

CENTRAL UNIVERSITY OF RAJASTHAN

Ph.D. Admissions 2022-23

Area of Research for Ph.D. Programmes

Sr. No.	Name of the Ph.D. Programme	Area of Research
1.	Architecture	• Energy Efficiency
		• Urban and Rural Planning
2.	Atmospheric Science	• Climate change and Water Resources
		• Climate impact Studies
		• Regional Climate Change Modelling,
		• Indian Summer Monsoon Dynamics and Variability
		• Modelling of Lightning and Thunderstorms
		• Atmospheric Chemistry
		• Atmospheric Trace Gases and Aerosols
		• Climate Change and Extreme Weather Events
		• Tropical Dynamics and Air-Sea Interaction
		• Aerosols and its impact on Climate change
3.	Biochemistry	• Functional Genomics, Genome Editing & Genetic Engineering, Plant Molecular Biology & Biochemistry
		• Antimicrobial Resistance; Host-Pathogen Interaction; Therapeutics Design
		• Application of Nanotechnology in Drug Delivery, Anticancer Agents, Natural Products, PDAC
		• Vaccine design & Drug Discovery for Parasitic and Viral diseases, Translational Bioinformatics
		• Protein Engineering and stability, Vaccine design, extremophilic bacteria and their Enzymes

		<ul style="list-style-type: none"> • Genomics, Proteomics, Molecular Biology & Genetic Engineering of Plant • Autophagy and Cancer Biology, Understanding the role of autophagy in cancer progression
4.	Biotechnology	<ul style="list-style-type: none"> • Nanomedicine for drug/gene delivery • Subunit vaccine development – chikungunya/ dengue/ HSV-2; Understanding the mechanism of adjuvant IgM-Fc; Development of biocatalyst for chemical reactions; Drug discovery – chikungunya/ dengue/ HSV-2 • Vaccine and Diagnostic kits development • Structure-Function Relationships of Amyloids and Amyloid-like Protein Aggregates: Their Roles in Health and Diseases. • Microbial Biofilm and their role in AMR: Molecular and Biochemical characterization. • ACC deaminase mediated mitigation of Abiotic stresses induced through drought and salinity: Molecular and Biochemical characterization. • Molecular Medicine and Human Reproduction
5.	Chemistry	<ul style="list-style-type: none"> • Coordination and Bioinorganic Chemistry, Inorganic Medicinal Chemistry • Organic synthesis – sustainable methodologies • Asymmetric Organocatalysis • Medicinal Chemistry • Organometallic Chemistry and Catalysis, • Site-Selective Catalysis by Molecular Rotors • Development of sustainable reactions and methods; • C-H functionalization; • Synthesis of Organic Materials for semiconductor applications • Surface Chemistry & Nanotechnology • Theoretical Chemistry, Non-adiabatic nuclear dynamics, Molecular Spectroscopy, Singlet Fission • Synthetic Organic Chemistry, C-H bond Functionalization, Bio-catalysis, Chemical-Biology • Organometallic Chemistry of Group 14-16 Elements, Inorganic Rings and Cages
		<ul style="list-style-type: none"> • Journalism and Media studies,

6.	Culture and Media Studies	<ul style="list-style-type: none"> • Intercultural Communication, • Media and Indigenous people, • Media, Culture & Heritage studies • Gender and Media • Media and Marginalised sections of society • Journalism practice • New media and digital media studies • Media convergence • Fake news and fact-checking • Media and information literacy • Media Studies, • Advertising and Public Relations, • Mass Communication Studies, • Online journalism.
7.	Commerce	<ul style="list-style-type: none"> • Finance (Investment / Sustainable / Infrastructure Finance) • Accounting and Finance (Recent trend in Accountancy) • Accounting, Finance and Taxation (Corporate Reporting)
8.	Computer Science	<ul style="list-style-type: none"> • Data mining • Big Data Analytics • Machine Learning • Image Processing • Artificial neural Network • IoT • Wireless Networks
9.	Computer Science and Engineering	<ul style="list-style-type: none"> • Network Security • Wireless Sensor Networks • Cloud Computing • Cloud Security • Machine Learning

		<ul style="list-style-type: none"> • Deep Learning
10.	Economics	<ul style="list-style-type: none"> • International Trade and Economics • Microfinance • Gender Studies • Growth and Development Studies • Development Economics (Health, poverty, rural livelihoods) • Environmental Economics.
11.	Electronics and Communication Engineering	<ul style="list-style-type: none"> • Nanobiosensor • Electronic Devices • 3D printed micro devices • Piezoelectric/ Ferroelectric devices • Energy harvesters • Spintronic devices • RF and Microwave Engineering • Antenna and Wave Propagation • RFID • Programmable Metasurface • Computational Electromagnetism
12.	English	<ul style="list-style-type: none"> • Indian Writing in English • Comparative Literature
13.	Environmental Science	<ul style="list-style-type: none"> • Air pollution, Aerosol dynamics, Glaciology • Environmental Remote Sensing and GIS • Wastewater Treatment, Nano-remediation, Environmental pollution monitoring and assessment • Bioremediation of organic and emergent contaminants • Environmental Biotechnology, Biofuel, Heavy metal-lanthanide bioremediation, Microbial synthetic ecology
		<ul style="list-style-type: none"> • Comparative Literature, • Bhakti Sahitya – Sanskrit - Telugu - Hindi - Tamil, • Folklore

14.	Hindi	· Bhakti Sahitya Journalism (Media)
		· आधुनिक और उत्तर - आधुनिक हिन्दी कविता, तुलनात्मक अध्ययन अनुवाद
		· लोक साहित्य
		· कथा साहित्य
		· Hindi Fiction
		· Women Studies
15.	Linguistics	· Morphology,
		· Sociolinguistics
		· Field Linguistics and Archiving
		· Language Documentation and Description
		· Sign Language Linguistics
		· Neurocognitive Linguistics and Clinical Linguistics
16.	Management	· Marketing Management
		· OB / HRM
17.	Mathematics	· Mathematical Programing and Machining System
		· Queueing Theory
		· Fluid Dynamics
		· Boundary Layer Theory
		· MHD
		· Fuzzy Optimization
		· Decision Making under Risk and Uncertainty
		· Stochastic Modeling in Wireless Networks
		· Performance Analysis of Communication Systems
		· Celestial Mechanics, Space Dynamics
		· Fuzzy Set Theory and its Application
		· Fuzzy Topology
		· Fuzzy Automata Theory
		· Rough Set Theory
· Category Theory		
· Computational Methods for Partial Differential Equations		

18.	Microbiology	• Microbial diversity and Phylogenetics
		• Bioprospecting of cyanobacteria
		• Cyanotoxins
		• Microbial Bioprocess
		• Bioenergy
		• Enzyme Technologies
		• Infectious diseases
		• Molecular Biology
		• Bioinformatics
		• Applied Microbiology
		• Microbial Catalysis
		• Algal Remediation
		• Petroleum Microbiology
• Water Desalination		
19.	Pharmacy	• Computer aided drug design
		• Synthetic/ Bio-active natural isolates
		• Pharmaceutical dosage form design
		• Delivery of herbal, bioactives and pharmaceuticals
20.	Physics	• Condensed Matter Physics (Theory and Experimental)
		• Nanomaterials and Fiber Optic Sensor
		• Mathematical Physics
21.	Public Policy, Law and Governance	• Public Policy, Affirmative Action and Social Policy
		• IPR, Administrative Law
		• Cyber Law, Labour Law
		• Governance
		• Climate Change
		• Water Management
		• Public Finance
		• Indigenous Social Work Practices
		• Social Work Education

22.	Social Work	<ul style="list-style-type: none"> · Action Research · Participatory Research · Natural Resource Management · Nomadic Communities and livelihood · Climate Change and Impact Assessment · Mental Health and Psychosocial Support · Life skill Education · Disaster Management · Ageing · Education · Gender studies · HRM · Mental Health · Public Health · Medical and Psychiatric Social Work · Gender Issues · Health · Ethno medicine Study · Tribal Right and Development · Disaster Management · Public health interventions · Psychosocial issues · Livelihood interventions
23.	Sports Psychology	<ul style="list-style-type: none"> · Cognitive Psychology in Sports · Health and wellbeing · Environment and Sports Performance · Exercise Psychology · Psychological Skills Training/Mental Training · Organizational Behavior in Sports

		<ul style="list-style-type: none"> • Psychology of Sports Excellence • Sports and Mental Fitness • Psychology and Sports Rehabilitation • Psychology of Coaching • Social Psychology in Sports
24.	Statistics	<ul style="list-style-type: none"> • Time Series • Applied Statistics • Structural Break • Outlier • Statistical Inference • Actuarial Statistics • Distribution Theory • Survival Analysis • Frailty Models • Statistical inference • Univariate Distributions • Bivariate Distributions • Computational Statistics • Reliability Theory and Statistical Learning • Statistical Quality Control • Statistical Inference • Industrial Statistics • Operations Research
25.	Yoga	<ul style="list-style-type: none"> • Autonomic function tests • Electroencephalography • High density electroencephalography • Polysomnography • Cardiovascular physiology • Cognitive physiology • Mental health

		<ul style="list-style-type: none"> · Ayurvedic medicine · Yoga postures · Shatkarma · Pranayama · Meditation · Sukshma and Sthoola vyayma
26.	Sports Bioscience	<ul style="list-style-type: none"> · Exercise Metabolism · Applied metabolism · Physiology · Nutrition to Exercise
27.	Education	<ul style="list-style-type: none"> · Educational Administration and Management, Women and Gender studies, Pedagogical Sciences, Displacement discourse, Tribal Discourse · Educational Psychology, ICT and Education, Pedagogical Sciences, Emerging Issues in Education and Teacher Education, Pedagogy of Science · Entrepreneurship in Education, Sociology of Education, Pedagogy of Mathematics & Recent Trends in Education & Pedagogy. · Science Education, Gender Studies, Educational Technology, Pedagogical Sciences · Pedagogy of Economics, Pedagogy of Commerce, Pedagogy of social science, Educational Management, Inclusive Education, Women in Management, Leadership in Education, Life Skills Education · Special Education, Value Education · Mathematics Education, Pedagogy of Mathematics, Assessment and Evaluation, Metacognition, Teaching Skills, Teaching, Environmental Education, ICT & Digital Learning, Women Education, Early Childhood Education, Research Methodology · Educational Technology & ICT, Pedagogy of Chemistry