



# WOMEN UNIVERSITY SWABI

KHYBER PAKHTUNKHWA-PAKISTAN

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## Department of Health Informatics

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### Vice Chancellor's Message

Welcome to Women University Swabi, a university that is committed to empower women through higher education and provide them opportunities to work in a wide array of settings such as education, business, industry, health, and social services sectors.

To me, the job of a university is not only to produce degree holders and commercially marketable human resources, but I believe it is more than that. Universities are required to produce loyal, honest and enlightened human beings who can empathetically understand the needs of society, reverentially work in both national and international community, and take better care of the future generations.

**PROF. DR. SHAHANA UROOJ KAZMI**

**WOMEN UNIVERSITY SWABI**

KHYBER PAKHTUNKHWA-PAKISTAN





## VISION

The vision of Department of Health Informatics is to be recognized both nationally and internationally as a quality producer of health informatics professionals equipped with the attitudes and principles that encourage lifelong learning and ethical behavior in a rapidly evolving profession to prove as well balanced human beings with strong sense of values.

## MISSION

The mission of the Department of Health Informatics is to discover, educate and broadly disseminate fundamental knowledge needed to ensure accessibility, accuracy, availability, integrity, and security of patient health information.

## ABOUT US

Health Informatics is highly interdisciplinary, rapidly emerging discipline that connects people, technology, and data to sustain, restore, and improve the quality of life. It bridges between Information Technology and Health with its practical applications using different technologies and tools. Today, health informatics is revolutionizing the health care industry, as the majority of medical institutions become compliant with the Health Information Technology for Economic and Clinical Health Act (HITECH). It is well expected that, health informatics and technology will shape the future.

The department of Health Informatics is therefore committed to excellence in research and education, and to prepare students for success in an increasingly data-centric world. The students will be enable and constantly motivated for active participation in learning and exercising cutting edge technology.

## Future Goals

The BS degree in Health Informatics shall enable the students to pursue higher education in the following fields:

- MS in Health Informatics
- MS in Public Health Informatics
- MS in Biomedical Research
- MS in Clinical Research
- PhD in Health Informatics / Public Health Informatics /Clinical Research

### At the end of the BS program the student should be able to:

1. Play a lead-role in strengthening Public Health and Public Health Information Management.
2. Plan and coordinate with all relevant stakeholders and function as the main focal point for activities related to Health Informatics.
3. Provide expert guidance to design, develop, implement, monitor and evaluate Health related ICT Projects.
4. Assess and evaluate health information processes of the organizations and internal as well as external information needs on an on-going basis, and
5. Provide leadership for education and training of health care professionals in Health Informatics.
6. Serve as a trainer in Public Informatics.



## Why to choose Health Informatics?

Health informatics is a solid career choice if:

- ✓ You are looking to help patients without providing direct care and are interested in data and IT.
- ✓ You're interested in being a nurse who also impacts the technological infrastructure of healthcare.
- ✓ You are curious about IT systems and research but want to join a growing, impactful industry.

Health informatics is a booming industry that will provide you with many opportunities and a gratifying career that impacts all aspects of healthcare, ranging from systems to patient lives. To succeed in this industry, you'll need strong interpersonal, analytical, and research skills, programming and technology knowledge, and be a problem-solver who's intellectually curious about improving systems.



The job opportunities available in health informatics range from

- Academic/Researcher
- Clinical Data Manager
- Chief Medical Officer
- Clinical Information Manager
- Consultant
- Health Care Webmaster
- Information security/Risk/revenue/privacy manager
- Medical director for informatics
- Medical director for information system
- pharmacy systems analyst

As a health informatics professional, you will organize the evidence used in evidence based medicine. You will help support patient care, teaching, research, quality improvement and legal inquiries.

## Job Opportunities

- As a relatively young but growing field, there are many career opportunities within health informatics. Among the most common are:
- **Health Informatics Specialist:** These professionals work with patient records and data in a healthcare setting such as hospitals. They can perform a range of duties, including analytical, project management, consulting, or support capacities.
- **Clinical Informatics Analyst:** A clinical informatics specialist is typically responsible for organizing and maintaining patient data and ensuring it's available to health care providers, staff, and patients.
- **Electronic Medical Records Keeper:** Electronics medical records keepers input and secure pertinent patient data such as symptoms, conditions, diagnoses, and treatments into a healthcare facility's EHR program or various databases used by insurance companies and other organizations that handle patient information.
- **Nursing Informatics Specialist:** Nurse informatics specialists are qualified nurses who oversee and educate the nursing staff on record-keeping protocol, data accuracy, and healthcare information systems security.
- **Pharmacy or Nutrition Informaticist:** These professionals play an essential role in pharmacy settings by monitoring patient records for potential drug interactions and general safety.
- **Chief Medical Information Officer:** Chief medical information officers are responsible for ensuring information and architecture of IT systems are efficient and support high-quality patient care.

Of course, there are many other roles within the industry. For example, health informatics consultants will often work in a self-employed capacity for various clients. In contrast, EHR implementation managers and health IT project managers will often work on a contract or project basis.



# BS (4 Years) Health Informatics

(4 Years)  
8 Semesters

Total Credit Hours: 126

## Eligibility Criteria:

FSc Pre-Medical/Pre-Engineering with at least 45% marks

## Scheme of Studies BS Health Informatics

Course Code	Course Title	Credit Hours
<b>SEMESTER 1</b>		
BSHI-311	Introduction to Healthcare Informatics	3(3+0)
ISL-301	Islamic Studies	3(3+0)
ENG-301	English I: Functional English	3(3+0)
CS-301	Introduction to Computer	3(2+1)
NS-301	Cell Biology	3(3+0)
BSHI-312	Fundamentals of Mathematics	3(3+0)
<b>SEMESTER 2</b>		
BSHI-311	Introduction to Healthcare Informatics	3(3+0)
ISL-301	Islamic Studies	3(3+0)
ENG-301	English I: Functional English	3(3+0)
CS-301	Introduction to Computer	3(2+1)
NS-301	Cell Biology	3(3+0)
BSHI-312	Fundamentals of Mathematics	3(3+0)



Course Code	Course Title	Credit Hours
<b>SEMESTER 3</b>		
BSHI-411	Health Information Security	3(2+1)
BSHI-412	Fundamental of Health Information Management System	3(3+0)
ENG-303	English III: Academic Reading and Writing	3(3+0)
SS-301	Human Resource Management in Health Care	3(3+0)
MATH-401	Linear Algebra & Differential Equations	3(3+0)
<b>SEMESTER 4</b>		
BSHI-421	Introduction to Clinical Informatics	3 (2+1)
BSHI-422	Introduction to Digital Health	3 (3+0)
BSHI-423	Principles of Leadership in HealthCare	3 (3+0)
BSHI-424	Fundamentals of programming	3 (2+1)
BSHI-425	Fundamentals of Bioinformatics	3 (2+1)
MATH-402	Computational Mathematics	3 (2+1)
<b>SEMESTER 5</b>		
BSHI-511	Fundamental of e-Health	3 (2+1)
BSHI-512	Health Data-Vocabulary and Standards	3 (3+0)
BSHI-513	Health Data Analytics	3 (2+1)
BSHI-514	Health Policy and Administration	3 (3+0)
BSHI-515	Introduction to Database	3 (2+1)

Course Code	Course Title	Credit Hours
<b>SEMESTER 6</b>		
BSHI-521	Public Health Informatics	3 (3+0)
BSHI-522	HIMS Systems Analysis, Implementation and Maintenance	3 (2+1)
BSHI-523	Healthcare Project Management	3 (3+0)
BSHI-524	Machine Learning in Healthcare	3 (2+1)
BSHI-525	Medical Imaging in HI	3 (2+1)
<b>SEMESTER 7</b>		
BSHI-611	Ethical Issues in Health Informatics	3(3+0)
BSHI-612	Quality Assurance in Health Care	3(3+0)
BSHI-613	Healthcare Decision Making and Support Systems	3(3+0)
BSHI-614	Behavioral Sciences in HI	3(3+0)
BSHI-615	Entrepreneurship & Business Development	3(3+0)
<b>SEMESTER 8</b>		
BSHI-622	Software Engineering in HI	3 (2+1)
BSHI-623	Basic Epidemiology in HI	3(2+1)
BSHI-624	Special Topics in Health Informatics	3 (3+0)
BSHI-625	Project **	6 (0+6)



## Faculty Member of Department of Health Informatics

**Dr. Raisa Bano**  
HoD/  
Assistant Professor



She did her PhD in Bioinformatics from Capital University of Science and Technology, Islamabad. She is specialized in Cancer Informatics and her PhD thesis was focused on Bioinformatics and experimental analysis of genetic and non-genetic basis of breast cancer in Pakistani population. She has experience of working in top-notch organization in both wet lab and dry labs including Bioinformatics core, department of oncology at the University of Oxford, UK and Institute of Biomedical and Genetic Engineering, Islamabad, Pakistan.

**Dr. Shagufta Shafique**  
Assistant Professor



She did her Ph.D. in Bioinformatics from the National Center for Bioinformatics, Quaid-i-Azam University, Islamabad. She also visited Clive QIMR Berghofer Cancer Research Centre, Australia as a researcher scholar and gained expertise in wide range of techniques of molecular and cellular biology. Her research experience and skills include Bioinformatics and in vitro approaches. Her research work focused on the evaluation of structure-based functional diversity of E3-ligases in parallel to their carcinogenic potential characterization through small molecule inhibitors.

She did her PhD in Biotechnology from Quaid-i-Azam University, Islamabad, Pakistan. Her PhD research work focused on gene identification through cDNA library construction and screening of BAC libraries as well as genetic and physical mapping. She has got expertise in BAC library screening for gene identification from PGML, Lab, University of Georgia, USA. She has multi dimensional experience of teaching, research and administration.



**Dr. Nabeela Tabbusam**  
Assistant Professor

## Health Informatics Seminar Summary

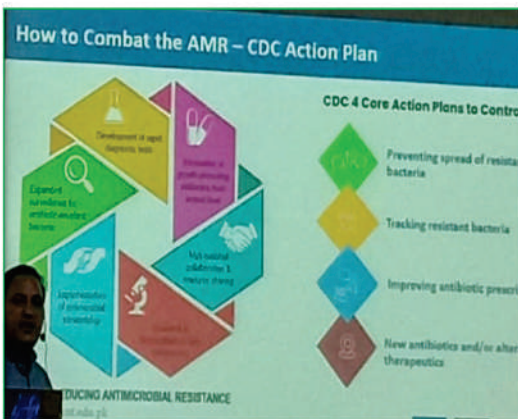
- “Transforming Challenges into opportunities”
- “Current prevailing diseases of Pakistan”
- “Study Visit to HSA and NIH, Islamabad”
- “5 days workshop on Advances in Bioinformatics”
- “Training/internship for the Health Informatics students”

### Transforming Challenges into Opportunities





# Summer School on Biomolecular Sciences: “Advances in Bioinformatics”





# Pictorial Display





**Academic Calender  
(Session 2021-2022)  
Women University, Swabi**

Spring 2022	Study period	28 <sup>th</sup> March,2022- 29 July ,2022
	Mid Term Examination (After 8 Weeks)	23 <sup>th</sup> May 2022-27 <sup>th</sup> May,2022
	Final Term Examination (After 8 weeks)	25 <sup>th</sup> July,2022-29 <sup>nd</sup> July,2022
Fall 2022	Study period	1 <sup>st</sup> September to 13 January ,2023
	Mid Term Examination (After 8 weeks)	27 <sup>th</sup> , October 2022 – 2 <sup>nd</sup> November,2022
	Final Term Examination (After 8 weeks)	04 <sup>th</sup> January,2022-13th January ,2023



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