

CENTRAL UNIVERSITY OF RAJASTHAN

Ph.D. Admission 2022-23 **Area of Research for Ph.D. Programmes**

Sr. No.	Name of the Ph.D. Programme	Area of Research
1.	Architecture	
		<ul style="list-style-type: none">• Energy Efficiency• Urban and Rural Planning
2.	Atmospheric Science	
		<ul style="list-style-type: none">• 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	
		<ul style="list-style-type: none">• 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
		<ul style="list-style-type: none"> • Microfinance
		<ul style="list-style-type: none"> • Gender Studies
		<ul style="list-style-type: none"> • Growth and Development Studies
		<ul style="list-style-type: none"> • Development Economics (Health, poverty, rural livelihoods)
		<ul style="list-style-type: none"> • Environmental Economics.
11.	Electronics and Communication Engineering	
		<ul style="list-style-type: none"> • Nanobiosensor
		<ul style="list-style-type: none"> • Electronic Devices
		<ul style="list-style-type: none"> • 3D printed micro devices
		<ul style="list-style-type: none"> • Piezoelectric/ Ferroelectric devices
		<ul style="list-style-type: none"> • Energy harvesters
		<ul style="list-style-type: none"> • Spintronic devices
		<ul style="list-style-type: none"> • RF and Microwave Engineering
		<ul style="list-style-type: none"> • Antenna and Wave Propagation
		<ul style="list-style-type: none"> • RFID
		<ul style="list-style-type: none"> • Programmable Metasurface
		<ul style="list-style-type: none"> • Computational Electromagnetism
12.	English	<ul style="list-style-type: none"> • Indian Writing in English
		<ul style="list-style-type: none"> • Comparative Literature
13.	Environmental Science	<ul style="list-style-type: none"> • Air pollution, Aerosol dynamics, Glaciology
		<ul style="list-style-type: none"> • Environmental Remote Sensing and GIS
		<ul style="list-style-type: none"> • Wastewater Treatment, Nano-remediation, Environmental pollution monitoring and assessment
		<ul style="list-style-type: none"> • Bioremediation of organic and emergent contaminants
		<ul style="list-style-type: none"> • Environmental Biotechnology, Biofuel, Heavy metal-lanthanide bioremediation, Microbial synthetic ecology
		<ul style="list-style-type: none"> • Air Pollution & Climate Change: Air Monitoring and effect on vegetation
		<ul style="list-style-type: none"> • Comparative Literature,
		<ul style="list-style-type: none"> • Bhakti Sahitya – Sanskrit - Telugu - Hindi - Tamil,
		<ul style="list-style-type: none"> • Folklore

14.	Hindi	<ul style="list-style-type: none"> • Bhakti Sahitya Journalism (Media) • आधुनिक और उत्तर- आधुनिक हिन्दी कविता • लोक साहित्य • कथा साहित्य • Hindi Fiction • Women Studies
15.	Linguistics	<ul style="list-style-type: none"> • Morphology, • Sociolinguistics • Field Linguistics and Archiving • Language Documentation and Description • Sign Language Linguistics • Neurocognitive Linguistics and Clinical Linguistics
16.	Management	<ul style="list-style-type: none"> • Marketing Management • OB / HRM
17.	Mathematics	<ul style="list-style-type: none"> • 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 • Applied Mathematics

		<ul style="list-style-type: none"> • Fracture Mechanics • Smart Material
18.	Microbiology	<ul style="list-style-type: none"> • Microbial diversity and Phylogenetics • Bioprospecting of cyanobacteria • Cyanotoxins • Miicrobial Bioprocess • Bioenergy • Enzyme Technologies • Infectious diseases • Molecular Biology • Bioinformatics • Applied Microbiology • Microbial Catalysis • Algal Remediation • Petroleum Microbiology • Water Desalination
19.	Pharmacy	<ul style="list-style-type: none"> • Computer aided drug design • Synthetic/ Bio-active natural isolates • Pharmaceutical dosage form design • Delivery of herbal, bioactives and pharmaceuticals
20.	Physics	<ul style="list-style-type: none"> • Condensed Matter Physics (Theory and Experimental) • Nanomaterials and Fiber Optic Sensor • Mathematical Physics
21.	Public Policy, Law and Governance	<ul style="list-style-type: none"> • Public Policy, Affirmative Action and Social Policy • IPR, Administrative Law • Cyber Law, Labour Law • Governance • Climate Change • Water Management • Public Finance
		<ul style="list-style-type: none"> • Indigenous Social Work Practices • Social Work Education

22.	Social Work	· 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	· 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 • Sampling Theory
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 · Sports Nutrition Biosensors · Rehabilitation in Sports · Sports Cardiology · Endocrine response to exercise · Biomarkers in Sports injury · Supplements in Sports Nutrition
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