scholars before the CRC is an essential requirement. On completion of the research work, the research scholar shall submit eight copies of the summary of his research work including bibliography, two copies of the draft thesis, copy of the research publications related to the thesis and one CD containing draft thesis to the CRC through his/ her supervisor(s) and make a presentation at which faculty members and other research scholars/students may be present. CRC will invite all University Colleges/ Departments for the pre-thesis presentation.
- c. The research scholar shall be required to submit his/ her thesis within three months from the date of pre-thesis submission presentation by the research scholars. However, in case a candidate fails to submit his/ her thesis within the stipulated time and has suitable justification for the same, the Director/Principal/Head of the College may, on recommendations of the CRC, grant an extension of not more than three months, i.e., the research scholar may be allowed to submit his/ her thesis within a period not exceeding six months from the date of pre-thesis submission presentation. The URCC of the University will have a mechanism using well-developed software applications to detect Plagiarism in research work and the research integrity shall be an integral part of all the research activities leading to the award of a Ph.D. degree. The URCC will mention the report of the Plagiarism soft ware for further action.
- d. The research scholar will be required to submit his/her declaration and a certificate from his/ her supervisor(s) in the prescribed format countersigned by the Director/Principal/Head of the College vouching that the plagiarism is within the permitted limit and that the work embodied in the thesis titled "_____ " is original and has been carried out by the research scholar and that it has not been submitted in full or in part for any other

Dulawa

Dean
Faculty of Engg. & Tech
Future University
Bareilly

Academy Council
Future University
Bareilly

diploma or degree of this or any other University. A certificate indicating the similarity index generated by the certified Anti- Plagiarism tool used by the University has to be included in the thesis duly countersigned by the Principal/ Director/ Head of the College (**Annexure – J**).

13 APPOINTMENT OF EXAMINERS

a.

- aminers
- aminers
de the state
- (a) A panel of six (06) experts of Professor level in the area of research work which may include experts from outside India would be suggested by the supervisor(s) and placed before the CRC for its recommendations. The CRC may delete/add any of the name(s) proposed by the supervisor(s).
 - (b) A person from the same Institution where the research scholar is employed cannot be appointed as an external examiner. Further, a person from a laboratory/institution/approved research centre to which the Co- supervisor of the research scholar belongs, cannot be appointed as an external examiner.

- b.
- On receipt of the draft thesis, the Director/Principal/Head of the College/ Department shall send the panel of examiners as approved by the CRC to the Controller of Examination who shall get the Board of Examination approved from the Vice Chancellor. The Board shall consist of one internal examiner from amongst the supervisor(s), and two external examiners from India or abroad. However, out of the two external examiners selected, at least one shall be from outside the state of Uttar Pradesh. The examiners shall normally be chosen from the panel of examiners recommended by the CRC. In case one or more external examiners so appointed decline to examine the thesis, another external examiner shall be appointed out of the panel. In case the panel gets exhausted, the CRC shall recommend additional names.

14 THESIS SUBMISSION

- a.
- The thesis shall be a piece of research work characterized either by discovery of new facts or enunciation of a new theory or theories or by fresh interpretation of known facts or development of equipment making a distinct advancement in instrument technology. It should bear evidence of the research scholar's capacity for analysis and sound judgment as well as his ability to carry out independent investigation, design or development. The thesis has to be supplemented by published work, mandatorily. No part of the thesis or supplementary published work shall have been submitted for the award of any other diploma or degree anywhere. The thesis must contain a Declaration by the research scholar, a Certificate signed by the supervisors and CRC chairperson and a Plagiarism Verification form (**Annexure , and)**
- b.
- The thesis shall be written in English, other than research work carried out in languages, in specified format in accordance with the instructions contained in **Annexure –** of this Ordinance, until otherwise required by the specific discipline. In case the thesis to be submitted is written in language other than English, the same shall be approved by the Vice Chancellor on the recommendation of the CRC/BOS.
- c.
- A research scholar may submit his/her thesis within the stipulated time period, provided s/he has:
- (a) Completed the minimum period of registration as provided in Clause 11 of this Ordinance.
 - (b) Published minimum of two research papers in refereed journals of which at least one should be published in databases such as Scopus, Web of Science, PubMed and Indian Citation Index or as notified by UGC from time to time. However, if the research paper(s) has been accepted for publication, the same shall be treated as under publication



Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

and the CRC can recommend the submission of the thesis. The candidate is also required to make two paper presentations in conferences/ seminars, of which one should be conference/ seminar other than in house, before the submission of thesis for adjudication, and produce evidence for the same in the form of presentation certificates and/ or reprints.

- d. Five hard copies of the thesis in soft binding along with two copies of CD shall be submitted in the College/Department, where the Research Scholar has been registered. The same shall be forwarded to the COE for evaluation. In case a research scholar is being supervised by more than one supervisor, appropriate number of additional copies must be prepared to provide them one copy each.

Hard & Soft
copies of Thesis

15 EVALUATION

a. Evaluation of Thesis

- (a) Thesis shall be sent for evaluation only after the plagiarism verification report is found to be within the acceptable norms of the University.
- (b) Each examiner will be requested to submit a detailed assessment report and his/her recommendations on a prescribed performa to the COE within three months from the date of receiving the thesis.
- (c) In case the assessment report is not received from an external examiner within four months, the Vice-Chancellor may appoint another external examiner from the panel of examiners for evaluating the thesis.
- (d) Each examiner shall be required to state categorically whether in his/her individual opinion, the thesis should be:
 - i) accepted for the award of Ph.D. degree, or
 - ii) referred to the research scholar for submission in the revised form, or
 - iii) rejected.

The examiner shall state the reasons for recommending/ resubmission/ rejection of the thesis. If resubmission is recommended, the examiner(s) shall specifically indicate the modifications that need to be incorporated in the thesis by the research scholar.

- (e) On receipt of reports from all the examiners the COE shall place them before the members of RDC who will pursue the reports and recommend one of the following:
- RDC i) If the examiners are unanimous that the thesis be accepted for the award of the degree, the research scholar would be required to appear for oral defence.
 - ii) If the examiners are unanimous that the thesis be submitted in a revised form then the research scholar would be informed to submit the revised thesis incorporating the suggestions/ views from the examiners.
 - iii) If the examiners are unanimous that the thesis should be rejected then the research scholar will be informed accordingly and the research scholar shall be declared ineligible for the award of Ph.D. degree.
 - iv) If there is no unanimity between examiners, an additional external expert shall be appointed as examiner to evaluate the thesis. If the report of the latest examiner is also 'rejected', the thesis shall be rejected and the research scholar shall be declared ineligible for the award of Ph.D. degree. Should there be comments for modification the research scholar will undertake the necessary modifications and re-submit the thesis.

In case of Clause 15.1 (d) (ii) above, the COE in consultation with Director/Principal/ Head of the College shall also provide to the research scholar a list of all corrections and modifications required in the thesis, including suggestions made by the external examiners during the thesis evaluation. The research scholar shall incorporate all

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

suggestions and changes and submit the same to the CRC for review and approval for re-consideration of the thesis by the RDC.

b. Oral Defence

- (a) A research scholar, whose thesis is recommended for acceptance in accordance with the provision of Clause 15.1(d) (i) on the basis of thesis evaluation, shall be required to defend his work/thesis orally before a duly constituted committee, hereinafter referred to as Oral Defence Committee (ODC) during working hours of the University at the University premises. Any deviation from this procedure should have prior permission of the Vice-Chancellor.
- (b) ODC shall consist of the Director/Principal/Head of the concerned College, the supervisor(s), and at least one of the two external examiners, and shall be open to be attended by Members of the URCC, CRC, all faculty members of the College/ Department, other research scholars and other interested experts/ researchers from the University. The external examiner invited for oral defence examination shall submit his report in the prescribed Performa to the COE.
- (c) On the completion of all the stages of the examination, the COE shall put before the RDC, the report of the ODC to approve one of the following:
 - i) that the degree of Ph.D. be awarded, or
 - ii) that the research scholar be re-examined at a later specified time in a specified manner, or
 - iii) that the degree of Ph.D. not be awarded.

The research scholar shall incorporate all suggestions and changes as discussed in the ODC and submit the same to the CRC for review and approval for submission of the thesis after incorporating the suggestions/changes. The research scholar shall, thereafter, submit two hard-bound copies and two CDs of the thesis incorporating all necessary corrections/modifications. The COE will ensure that the electronic copy of the Ph.D. thesis is submitted to INFLIBNET within seven days of receipt of the CDs from the research scholar for hosting the same so as to make it accessible to all the Higher Educational Institutions and research institutions. The RDC will meet not before fifteen days of submission of the electronic copy to INFLIBNET.

16 AWARD OF THE DEGREE

- a. The Degree shall be awarded by the University provided that:
 - (a) The RDC so approves,
 - (b) The research scholar produces a "No Dues Certificate" in the prescribed form (Annexure –),
 - (c) The research scholar has submitted two hard bound copies of the thesis; one for the College Library and one for the Central Library and two soft copies in CD ROM in the structure prescribed by Shodhganga, INFLIBNET. These should incorporate all necessary corrections/modifications and have the consent of the CRC.
 - (d) The date of RDC approval shall be the date of completion of the degree.

Prior to the actual award of the degree, the University shall issue a Provisional Certificate to the effect that the Degree has been awarded in accordance with the provisions of the UGC Regulations, 2022.

Dean
Faculty of Engg. & Tech.
Future University
Bareilly

Academic Council
Future University
Bareilly

Ph.D. through Part-time Mode:

- (1) Ph.D. programmes through part-time mode will be permitted, provided all the conditions stipulated in these Regulations are fulfilled.
- (2) College/ Department will obtain "No Objection Certificate" through the candidate for a part-time Ph.D. programme from the appropriate authority in the organization where the candidate is employed, clearly stating that:
 - i. The candidate is permitted to pursue studies on a part-time basis.
 - ii. His/her official duties permit him/her to devote sufficient time for research.
 - iii. He/she will be relieved from the duty to complete the course work.
- (3) Notwithstanding anything contained in these Regulations or any other law, no college/ department shall conduct Ph.D. programmes through distance and/or online mode.
- b. Hard bound copies and CD ROM of the Ph.D. thesis, submitted after the oral defence examination, must contain the following copyright certificate in the beginning of the thesis, on a separate page on the left side:

**©Future University (Copyright)
Bareilly – Uttar Pradesh (India)
All rights reserved**

17 CANCELLATION OF REGISTRATION

The registration of a research scholar shall be cancelled after due approval of the Vice Chancellor in case of the following:

- a. If being a full time research scholar, s/he absents herself/ himself for a continuous period of six weeks without prior intimation/sanction of leave.
- b. If s/he resigns from the Ph.D. program and the resignation is duly recommended by the CRC.
- c. If s/he fails to renew the registration as per the provisions contained in this Ordinance.
- d. If his/her academic progress is found unsatisfactory by CRC.
- e. If s/he is found to be involved in an act of misconduct and/or indiscipline and termination is recommended by the College Research Committee or any other authority so authorized by the Academic Council.

18 GENERAL

Notwithstanding anything contained in this Ordinance, all categories of research scholars shall be governed by the rules and procedures framed by the University and enforced from time to time.

19 INTERPRETATION AND UNFORESEEN ISSUES

Notwithstanding anything stated in this Ordinance, for any unforeseen issues arising, and not covered by this Ordinance, or in the event of difference of interpretation, the Vice Chancellor may take a decision, after obtaining if necessary, the opinion/advice of a Committee consisting of any or all the Director/Principal/Head of the Colleges. The decision of the Vice Chancellor shall be final and binding.



**Dean
Faculty of Engg. & Tech.
Future University
Bareilly**

**Academic Council
Future University
Bareilly**