**5. Best Practices, Innovation and Institution Distinctiveness**

**5.1 Best Practices Description & Outcome**

**5.1.1 Teaching services at school and sensitization slum hut children**

Our college NSS unit through its outreach activities to society for the better communication between society and education institute had taken initiative to reach slum hut children and their parents. In the reference same, our college NSS volunteers interacted with people from poor segment of society living in slum hut of nearby area and sensitize them to enroll their students in nearby primary School. Our students also imparting teaching service during the session for 4 hour per week from march 2024 onwards and in future we further looking to increase these as per the needs of Govt. Primary School Palyar. Our college NSS has adopted portion for plantation and beautification in the campus of Govt Primary School Palyar

**5.1.2** **Sunni college’s 62 students visited Old Age Home Basantpur**

Our college 50 NSS unit volunteers and Help Age Society 12 members visited the old age home in Basantpur. Students were accompanied by NSS Programme officer and Help Age Society Convener. Old Age Home Basantpur was celebrating international old person day in which college students performed some activities for residents of old age home and also made very emotional interaction with all residents staying in the old age home. Students listened life stories of old age resident and learned from their experiences.

**5.2 Special Initiatives**

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| **Special Initiatives** | **Response** |
| **5.2.1 Use of Solar Energy**  Solar for educational institutes is a great idea due to the fact that it helps in the reduction of costs associated with providing electricity to a college. Moreover, solar power generates 100% clean and renewable energy. Besides, the solar systems can work in colleges even on cloudy days and in the evenings, making the system highly reliable. Power your institution with solar for a better future and save energy. Our college has also installed solar panel on dated 10/10/2018 with capacity of 25kwatt. Analysing college electricity bills at an average in summer the reduction of approximately 10000- 11000 rupees per month and in winter 7000-8000 rupees per month we recorded by the use of renewable energy source. College properly maintains solar system with regular cleaning of solar Pannel at regular interval of time. |  |
| **5.2.2 Solid waste Management**  Institute encourages environment friendly practices as follow  **Solid waste management:**   * To reduce waste at institute, students and staff are educated on proper waste management practices through lectures, advertisement on notice boards, displaying slogan boards in the campus. * Waste is collected on a daily basis from various sources and is separated as **dry and wet waste**. * Color coded dustbins are used for different types of wastes. Green for wet and blue for solid waste. * Daily garbage is collected by garbage vehicle of Nagar panchayat Sunni for further processing. Waste material like plastic, papers etc. are collected and sold out to scrap vendor from time to time. * Efforts have taken to produce compost manure from the canteen solid waste and waste from other sources and efficiently run by the students. Manure is used for the purpose of herbal garden as well or for planted tree. * **Liquid waste management:** * The waste water from distillation plant of chemistry lab were stored and used for watering of flower pots. * **E-waste management** * The E-waste collected is stored in store room and disposed every year accordingly. * The buyback system is followed for pharmacology rotating drums beyond repairable conditions. Empty toners, cartridges, outdated computers and electronic items are sold as scrap to ensure their safe recycling. * Old monitors and CPUs are repaired by our technician and reused. |  |
| **5.2.3 Rainwater harvesting**  Rainwater harvesting is the simple process or technology used to conserve rainwater by collecting, storing, conveying and purifying of rainwater that runs off from rooftops, parks, roads, open grounds, etc. for later use. Our college also have developed Rainwater harvesting from college building rooftops. We constructed underground tank of dimensions 12x8 feet and to lift up stored water for flush, flower pots watering and cleaning purposes in the college. There is proper system for lifting up of water with installation of motor (toolu pamp).  Our rainwater harvesting system benefits institute with:   * Less cost. * Helps in reducing the water bill. * Decreases the demand for water. * Promotes both water and energy conservation. * Does not require a filtration system for landscape irrigation. * This technology is relatively simple, easy to install and operate. * It reduces soil erosion, stormwater runoff, flooding, and pollution of surface water with fertilizers, pesticides, metals and other sediments. * It is an excellent source of water for landscape irrigation with no chemicals, dissolved salts and free from all minerals. |  |
| **5.2.4 Plastic Free Campus**  A.B.V. GDC Sunni is a Plastic Free Campus. We aim to measurably reduce plastic waste and pollution in our campus and the world around us. To achieve this, we have undertaken following steps:   * a) our has banned use of single-use plastics in canteens, all department in the college premises. * b) In regular intervals, we carry out awareness drives and sensitisation workshops on the harmful impacts of single-use plastics. * c) Encourage all students to avoid bringing non-bio-degradable plastic items to the college. * d) We encourage students to sensitize their respective households about the harmful effects of plastics and make their households also 'plastic-free'. * e) We have installed necessary alternative facilities like water units to avoid the use of plastic water bottles, and encourage the use of alternative solutions like cloth bags, paper bags, etc, instead of plastic bottles, bags, cover, and other goods on campus. * Daily plastic and garbage is collected by garbage vehicle of Nagar panchayat Sunni for further processing.   Apart from these initiatives we have also organized 5 plastic collection campaigns and awareness rally to avoid single use plastic in society plastic on dated /09/2024 in |  |
| **5.2.5 Blood Donation Camps**  During session 2023-24 our college did not conduct any blood donation camp. |  |
| **5.2.6 Adoption of Village**  Adoption of a village and area is a very meaningful programme in NSS. It is far better to concentrate attention on one village and take up the task for development perspective, than to fritter away energy in many locations involving too many activities which may not be completed at all or where the follow up action may not be possible. NSS unit of college has adopted village Gharyana, slums and Govt Primary School Palyar of Gharyana panchayat.  Our NSS volunteers work with residents of village, slums, school administration to complete 120 hours of regular activities during an academic year. Our college NSS unit performed various activities and awareness campaign in the adopted village after regular interval and tries to address maximum issues of local community |  |

* 1. **Social Impact of Extension activities**

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| **Social Impact of Extension activities** | **Documents** |
| **Community Feedback**  The NSS Programme Officers plans activities in the adopted village or slum in such a way that the leisure time of the NSS volunteers utilized in the service of adopted village or slum. Week-end visits to the adopted areas provide suitable opportunities to live with the community and know their problems and make an earnest effort to do something for them. Similarly, efforts made to follow-up the work done in the areas earlier. Such sustained efforts will result into friendship between the NSS Unit and the community. These activities are arranged through one day camps and frequent visits under regular Community Feedback.  Other than these community/ mass awareness activities:  **5.3.1 Awareness rally on HIV/ Aids and world AIDS day celebration at Sunni college**  Awareness rallyto educate people about HIV Aids in the Sunni Bazaar by NSS and Red Ribbon Club was organized on 30th Nov., 2023. About 100 students participated in the campaign along with staff members of science society and other staff members of ABV GDC Sunni. On Dec. 1st 2023 Red Ribbon Club of ABV GDC Sunni in collaboration with Science Society celebrated the world AIDS day. Following activities were conducted in the celebration.  **5.3.2** **Sunni College conducted various voter awareness campaign**  On dated 05/03/2024 NSS unit of College Sunni completed two day (04-05 march, 2024) awareness campaign on the initiative by Government of India and ministry of higher education, department of higher education in collaboration with Election commission of India to conduct the campaign “Mera Pehla Vote Desh Ke Liye” to encourage youth to take voters pledge with objective of engaging and encouraging young generation especially first-time voters to come out and vote, and to convey the importance of voting for the larger good of the nation. The themes of campaign were as: #Chunav Ka Parv, Desh Ka Garv #Mera Pehla Vote Desh Ke Liye #I am a smart voter I vote for sure. On this occasion NSS volunteers carried a really from college ground to Hanuman Mandir through Sunni bazaar. Volunteers also performed activities as voter Guide, Audio-Visual Films/Songs, Voters’ Pledge, slogan writing and declamation at Sunni chauk. During this campaign young voter from local community were pledged by NSS volunteers and made their digital e- certificate of voter pledge. Volunteers also made digital e-certificate for voter pledge of teaching, non- teaching faculty and college students. Campaign ended with video making by NSS volunteers. On dated 18/05/2024 NSS unit organized voter awareness rally from college ground to Hanuman Mandir through Sunni bazaar. College Principal Dr. R.L. Sharma also addressed NSS volunteers all other student of college to cast their vote and be part of this #Chunav Ka Parv, Desh Ka Garv campaign. On dated 27/05/2024 NSS unit organized voter awareness signaturecampaign “WALL OF DEMOCRACY” under #Chunav Ka Parv, Desh Ka Garv” to encourage voters to be part of Lok Sabha Election 2024. This signature awareness campaign was inaugurated with signature of college principal Dr. R. L. Sharma. Dr. Sharma also addressed NSS volunteers all other student of college to cast their vote and be part of this #Chunav Ka Parv, Desh Ka Garv campaign by making their local community of Assembely Constituency -64 Shimla Rural aware about importance of casting their vote.  **5.3.3 Awareness about road safety rules among the community masses**  On 27th February 2024 NSS unit of ABV Govt. College Sunni, along with rovers and rangers club and road safety club of college organized a really on road safety with the purpose of awareness of road safety rules among the community masses. Really was carried from college campus to Sunni chauk through Sunni bazaar. On 1st and 2nd March, 2024 **“Road Safety awareness** campaign**”** organized by road safety club of our college conducted different competition. On this occasion college Principal Dr. R.L. Sharma advised students to follow traffic rules and congratulated wining volunteers.  **5.3.4 Outreach program of science society at different schools**  Under outreach program chemistry department of Atal Bihari Vajpayee Govt. College Sunni, Shimla, (H.P.) conducted admission/pre-vocational education/career counselling of +2 science stream students. On dated 14/02/2024 Science, Commerce and Arts department faculty members of A.B.V. GDC Sunni conducted course/admission counselling for + 2 students of Model S.S.S. Sunni. In second phase we visited SVM Sunni (15/02/2024), GSSS Dargi (16/02/2024), GSSS Khera (17/02/2024). Dr. Man Mohan assistant professor of chemistry in the college visited these schools and during his interaction session he counselled students about career opportunities after +2 and asked to join Sunni college to pursue their graduate course. He also shared course details to these students. Some glimpses of this interaction session are attached herein.  **5.3.5 Green Campus Development**  With the initiative green and clean air campus development during session 2023-24 our college carried out various plantation drives in the college campus. On 20th February, 2024 NSS unit of ABV Govt. Degree College Sunni organized one day **“Flowers and Plants Plantation”** campaign in the college campus with the purpose of clean and beautiful and campus. Today on dated 05/06/2024 NSS units, Eco Club and Rangers and Rovers unit of our college carried trees plantation derive in the campus on the occasion of **world environment day**. Theme of this year environment day was **Land restoration, desertification and drought resilience**. College Principal Dr. R. L. Sharma also planted tree with NSS unit of college and Dr. Sharma in his address to volunteers asked them to conserve environment and carryout at least one tree plantation per year as well as take full care of that plant. Apart from these activities on 11th august 2023 and 20th September 2023 NSS unit also carried tree planation in the campus there were planation. In total during all these activities 47 trees were planted in the college campus with the purpose of green and clean air campus development.  **5.3.6** **Community feedback**  NSS volunteers also recorded feedback of their activities among masses in form of feedback form |  |

**5.4 Innovative & New Ideas adopted**

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| **Innovative & New Ideas adopted** | **Response** |
| To develop scientific temper in students the teachers of chemistry department of our college has taken new initiative to introduce research experiments among their students which are as:  **(1) Exploration of polysaccharides to design hydrogels**  A number of polymeric based devices have been proposed to achieve drug delivery systems for efficient therapy. Among them, hydrogels (copolymers), specially based on the polysaccharides, have attracted considerable attention to act as smart candidates for the controlled release of therapeutic agents to the specific sites in the gastrointestinal (GI) tract. These hydrogels could be formed by grafting of monomers on the polysaccharides. Polysaccharides are readily available, cheap, non-toxic and are biodegradable. Hydrogels are a class of crosslinked polymers that, due to their hydrophilic nature, can absorb large quantities of water. These materials uniquely offer moderate to high physical, chemical, and mechanical stability in their swollen state. Hydrogels can swell quickly by imbibing a large amount of water or de-swell in response to changes in their external environment and this property makes them suitable materials for biomedical applications including controlled drug delivery application.  Students of B.Sc. 3rd and 2nd years formulated hydrogel of acrylamide with psyllium (a) and without psyllium (b) on dated 8th and 9th November 2023 in chemistry lab and throughout synthesis they were instructed by Dr Man Mohan. He also explained various characterization, evaluation techniques and biomedical applications of these formulated material devices. | Through experiments students were able to   1. conduct experiments independently 2. understand applications of designed bio-material 3. develop research ethics. |
| **(2) Project Report: Preparation of Organic Soaps (Honey, Turmeric, Tulsi, and Rose) Using Soap Base\***  **1. \*Objective\*:** The objective of this project was to prepare organic soaps utilizing natural ingredients such as honey, turmeric, tulsi, and rose, with the aim of promoting skin health and environmental sustainability.  2. \*Materials and Methodology\*: BSC 3 Chemistry students selected a glycerin soap base as the primary component, and incorporated natural extracts and essential oils from honey, turmeric, tulsi, and rose. The process involved melting the soap base, blending the ingredients, pouring into molds, and allowing sufficient time for cooling and solidification.  3. \*Results\*: The final products were four distinct organic soaps, each exhibiting unique fragrances, colors, and beneficial properties, such as antibacterial, anti-inflammatory, and moisturizing effects.  4. \*Evaluation\*: The soaps were tested for pH levels, texture, and lathering capacity, confirming that they are skin-friendly and effective for daily use, as well as biodegradable and environmentally safe.  5. \*Conclusion\*: The project successfully demonstrated the feasibility of leveraging natural ingredients for soap production. It promoted awareness of organic skincare options while emphasizing the importance of sustainability in everyday products. |  |
| **(3) Project Summary: Production of Activated Carbon from Pine Needles for Water Purification**  **1. Objective**: The project aimed to produce activated carbon using pine needles as a sustainable and cost-effective precursor for water purification.  2. Methodology: BSC 3 Chemistry students employed a carbonization process involving pyrolization of dried pine needles, followed by activation using chemical agents.  3. Results: The produced activated carbon exhibited an adsorption capacity for contaminants, demonstrating its effectiveness in improving water quality.  4. Analysis: Characterization of the activated carbon was conducted using XRD FTIR, confirming its amorphous nature and Functional groups suitable for water treatment applications.  5. Conclusion: The project successfully highlighted the viability of utilizing agricultural waste, such as pine needles, for producing eco-friendly activated carbon in water purification processes. |  |
| **(4) Determination of pH various nearby village soil samples:**  The study of soil pH is very important in agriculture due to the fact that soil pH regulates plant nutrient availability by controlling the chemical forms of the different nutrients and also influences their chemical reactions. As a result, soil and crop productivities are linked to soil pH value. Soil pH is the measure of soil acidity or alkalinity, specifically the inverse log of the Hydrogen ion concentration on a scale from 0-14. Neutral pH is around 7, with ‘acids’ being below 7 and ‘bases’ being from 7 to 14.  Most soils have pH values between 4 to 10. Soil pH is sometimes considered the “master variable” that has several impacts on plant nutrients and plant growth. Soil pH also impacts or interacts with other properties in the soil. Soil pH is an important factor in the soil, influencing nutrient availability and organism activity. pH value of soil is impacted by management, such as crop removal or limining. pH value can be increased by application of liming materials, or decreased by sulfur-containing materials.  Students of B.Sc. 3rd and 2nd years pH various 5 soil samples enlisted in table. In the chemistry lab, the pH of a soil solution it was measured first with universal pH paper and then followed by measurement of pH with pH meter. The soil sample were prepared with double distilled water solution. These samples were brought my students from their own fields at nearby village. Here are the results of the observations recorded by different groups of students:   |  |  |  | | --- | --- | --- | | **Sr. No** | **Sample / village name** | **Mean of pH value recorded** | | 1 | Basantpur | 7.6 | | 2 | College NSS Vaatika | 7.1 | | 3 | Thali | 6.7 | | 4 | Tatapani | 6.2 | | 5 | Gharyana | 6.9 |   This entire experiment was performed on dated 28th November 2023 in chemistry lab and throughout experiment students were instructed by Dr Man Mohan. He also explained various factors that control pH of soil and advise students to assist their family member in soil pH measurements before cultivation of their fields and choose crops of suitable pH to their land and environments. | Through experiments students were able to   1. conduct experiments independently 2. understand impact of pH and environment on crop selection. 3. develop research ethics. |

* 1. **Collaborations**

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| **Collaborations** | **Response** |
| **5.5.1 Collaborations With Peer Educational/ Research institutions**  PEER focuses on Discipline-based Education Research, advancing both scholarship and teaching goals that are valued at all types of academic institutions.  A collaboration between our college and japee university waknaghat has helped to make educational research more available to our students. Working with their lab under experienced professors has led to the development scientific curiosity and interest among our students. Research collaboration can help create a curriculum that's informed by research, which can improve the student experience and employability. |  |
| **5.5.2 Collaborations with Other Government Bodies /Industry**  Our college actively collaborates with various government bodies and industry partners through initiatives like joint research projects, student internships, faculty consultancy, technology transfer agreements, and participation in government-funded programs, allowing students to gain practical experience while contributing to real-world solutions in specific sectors relevant to our academic disciplines. Our college has Collaborations with few Governments organization, which are as:  (a) MEMORANDUM OF UNDERSTANDING Between Atal Bihari Vajpayee Government College Sunni and Sunni Hydro Electric Project (SJVN Unit)  (b) MEMORANDUM OF UNDERSTANDING Between Atal Bihari Vajpayee Government College Sunni and Himachal Pradesh Kaushal Vikas Nigam |  |

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| With Peer Educational/ Research institutions |  |
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