



**Message from the Head of Department
on the Launch of the School of Stem Cell Technology**

It gives me immense pleasure to announce the official launch of the *School of Stem Cell Technology*. This marks a significant milestone not only for our department as well for the broader scientific and academic community. The establishment of this school reflects our unwavering commitment to pushing the frontiers of biomedical research, regenerative medicine, and translational science.

Stem cell technology holds transformative potential in the treatment of degenerative diseases, injury repair, and the understanding of human development. Existence of Stem Cell in our body has great medical potential. When stem cell divides each new cell can become another type of cell with specialized function such as muscle cell, red blood cell or nerve cells etc. Regeneration abilities offer new potential for treating diseases such as Diabetes, Neurological Disease, Duchenne muscular dystrophy, Nonunion of bone fracture, tendon repair, muscular dystrophy, heart disease, spinal cord injury. Therefore, a centre for stem cell study and therapy would prove constructive and revolutionary in health and research sectors in Bihar.

We are proud to bring together a distinguished guest faculty, cutting-edge research infrastructure, and strong industry partnerships to create an environment that fosters innovation and excellence. The School of Stem Cell Technology will serve as a hub for pioneering research, advanced training programs and impactful collaborations both nationally and internationally.

I extend my heartfelt gratitude towards The Hon'ble Chief Minister of Bihar, Shri Nitish Kumar Ji, for entrusting me with such a great responsibility and his continuous support in developing the School of Stem Cell Technology. I am also grateful to Prof. Sharad kumar Yadav, Hon'ble Vice-Chancellor of his unwavering support. I am thankful to our guest faculties, researchers, administrative staff, well wishers and supporters whose dedication and hard work have made this launch possible. Together, let us shape the future of regenerative medicine and biomedical science.

Warm regards,

Dr. H. N. Diwaker
Consultant,
School of Stem Cell Technology,



Message from the Vice Chancellor

Introduction of the School of Stem Cell Technology

Dear Students, Faculty, Researchers, and Esteemed Stakeholders,

It is with great pride and anticipation that I announce the official launch of the **School of Stem Cell Technology** at Aryabhata Knowledge University, Patna

This landmark development marks a significant stride in our commitment to advancing scientific frontiers and fostering innovation that serves humanity.

Stem cell research stands at the forefront of regenerative medicine, offering transformative potential in the treatment of diseases once considered incurable. By establishing this dedicated school, we aim to cultivate a hub of excellence where cutting-edge research, interdisciplinary collaboration, and academic rigor come together to nurture the next generation of scientists and medical pioneers.

The School of Stem Cell Technology will serve as a center for advanced education, pioneering research, and translational applications. It will empower students and scholars with world-class resources, esteemed faculty, and opportunities to engage in groundbreaking work that has both national and global significance.

As Vice Chancellor, I envision this school as more than an academic initiative—it is a commitment to healing, discovery, and hope. We welcome bright minds from across the world to join us on this journey, as we seek to unlock the immense promise of stem cell science.

Together, let us shape the future of medicine and redefine the boundaries of what is possible.

Warm regards,
Prof. Sharad Kumar Yadav
Vice Chancellor,
Aryabhata Knowledge University, Patna

Benefits

1 Healthcare Revolution

Develop treatments for local health challenges such as diabetes, thalassemia, and

2 Skill Development

Equips students and researchers with cutting-edge knowledge and

3 Research Hub

Helps position Bihar as a hub for advanced research, attracting national and international



National Contribution

4

Reduced dependency on

Educational

Equity 5

Policy Support Alignment

6

Supports the implementation of the National Education Policy

High Impact



Educational Impact

Empower thousands of students and researchers with access to advanced science. **Creates Bihar as an Educational Hub** and attract students from all parts of the country.



Socio-Economic Impact

Attracts biotech industries and **creates high-end, knowledge-driven jobs in Bihar**, boosting the local economy and talent



Healthcare Impact

Development of **cost-effective cell therapies** primarily to the **population of Bihar** and rest of the North India.



Collaborative Impact

Partnerships with AIIMS Patna and **Healthcare sector**, National Institutes, and

Vision



- To foster diverse interdisciplinary research initiatives in both fundamental and translational stem cell biology .
- To develop the next generation of leaders in stem cell education, research, and therapeutic applications .
- To establish itself as a premier educational hub for stem cell biology and regenerative medicine, while advancing experimental frameworks for applying stem cells to modify physiological and developmental characteristics in disease - affected tissues and organs .
- To achieve prominence in both basic and translational research through innovative and collaborative multidisciplinary approaches .
- To enhance prospects for international higher education and prepare individuals for leadership roles in the evolving fields of stem cell research, biotechnology, and pharmaceutical development .
- To promote career opportunities spanning across industrial sectors, academic institutions, research facilities, and laboratories

Mission

- To promote cutting-edge research in stem cell science, regenerative medicine, and allied fields.
- To provide world-class education and training for students, researchers and clinicians in emerging biotechnologies
- To foster interdisciplinary collaboration with academic institutions, hospitals, and industry for translation of outcomes
- To develop innovative and affordable therapies addressing chronic, degenerative, and genetic disorders
- To create a globally competitive ecosystem that nurtures scientific talent and contributes to healthcare, biotechnology, and national development

Stem Cell and Research Facility

A Stem Cell and Research Facility is a specialized center dedicated to advancing knowledge and innovation in **stem cell biology, regenerative medicine, and therapeutic applications**. The facility typically integrates **state-of-the-art laboratories, advanced instrumentation, and multidisciplinary expertise** to explore the potential of stem cells in treating chronic, degenerative and genetic disorders.

State of the art Infrastructure

- Clean rooms
- Advanced lab zones
- Stem cell lab equipment

Academic Program

- Research
- Collaboration with govt./academia
- IP generation





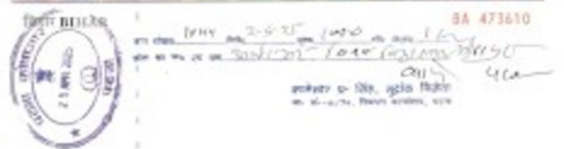
AKU, IGIMS sign MoU to promote academic growth

S K Mishra / THE

Patna: Aryabhatta Knowledge University (AKU) signed a memorandum of understanding (MoU) with the Indira Gandhi Institute of Medical Sciences (IGIMS) here on Monday to foster academic and research collaboration in the field of stem cell technology and regenerative medicines. The MoU was signed by IGIMS director Dr Bindey Kumar and AKU registrar Ramji Singh.

Addressing the academics and officials of both institutions on the occasion, AKU vice-chancellor Shashid Kumar Yadav pointed out that the newly established School of Stem Cell Technology at AKU will greatly benefit from this MoU and that the school will be fully functional soon.

The school's academic consultant, Dr H N Diwaker, detailed the progress made by the management in establishing this school. "Both institutions will benefit from the School of Stem Cell Technology as it will facilitate the treatment of several diseases like diabetes, neurological disorders and weakening heart muscles," Kumar said.



Memorandum of Understanding

The Memorandum of Understanding (this MoU) is made and executed on this date 05-05-2025 (Monday) at Patna.

BY AND BETWEEN

ARYABHATTA KNOWLEDGE UNIVERSITY, PATNA, was established by the Government of Bihar through the Aryabhatta Knowledge University Act, 2008 (Bihar Act 24 of 2008), hereby referred as AKU, Patna, which expression shall, unless repugnant to the context or meaning.

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MoU signed between Aryabhatta Knowledge University and IGIMS, Patna on 05.05.2025

Prof. (Dr.) Bindey Kumar, Director, IGIMS, Patna with Dr. H. N. Diwaker, Consultant, School of Stem Cell Technology, Aryabhatta Knowledge University and other officials of IGIMS Patna and Aryabhatta Knowledge University, Patna

आईजीआईएमएस-एकेयू स्टेम सेल पर करेंगे शोध

स्टेम सेल तकनीक और रिजनरेटिव मेडिसिन पर करेंगे काम

सम्बन्धीता

पटना, 5 मई: पटना में स्थित आईजीएमएस (IGIMS) और एकेयू (AKU) के बीच एक शोध सहयोगी समझौते पर हस्ताक्षर किए गए हैं। यह समझौता दोनों संस्थानों के बीच शोध और शैक्षणिक सहयोग को बढ़ावा देने के लिए है।



इस समझौते के तहत, दोनों संस्थानों के बीच शोध और शैक्षणिक सहयोग को बढ़ावा देने के लिए एक समझौता किया गया है।

स्टेम सेल तकनीक और रिजनरेटिव मेडिसिन पर करेंगे काम

आईजीएमएस के निदेशक डॉ. बिनदेय कुमार ने बताया कि यह समझौता दोनों संस्थानों के बीच शोध और शैक्षणिक सहयोग को बढ़ावा देने के लिए है।

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MoU signed between Aryabhatta Knowledge University and D. Y. Patil International University, Pune on 11.07.2025

Prof. (Dr.) Manish Bhalla, Vice-Chancellor, D. Y. Patil International University, Pune with Prof. (Dr.) Sharad Kumar Yadav, Vice-Chancellor, Aryabhatta Knowledge University, Patna



एकेयू और डीवाईपीआईयू के बीच हुआ एमओयू



समझौतापत्र दिखाते प्रो. शरद कुमार और कुलपति प्रो. मनीष भट्टा • जागरण जास, पटना : आर्यभट्ट ज्ञान विश्वविद्यालय और डीवाई पाटिल इंटरनेशनल यूनिवर्सिटी, पुणे के बीच नैनो टेक्नालोजी एवं स्टेम सेल विज्ञान अनुसंधान के लिए एमओयू हुआ। मौके पर एकेयू के कुलपति प्रो. शरद कुमार यादव और डीवाईपीआईयू के कुलपति प्रो. मनीष भट्टा मौजूद रहे। कुलपति प्रो. शरद कुमार यादव व डा. राकेश कुमार ने बहु-विषयक अनुसंधान एवं स्टार्टअप परियोजनाओं की जानकारी दी।

Dr. H. N. Diwaker, Academic Research Consultant, School of Stem Cell Technology, Aryabhata Knowledge University presented research paper on "Bone Marrow-Mono-Nucleated Cells in Healing of Supra-Coracoid in Chicken Model" at the National Conference of the Indian Society for Surgery of the Hand, Bangalore 2024.



School of Stem Cell Technology
(Empowering Future of Regenerative Medicine)
Aryabhatta Knowledge University, Patna

About the School of Stem Cell Technology

The School of Stem Cell Technology is a pioneering academic and research institute committed to advancing the frontiers of regenerative medicine, cell therapy, and tissue engineering. Our programs are designed to equip students, researchers, and professionals with deep theoretical knowledge and practical skills in stem cell biology and translational research.

Academic Program

M.S.(Master of Science) by Research in Stem Cell Technology and Regenerative Medicine

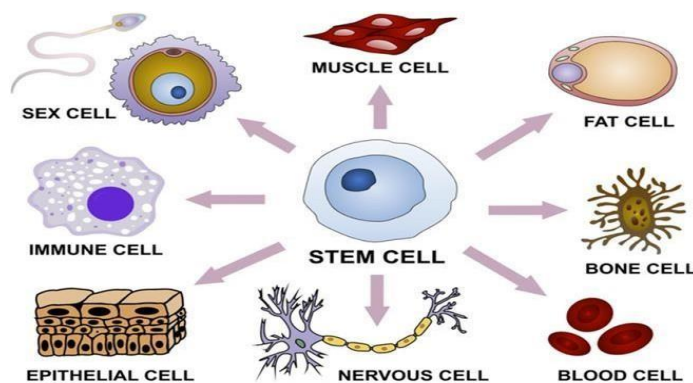
- **Duration:** 2 Years
- **Eligibility:** M.B.B.S., Bachelor's degree in Life Sciences, Biotechnology, Biochemistry, Zoology, Microbiology, or related fields
- **Core Subjects:**
 - Principles of Stem Cell Biology
 - Molecular and Cellular Techniques
 - Biostatistics and Bioinformatics
 - Immunology and virology
 - Regenerative Medicine
 - Bioethics & Regulatory Affairs
 - Laboratory & Clinical Applications



आर्यभट्ट ज्ञान विश्वविद्यालय
ARYABHATTA KNOWLEDGE UNIVERSITY

Course Curriculum

Master of Science (M.S.) (by Research)
Stem Cell Biology & Regenerative Medicine (SCBRM)
(AsperNationalEducationPolicy2020)



Approved by Board of Studies

School of Stem Cell Technology
Aryabhatta Knowledge University, Patna

1. Introduction

The School of Stem Cell Technology & Research, Aryabhata Knowledge University, Patna, will provide an advanced Master of Science (by Research) program in the field. This comprehensive curriculum integrates fundamental and practical science, encompassing cellular, molecular, and developmental biology principles, with particular focus on stem cell science – from its foundational concepts to contemporary and prospective applications in both preclinical and clinical settings.

2. Vision

The vision of program encompasses:-

- i. To foster diverse interdisciplinary research initiatives in both fundamental and translational stem cell biology.
- ii. To develop the next generation of leaders in stem cell education, research, and therapeutic applications.
- iii. To establish itself as a premier educational hub for stem cell biology and regenerative medicine, while advancing experimental frameworks for applying stem cells to modify physiological and developmental characteristics in disease-affected tissues and organs.
- iv. To achieve prominence in both basic and translational research through innovative and collaborative multidisciplinary approaches.
- v. To enhance prospects for international higher education and prepare individuals for leadership roles in the evolving fields of stem cell research, biotechnology, and pharmaceutical development.
- vi. To promote career opportunities spanning across industrial sectors, academic institutions, research facilities, and laboratories

3. Mission

- i. To deliver an interdisciplinary curriculum combining advanced theoretical knowledge with hands-on training in stem cell technologies.
- ii. To cultivate skilled professionals and researchers who contribute to ground breaking discoveries and clinical applications in regenerative medicine.
- iii. To promote industry-academia collaborations for the development of innovative therapies and healthcare solutions.

4. Goal

- i. Career pathways for graduates include research and academic positions in stem cell research, regenerative medicine, biotechnology, pharmacology, microbiology, and biomedical sciences departments.
- ii. The program provides extensive exposure to current research and development trends, preparing students for future research endeavours. Employment opportunities exist in research institutions and medical facilities conducting stem cell clinical trials.

5. Program Objectives (NEP-Aligned)

- i. To develop **highly skilled researchers** in stem cell biology, regenerative medicine, and translational research.
- ii. To promote **interdisciplinary education** in bioengineering, molecular biology, clinical sciences and allied disciplines.
- iii. To support **student-driven research** through flexible, mentor-guided path ways.
- iv. To ensure **alignment with national research priorities** and innovations in personalized medicine, gene therapy, and regenerative treatments.
- v. To inculcate **life-long learning abilities** amongst the learners of the program

6. Program Overview

- i. Degree Name: M.S. (by Research) in Stem Cell Biology and Regenerative Medicine
- ii. Mode: Full-time/Hybrid(with offline lab and online theory modules)
- iii. Duration:2 Years(can be extended to3years)
- iv. Total Credits: 96 credits(24 credits per semester)
- v. Exit Option: Exit after 1 year with Postgraduate Diploma (as per NEP's multiple entry-exit policy)
- vi. Ordinance and course curriculum may be revised as per the Apex body and UGC suggestions
- v. **Eligibility for admission:**
 - a. M.B.B.S. from Nationally/Internationally recognized Institutions of the respective nation.
 - b. B.D.S. from Nationally/Internationally recognized Institutions of the respective nation.
 - c. B.V.Sc. & A.H./equivalent from Nationally/Internationally recognized Institutions of the respective nation.
 - d. Bachelor Degree (Hons.) with Biological Science/Life Sciences/Agriculture Science/ Anatomy/Physiology/Pharmacology/Microbiology/Biotechnology/Molecular Biology/Zoology/Genetics/ Immunology/ Biochemistry/Bioinformatics/Biomedical Sciences) subject as the major subject from Nationally/Internationally recognized Institutions
 - e. Eligible Age group–
 - i. 20- 27 years for Bachelor Degree holders
 - ii. Up to 35 years for Professional Degree holders with continuity in relevant fields.
 - f. 50 percent as minimum aggregate percentage for General candidates
 - g. Relaxation of marks and age for SC/ST Candidates/other reserved category (as perstate government guidelines)–minimum-45%,additional relaxation of 3 years for both the categories

- vi. Sponsored and foreign candidates as per the ordinance.
- vii. Candidate's eligibility will be decided based on entrance test organized by Aryabhata Knowledge University, Patna and Interview organized by the University:
 - a. Entrance Test for the program will be conducted over 100 marks. Cut off for interview round will be decided based on 3 times the available seats.
 - b. Interview will comprise of 10 questions from the panel. For each correct answer 1 point will be awarded.

viii. **Entrance Test Format**

- a. Duration:120 minutes
Total Marks: 100
Mode: MCQ-based
- b. All questions will be from the undergraduate level.
- c. Structure:
 - Section A–Core Life Sciences (50Marks)

Focus: Cell biology, molecular biology, microbiology, genetics, physiology, immunology, developmental biology

Sample Topics: Structure and function of DNA/RNA/proteins, Cell cycle and apoptosis, Genetic inheritance and CRISPR basics, Human anatomy and organ systems, immunity
 - Section B– Biotechnology & Applied Sciences (40Marks)

Focus: Bioinformatics, biostatistics, recombinant DNA tech, lab techniques, tissue engineering

Sample Topics: PCR, ELISA, gel electrophoresis, Culture media and aseptic techniques, Biomaterials and scaffold design, Data analysis and graph interpretation, NCBI, BLAST, KEGG usage
 - Section C –Research Aptitude & Analytical Reasoning (10Marks)

Focus: Data interpretation, scientific logic, ethics

Sample Topics: Interpreting experimental results, identifying errors in research design, Understanding research ethics and consent, Logical flow in hypothesis testing

ix. Curriculum structure

SEMESTER-I

S. No.	Theory Papers	Theory marks	Internal marks	Total marks	Credits
1	Cell Biology and Advanced Molecular Biology	60	40	100	3
2	Introduction to Stem Cells and Developmental Biology	60	40	100	3
3	Biostatistics and Bioinformatics	60	40	100	3
4.	Immunology and Virology	60	40	100	3
5	One paper to be selected from General Elective list	40	30	70	2
6	Scientific Communication and Research Ethics	40	30	70	2
7	Seminar and Journal Club (Presentation Based)	-		30	1
S. No.	Lab/Practical	Marks			
I	Immunology		40	40	2
II	Biochemistry and Bioinformatics		40	40	2
III	Molecular Biology & Genetic Engineering		40	40	2
IV	Industry visit and report		-	20	1
	Total				24

SEMESTER-II

S. No.	Theory Papers	Theory marks	Internal marks	Total marks	Credits
1.	Principles of Stem Cell Biology	60	40	100	3
2.	Genetic Engineering and CRISPR Technology	60	40	100	3
3.	Embryonic Stem Cell Biology and Applications	60	40	100	3
4.	Adult and Induced Pluripotent Stem Cell Biology and Applications	60	40	100	3
5.	Advanced Immunology, Immunotherapy and Stem Cell Therapy	60	40	100	3
6.	One paper to be selected from Discipline Specific Electives list	40	30	70	2
7.	Indian Knowledge System in Stem Cell (Non- Credit)	-	-	-	-
S. No.	Lab/Practical	Marks			
V	Good Laboratory Practices & Regulatory Affairs	-	40	40	2
VI	Cell Culture, Differentiation & Characterization	-	40	40	2
VII	Scientific Writing and Data Interpretation	-	40	40	2
VIII	Skill Development for Stem Cell and Regenerative Medicine	-	-	20	1
	Total	-	-	-	24

SEMESTER-III

S. No.	Practical Papers	Theory marks	Internal marks	Total marks	Credits
1	Biomaterials and Tissue Engineering	60	40	100	3
2	Project Work I	60	40	100	3
3	Paper presentation I in Seminar and Protocol Proposal	-	-	100	2
4	Paper presentation II in Seminar and Progress review	-	-	100	2
5	Internship/Industry-Academic Research Project	-	-	100	2
S. No.	Lab/ Practical				
IX	Regenerative therapy and its applications in disease model	-	40	40	2
X	3D Bio Printing	-	40	40	2
XI	Clinical research, bioethics and Regulatory affairs	-	40	40	2
XII	Cell and Tissue banking and Cryopreservation	-	40	40	2
XIII	Organoid Formation, Flow Cytometry, FACS		40	40	2
XIV	CRISPR technology & Gene editing		40	40	2
	Total	-	-	-	24

SEMESTER-IV

S. No.	Papers	Theory marks	Internal marks	Total marks	Credits
1	Project work II (Viva Voce + Thesis Defense)	-	-	-	24
	Total		-	-	24

7. List of Electives–Credit for Each Electives–2 (Marks:T-40 and P-30,Tota l70)

i. General Elective

- a. Health care Policy and Regulation
- b. Science, Technology, and Society for sustainable development
- c. Environmental Sciences and Biodiversity

ii. Discipline Specific Electives

- a. Stem Cells and Oncology
- b. Clinical Applications of Stem Cell and Gene Therapy
- c. Stem Cell Banking and Bio preservation for Therapeutic Use
- d. Large-Scale Stem Cell Manufacturing and Quality Control for Clinical Translation
- e. Animal Models for Stem Cell Research

Note:

1. This Course Curriculum can be modified in future in accordance with the latest guidelines and directions issued by the concerned regulatory authorities to align the academic structure, content, and learning outcomes with the national educational standards and industry requirements.
2. Course wise learning outcomes has been annexed (Annexure I), which would vary depending upon the courses offered by the School/Centre/Department.
3. Reading list has been annexed (Annexure II), which would vary depending upon the courses offered by the School/ Centre/Department.
4. Semester-wise Assessment Rubrics has been suggested and annexed (Annexure III), which would vary depending upon the guidelines of the University/ Regularity authority.

Annexure I

Course-wise Learning Outcomes (LOs)

- i. Cell Biology and Advanced Molecular Biology: Understand cellular structures and molecular pathways fundamental to life processes.
- ii. Introduction to Stem Cells and Developmental Biology: Describe types and sources of stem cells, and basic mechanisms in development.
- iii. Techniques in Cell and Molecular Biology: Demonstrate laboratory techniques including PCR, Western blotting, and microscopy
- iv. Biostatistics and Bioinformatics: Analyze biological data using statistical tools and bioinformatics software.
- v. Scientific Communication and Research Ethics: Present scientific findings clearly and adhere to ethical research practices.
- vi. Seminar & Journal Club: Critically review and discuss recent scientific literature.
- vii. Human Anatomy and Physiology: Identify human organ systems and describe physiological functions relevant to regenerative medicine.
- viii. Adult and Induced Pluripotent Stem Cell Biology and Applications: Differentiate between stem cell types and describe clinical applications.
- ix. Tissue Engineering and Biomaterials: Explain scaffold design, biomaterials, and their role in tissue regeneration.
- x. Genetic Engineering and CRISPR Technology: Apply CRISPR and other genome editing tools in cell biology.
- xi. Good Laboratory Practices & Regulatory Affairs: Maintain laboratory safety standards and understand regulatory compliance.
- xii. Lab: Cell Culture, Differentiation & Characterization: Perform in vitro culture, cell differentiation, and characterization.
- xiii. Scientific Writing and Data Interpretation: Synthesize literature and write research proposals.
- xiv. Principles of Developmental Biology: Explain key signaling pathways and morphogenetic events in development.
- xv. Stem Cells in Regenerative Medicine & Disease Models: Evaluate stem cell-based therapies for various diseases.
- xvi. Advanced Immunology & Immunotherapy: Discuss immune responses and their

- manipulation in therapy.
- xvii. Organoids and 3D Culture Systems: Develop and use organoid systems to model organogenesis.
 - xviii. Entrepreneurship in Biotech & Innovation: Understand business models and innovation strategies in biotech.
 - xix. Lab: Organoid Formation, Flow Cytometry, FACS: Conduct experiments with advanced flow-based and 3D culture techniques.
 - xx. Internship /Industry-Academic Research Project: Apply research and industrial knowledge to real-world settings.
 - xxi. Embryonic Stem Cell Biology and Applications: Compare embryonic stem cells with adult and iPSC counterparts.
 - xxii. Project Work: Execute a full research project from hypothesis to conclusion.
 - xxiii. Viva Voce+ Thesis Defense: Defend research findings and methodology.

Annexure II

Reading List

i. Core Text books

- a. Stem Cells: An Insider's Guide–Paul Knoepfler
- b. Essential Cell Biology–Alberts et al.
- c. Molecular Biology of the Cell–Alberts, Johnson, Lewis
- d. Principles of Tissue Engineering–Lanza, Langer, & Vacanti
- e. Biostatistics: A Foundation for Analysis in the Health Sciences–Wayne W. Daniel

ii. Supplementary Readings & Journals

- a. Nature Biotechnology
- b. Stem Cells and Development
- c. The New England Journal of Medicine (Regenerative Medicine section)
- d. Trends in Biotechnology
- e. Advanced Drug Delivery Reviews

iii. Online Resources

- a. MOOCs (NPTEL/SWAYAM/edX/Coursera): Stem Cell Biology & Regenerative Medicine
- b. NCBI, EMBL, KEGG–Bioinformatics Tools
- c. ClinicalTrials.gov–Global stem cell clinical trials

Annexure III

Suggested Semester-wise Assessment Rubrics

Semester I

	Component	Weightage (%)	EvaluationCriteria
a.	TheoryExams (4 core papers)	30%	Conceptual clarity, analytical thinking, subject integration
b.	InternalAssessments (tutorials+ assignments)	15%	Regularity, accuracy, depthofunderstanding, relevance
c.	LaboratoryPracticals(Immunology, Biochemistry, Molecular Biology)	15%	Technique mastery, labrecordkeeping, accuracy, safety adherence
d.	IndustryVisit Report	5%	Observation detail, reflection, relevance to coursework
e.	Scientific Communication &Research Ethics	10%	Writing clarity, ethical comprehension, referencing and structure
f.	SeminarandJournalClub	10%	Literatureinterpretation, discussion, presentation skills
g.	ElectiveSubject (General)	5%	Topic-specific understanding, project work (if applicable)
h.	Attendance&Participation	10%	Engagement in lab andclass discussions, punctuality

Semester II

	Component	Weightage (%)	EvaluationCriteria
a.	TheoryExams(StemCell, CRISPR, Applications)	30%	Advanced understanding, integrationof concepts, evidence-based thinking
b.	LabPracticals (CellCulture, GLP, etc.)	20%	Sterile technique, documentation, cell handling and imaging proficiency
c.	MinorProjectI (Literature Review + Proposal)	15%	Critical review, originality, feasibility, hypothesis clarity
d.	SkillDevelopmentModule	5%	Applied knowledge, hands-on technique testing
e.	Elective Subject (Discipline Specific)	5%	Applicationinregenerativebiology, concept innovation
f.	Seminar+Internal Review	15%	Presentation coherence, scientific rigor, feedback integration
g.	Attendance&Participation	10%	As above

Semester III

	Component	Weightage (%)	EvaluationCriteria
a.	Minor Research Project (experimental)	25%	Researchmethodology,dataquality, troubleshooting, ethical compliance
b.	Seminars(I&II)	20%	Regularprogresspresentation,peer feedback responsiveness
c.	Internship / Industry-Academic Project	25%	Mentor evaluation, fieldexposure, problem-solving, adaptability
d.	Practical Modules (e.g., Organoid Formation, CRISPR-9, Clinical modules)	20%	Technicalexecution,reproducibility, critical analysis of results
e.	Attendance&Participation	10%	Professionalism,initiative

Semester IV

	Component	Weightage (%)	EvaluationCriteria
a.	MajorThesis (ExperimentalResearch)	60%	Novelty, rigor, dataanalysis, literature contextualization, ethical adherence
b.	VivaVoce +Defense	20%	Oral articulation, defensestrength, interdisciplinary understanding
c.	ContinuousEvaluation& Mentoring Logs	10%	Regularityofsubmission,feedbackutilization
d.	Publication/IP/Review Writing (if applicable)	10%	Scholarlyoutput,clarity,novelty,formalaccuracy

Research & Innovation

Our school hosts cutting-edge laboratories equipped with updated equipments and collaborate with national and international institutions in stem cell and regenerative medicine.

Visit to Jamia Milia Islamia New Delhi on 03.06.2025

Dr. H. N. Diwaker, Consultant, School of Stem Cell Technology, Aryabhatta Knowledge University with Prof. Dr. Tanuja, Professor, Biological Science, Jamia Milia Islamia, New Delhi

Visit to D. Y. Patil International University, Pune on 10.07.2025

Dr. H. N. Diwaker, Consultant, School of Stem Cell Technology, Aryabhatta Knowledge University with Prof. Dr. Surabhi Sonam, Associate Professor, Bioscience and Bioengineering, D Y Patil International University, Pune

Career Opportunities

Graduates can pursue careers as:

- Stem Cell Researchers
- Biomedical Scientists
- Regenerative Medicine Specialists
- Biotech Industry Experts
- Clinical Trial Coordinators
- Academic Faculty / Postdoctoral Fellows

Why Choose Us?

- Highly experienced Guest faculty
- Interdisciplinary curriculum
- Course curriculum as per NEP 2020 guidelines.
- State-of-the-art infrastructure
- Hands-on research opportunities

- Placement assistance & career mentoring
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Admissions Information

- **Application Opens:**
- **Entrance Exam:**
- **Contact:**
 - Email: akustemcell@gmail.com
 - Phone: 9097047256
 - Website: www.akubihar.ac.in

