Mathematics

Learning outcomes and Objectives of Bachelor's degree programme in/with Mathematics

The overall aims of B.A./B.Sc. in/with Mathematics are to

- create deep interest in learning Mathematics.
- develop broad and balanced knowledge and understanding of definitions, concepts, principles and theorems.
- familiarize the students with suitable tools of mathematical analysisto handle issues and problems in mathematics and related sciences.
- enhance the ability of the learners to apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problems in mathematics.
- provide students/learners sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics.
- encourage the students to develop a range of generic skills helpful in employment, internships and social activities.

Graduate Attributes in Mathematics

The graduate attributes in mathematics are the summation of the expected course learning outcomes as listed below:

1. Disciplinary knowledge: Capability of demonstrating comprehensive knowledge of mathematics and understanding of one or more disciplines which form a part of an undergraduate programme of study.

2. Communication skills:
   - Ability to communicate various concepts of mathematics effectively using examples and their geometrical visualizations.
   - Ability to use mathematics as a precise language of communication in other branches of human knowledge.
   - Ability to show the importance of mathematics as precursor to various scientific developments since the beginning of the civilization.
   - Ability to communicate long standing unsolved problems in mathematics.
   - Ability to explain the development of mathematics in the civilization context and its role as queen of all sciences.

3. Critical thinking and and analytical reasoning:
   - Ability to employ critical thinking in understanding the concepts in every area of mathematics.
   - Ability to analyze the results and apply them in various problems appearing in different branches of mathematics.

Physics

Objectives and learning outcomes

- **Objectives:** To solve Physics problems using Mathematical techniques.
- Demonstrate conceptual understanding of fundamental physics principles.
- Physics students gain practical experience through hands-on projects in classes.
- **Outcomes:** Students enthusiastically engage in learning what is known about our world and develop a passion for the subject.
- Demonstrate a understanding of the core theories and principles of physics, which include mechanics, electromagnetism, thermodynamics, and quantum mechanics etc.
- Communicate scientific information in oral, written, and graphical formats.

Faculty

1. Mr. Anuj Sharma
2. Mr. Hem Chand (Lecture Basis)

Chemistry

B.Sc. 5th Sem.	CHEM 204 (SEC)	Fuel chemistry & chemistry of cosmetics & perfumes
	CHEM DSE 501	Polymer Chemistry
	CHEM SEC 503	Chemical Tech. & Society and Bus. Skills for Chemistry

Objectives and Learning Outcomes:

The course structure of UG classes is formulated and amended by H.P. University time to time and we being the affiliated institution follow the same. Learning outcome is evaluated through mid-term tests, regular class assignments and final examinations conducted by the University. Course wise detail of the objective and learning outcome is appended below:

1. **Course Code: CHEM 101 [B. Sc.- 1st Year]**

   Course Title: Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons

   Learning objectives:

   - To have the understanding of the core concepts of organic chemistry i.e. Resonance, Hyper conjugation, Inductive effect, *etc.* and their applications.
   - To have an understanding of the stereo chemical aspects of organic compounds.
   - To understand optical isomerism, geometric isomerism and conformational isomerism.
   - To attain basic knowledge of the structural and functional properties of the hydrocarbons like alkanes, alkenes and alkynes.

   Learning outcomes: After successful completion of this course, the students will be able to:

   - Recognize and draw constitutional isomers, stereoisomers, including enantiomers and diasteromers, racemic mixture and meso-compounds.
   - Know the fundamental concepts of organic chemistry and predict mechanism of various types of organic reactions.
   - Understand the nomenclature, synthesis, isomerism and physical properties of hydrocarbons.

2. **Course Code: CHEM 102 [B. Sc.- 1st Year]**

   Course Title: States of Matter, Chemical Kinetics & Functional Organic Chemistry

   Learning objectives:

   - To study reaction rates and general form of the rate law.
   - To determine integrated rate expressions for zero, first, second and third order reactions.
   - To study the various factors which affect the rate of a chemical reaction.
   - Acquire basic knowledge of electrode conduction.
   - Determine the solubility of sparingly soluble salts.
   - Explain various methods for determining transport number.

   Learning outcomes: Upon successful completion of this course, the students will be able to:

   - State the basic principles of electrochemistry
   - Mention and explain various methods for determining transport number.
   - Understand rate of reaction and factors affecting it.

- Derive integrated rate expressions for zero order, first order, second order and third order reactions.
- Understand theories of reaction kinetics and differentiate them.

3. **Course Code: CHEM 201 [B. Sc.- 2nd Year]**
Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry & Organic Chemistry
Learning objectives:
   - To learn thermodynamic aspects of ideal and non-ideal solutions.
   - To have the knowledge of azeotropes, electrolytes and electrolytic conduction.
   - General preparation and characteristic properties of carboxylic acids, ammines and carbohydrates.

Learning outcomes: Upon successful completion of this course, the students will be able to:
   - State basic principles of electrochemistry.
   - Explain electrolytic conduction for the solutions consisting weak and strong electrolytes.
   - Explain characteristic chemical reactions of carboxylic acids, ammines and carbohydrates.

4. **Course Code: CHEM 202 [B. Sc.- 2nd Year]**
Course Title: Chemistry of Main Group Elements, Chemical Energetics and Equilibria
Learning objectives:
   - To understand the general trends and properties of the main group elements, hydrogen and noble gases.
   - To have understanding of the basic laws of thermodynamics, chemical equilibrium and the concepts of pH scale.

Learning outcomes: After successful completion of the course, the students will be able to:
   - Explain general trends and properties of main group elements, hydrogen and noble gases.
   - Explain basic laws of thermodynamics, chemical equilibrium and concept of pH.

5. **Course Code: CHEM SEC 203 [B. Sc.- 2nd Year]**
Course Title: Basic Analytical Chemistry
Learning objectives:
   - To introduce basic methods and techniques of analytical chemistry.
   - To familiarize the students with the types of common pollutants and general methods of their analysis in reference to the soil, water, food and cosmetics.
   - To learn the basic principles of chromatography with special reference to paper and thin layer chromatography.

Learning outcomes: After successful completion of the course, the students will be able to:
   - Explain basic principles of analytical chemistry.
   - Recognize common pollutant in soil, water, food and cosmetics and general methods of their determination.

- Explain paper and thin layer chromatographic techniques.

6. **Course Code: CHEM SEC 204 [B. Sc.- 2nd Year]**

Course Title: Fuel Chemistry & Chemistry of Cosmetics & Perfumes

Learning objectives:

- To differentiate between the renewable and non-renewable energy sources.
- To know the refining and extraction of different petroleum products, non petroleum fuels.
- To have the knowledge of clean fuels, lubricants, preparation of cosmetics.
- Use of essential oils in cosmetics and their importance.

Learning outcomes: After successful completion of the course, the students will be able to:

- Differentiate between the renewable and non-renewable energy sources.
- Explain refining and extraction of different petroleum products, the concept of clean fuels and lubricants.
- Explain preparation of cosmetics and importance of essential oils in their preparation.

7. **Course Code: CHEM DSE 501 [B. Sc.- 5th Semester]**

Course Title: Polymer Chemistry

Learning objectives:

- To know the history and detailed classification of the polymers.
- To study the kinetics of polymerization and the concepts of crystallization and crystallinity.
- To study the different methods of determination of molecular weight of the polymers.
- To have brief knowledge of the preparation and properties of the industrially important polymers.

Learning outcomes: After successful completion of the course, the students will be able to:

- Tell different criteria used for classifying polymers.
- Explain the kinetics of polymerization reactions.
- Explain the concepts of crystallization and crystallinity, molecular weight, solubility, etc., in reference to the polymers.
- Explain preparation and properties of the industrially important polymers.

8. **Course Code: CHEM SEC 503 [B. Sc.- 5th Semester]**

Course Title: Chemical Technology & Society and Business Skills for Chemistry

Learning objectives:

- To know the basic principles and equipment needed in chemical technology.
- To explore the societal and technological issues from a chemical perspective.
- To have the basic knowledge of genetic engineering and the manufacturing of the drugs.
- To have the knowledge of the basic business concepts and the role of chemistry in industry.
- To have the idea of intellectual properties and patents.

Learning outcomes: After successful completion of the course, the students will be able to:

Workshop attended during last Three Year.

Public Administration

Sr No.	YEAR	Seminar /Workshop Title	Duration /Date	Paper Presentation
1	May2017	Water Culture of India	2 days	Yes
2	Nov.2018	Inter Disciplinary Edu. Issue & Challenges of 24th century	1 day	Yes
3	Dec.2018	Transforming our world opportunities & challenges	3 days	Yes
4	June.2019	Resurging India	1 days	Yes
5	Aug.2019	Multi disciplinary International conference o natural resource management	3days	Yes

Objective and learning out comes:

- Achieve effectiveness and efficiency in an administration.
- Starting from Govt. plan, strategies, policies and execution of those policies.
- Student will be familiar with the mechanisms operating in the major administrative institutions.
- Student will be familiar with the social forces, the creation of public policies.
- Understandings the Indian administrative set up.
- Provide understanding of and sight in to the nature of administrative process and Bureaucratic behavior and decision making.
- Lead and participate in public governances and public process.
- Analyze, think critically, solve problem and help other.
- Students develop the leadership capabilities.
- Analytical and critical thinking skill to inform public community problem solving and decision making process.

Musi

संगीत में भविष्य की संभावनाये

संगीत में विद्यार्थी के लिए भविष्य निर्माण की सम्भावनाओ के क्षेत्र के बारे में भी बताया जाता है। जिनमे बहुत से ऐसे कई क्षेत्र है जिसे चुन कर विद्यार्थी अपनी आजीविका अर्जित कर सकता है :-

(क) अध्यापन का क्षेत्र

(ख) संगीत चिकित्सा का क्षेत्र

(ग) ध्वनि अभियान्त्रिकी का क्षेत्र

(घ) चल-चित्र के निर्माण में संगीतकार की भूमिका

(ड) पाशर्व-गायन के क्षेत्र में

(च) रिकार्डिंग अभियान्त्रिकी का क्षेत्र

(छ) संगीत निर्देशन का क्षेत्र

(ज) विज्ञापन के क्षेत्र में

इसके अतिरिक्त बहुत से ऐसे क्षेत्र है ,जिनमे जाकर संगीत का विद्यार्थी अपने भविष्य का निर्माण कर सकता है।

इसके अतिरिक्त समय –समय पर विभाग में संगीत गोष्ठी का आयोजन भी किया जाता है तथा महाविद्यालय में होने वाले कार्यक्रमों में संगीत के विद्यार्थियों को मंच प्रदान किया जाता है , विधित है कि महाविद्यालय का ऐसा कोई भी कार्यक्रम नहीं होता जिसमे संगीत विभाग अपनी भूमिका न निभाता हो , और इन्ही कार्यक्रमों के माध्यम से विद्यर्थियो को मंच प्रदान किया जाता है।

संगीत विभाग हर वर्ष विश्वविद्यालय द्वारा आयोजित संगीत युवा महोत्सवों में भाग लेता है। सत्र 2018-19 में युवा समारोह के समूह – एक , जो की राजकीय महाविद्यालय धर्मशाला में आयोजित की गई जिसमे संगीत विभाग के विद्यार्थियों ने निम्नलिखित प्रदर्शन किया :--

- भरतीय समूह गान -------द्वितीय स्थान
- पाश्चात्य समूह गान -------द्वितीय स्थान
- ग़जल गायन ----------तृतीय स्थान ।

इसके अतिरिक्त संगीत विभाग व महाविध्यालय के विद्यार्थियों ने हिमाचल प्रदेश विश्वविद्यालय युवा –महोत्सव-तीन , जो की राजकीय महा विद्यालय नेरवा में आयोजित की गई ,जिसमे विद्यार्थियों ने उत्कृष्ट प्रदर्शन किया।

DEPARTMENT OF ECONOMICS

GOVT. DEGREE COLLEGE ARKI, DISTT. SOLAN, (H.P.) 173208

DEPARTMENTAL PROFILE/DETAILS:

1.	Post Status in Department: (Established in 1994)		
Sr. No.	No. of Post Sanctioned	No. of Post Filled	No. of Post Required
1.	01	01	NIL

2.	Enrollment of Students: session 2019-20						
Sr. No.	Class	DSC (Minor)			SEC (Major)		
		Male	Female	Total	Male	Female	Total
1.	B.A.-Vth Sem.	3	3	6	2	5	7
2.	B.A.-II Year	3	6	9	4	7	11
3.	B.A.-I Year	3	4	7	5	5	10

3.	Course/Syllabus recommended by UGC & Approved by HPU Shimla-5:	
1.	B.A.-I Year	Attached Separate Copy of Course/ Syllabus
2.	B.A.-II Year	
3.	B.A.-Vth Semester	

4.	Objectives and Learning Outcomes:	The main objective is to teach students sincerely and clear their basic precepts and fundamental problems, and also to make them well capable to face the professional field of life and achieve a distinct, definite target in life may it be in any speciality.

5.	Teaching Methodology Preference in Order of Priority:
[A]	Lecture Method
[B]	Question/ Answer
[C]	Discussions/ Seminar
[D]	Class Test
[E]	Assignment

6.	Result: Session 2018-19				
Sr. No.	Class	Academic Session	Total no. of students Appeared	Passed	Percentage
I	B.A.-VIth Sem.	2018-19	18	17	94.45%
II	B.A.-I Year	2018-19	20	17	85%

Geograph

Aims and objectives in Bachelor degree with Geography.

- To acquaint the students with the living condition of men in different parts of the globe.
- To enable the students to acquire a knowledge of natural resource and sustainable development.
- To develop in students an understanding of how environment and climate factors have influenced our life.
- To developed practical knowledge with General cartography and Thematic cartography.
- Now days in subject Geographynew techniques have been used. GST (Geospatial Techniques like GIS, GPS and Remote sensing)is used for the betterment, planning and development of towns and urban'sspatial integration and develop.The knowledge of GST can be disseminating through various software like Arc GIS, Erdas but in department have open source software like QGIS and SAGA for the betterment of students.

SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats)

Department of Geography

Histor

3.	**Course/Syllabus recommended by UGC & Approved by HPU Shimla-5: Separately Attached.**				
1.	**BA I**				
2.	**BA II**				
3.	**BA III**				

4.	**Objectives and Learning Outcomes:**	**Our main objective is to teach students earnestly and clearing their basic precepts and fundamental problems, and also to make them well equipped to face the professional domain of life and achieve a definite, defined goal in life may it be in any sphere.**

5.	**Teaching Methodology Give Your Preference in Order of Priority:**
[A]	**Lecture Method**
[B]	**Discussions/ Seminar**
[C]	**Class Test**
[D]	**Assignment**
[E]	**Question/ Answer**

Objectives of Library

- To develop rich collection of reading material useful for library users (students, Teachers and other staff members).
- To provide full information support to the teaching- learning process in the College.
- To provide various library services and facilities to the readers.
- To support research activities of research scholars (Teachers)
- To support institution for developing quality of learning and teaching.

Political Science

Learning Outcomes

Department of Political Science of Govt. College Arki trains the Students to understand basic concepts of Political Science such as liberty, Equality, Justice, Rights, State, Literalism, Marxism, Democracy etc. The specific outcomes to be achieved are as follows :

- An ability to apply knowledge of Political Science with other social sciences.
- An ability to identify and solves political problems at state, national and international level.
- The broad education necessary to understand the impact of politics in a global, economic, environmental and social context.
- Analysing the Indian constitutional provisions, major legislations and reforms.
- Building over all consciousness regarding Indian foreign relations with her neighbors and great powers, international relations and Indian and western political thinkers.

After successful completion of BA programme, the students would have the following attributes :

- A graduate will become productive citizens, dedicating to serve their communities, their nation and the world.
- A graduate will become successful social worker, politician, citizen and writer.
- The graduate will be able to perform Job in different fields such as education, politics, policy making, election, international organisations, civil services, business, self employed etc. where qualities of analytical mind, logical thinking, clarity of thoughts, precision are required.