



## **AIC Report**

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**November 20, 2014**

**Department of Food Science & Technology  
University of Swabi , KPK**

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## Standard and Criteria for Agriculture Degree Program evaluation

**Table 6.1: Points obtained by Food Science degree program**

S.No	Criteria	Total Points	Points Awarded
<b>Major Criteria</b>			
1	Strength and Quality of Faculty	300	180
2	Curriculum Design and Development	150	90
3	Infrastructure and Learning Resources	150	80
4	Students Support and progression	100	50
<b>Sub total</b>		<b>700</b>	<b>400</b>
<b>Minor Criteria</b>			
5	Research and Consultancy activities	150	60
6	Governance and leadership	100	60
7	Innovative/best practices	50	30
<b>Sub total</b>		<b>300</b>	<b>150</b>
<b>Grand total</b>		<b>1000</b>	<b>550</b>

### Final Recommendation

On the basis of the external evaluation and assessment the accreditation of the B.Sc(H) Degree programs of the specialization Food Science & Technology, Department of Agriculture University of Swabi KPK has been recommended at “Y2” category of NAEAC/HEC with expectation that the university will improve the standard of the department’s specialization of Food Science as per the recommendations shown by the committee in this report.

### Signatures of AIC Members

Name and Designation .....Signature



**Prof. Dr. Alam Zeb**

Chairman Department of Food Science & Technology,  
The University of Agriculture, Peshawar KPK.

## **ACKNOWLEDGMENT**

We the NAEAC/AIC External Evaluation Team first of all acknowledge the support and cooperation of the **Honorable Vice Chancellor Madam Noor Jehan** for her excellent arrangement carried out for our visit to university of Swabi KPK. We are also very thankful to **Prof. Dr. Mukhtar Alam** (Dean) faculty of Agriculture Sciences for his welcome, presentation and provision of detail information asked by NAEAC about the education standard of the specialization of Food Science & Technology, Department of Agriculture. We appreciate the cooperation of Faculty/ Staff members of the Food Science & Technology as well for their guidance and help during our inspection of the department.

The Inspection Team is very thankful to **Mr. Naseer Alam Khan** (Secretary) of NAEAC and his visited staff for cooperation, providing instructions and guidance for the external evaluation of the department.

## 1: Summary/Abstract of the External Evaluation

The members of National Agriculture Education Accreditation Council (NAEAC) HEC and Accreditation Inspection Committee (AIC) visited on 20<sup>th</sup> Nov 2014 for external assessment of B.Sc(H) degree program of Food Science & Technology discipline, Department of Agriculture University of Swabi KPK.

- At present the Food Science discipline is offering only B.Sc(H) FST degree program. The duration of this degree program is 4 years of 8 semesters.
- The syllabus of the courses is adopted from the HEC latest approved Curriculum designed for food Science subject of the country.
- There are 4 faculty members, 1 assistant professor and 1 lecturer (female) are permanent while two contract lecturers. Lab staff included 2 lab assistant and 1 lab attendant on contract basis.
- The total credit hours of 8 semesters courses is 138. The first 4 semesters are for general introductory courses. The specialization courses are from 5<sup>th</sup> to 8<sup>th</sup> semesters.
- There are two classrooms and two labs.
- The total number of students at this stage is 38. Among them 14 students are in 6<sup>th</sup> semester and 24 students of final 8<sup>th</sup> semester, who recently completed B.Sc(H) study.
- This was the last semester of first batch of B.Sc(H) graduates who completed the degree study program.
- Limited numbers of equipment in labs of food science are available for students practicals.
- Similarly separate portion is allocated in central library containing food science books.
- Filing record, of courses, students' classes attendance, meetings and examinations are properly maintained by faculty.
- Hostel facility is available on campus both for students and faculty.
- Transport of new buses is available for day visit students pick and drop services.
- Students have received laptops under youth laptops scheme of KPK govt. Cafeteria, mosque and ATM bank facility is available for students on campus.
- The department has the shortage of specialized faculty for core courses of the specialization such as food analytical chemistry, food microbiology and food engineering.
- The department is suggested to purchase more specialized food science books and equipment so to start M.Sc(H) degree program.
- PhD qualified faculty is require for the department so to enhance the quality of education. The faculty should attend academic training organized by other institutions.
- The department should transmit research achievements to food industries as well as arrange training for women of swabi region regarding preservation of fruits and vegetables at home scale.
- Qualified and trained lab staff is required to operate sophisticated labs equipment of the labs. Lab-Safety courses are to be included in undergraduate curriculum.
- The department should develop linkages with other food science institutions. Standard of examination procedure is to be improved.

- Establishment of sensory evaluation lab in the department is essential for students' practicals of sensory analysis of food.
- Study tours for students are to be arranged to visit food industries as well as other universities of the country to develop leadership and friendship with students.
- The faculty are encouraged to publish their research achievements in at least HEC recognized journals for their own career as well as national interest and publish pamphlets of food preservation so the interested people of the region can learn to preserve their surplus fruits and vegetables from wastage.

## **2: Introduction**

### **2.1 NAEAC Inspection Team**

For external assessment and accreditation of degree program of Food Science & Technology discipline (Department of Agriculture University of Swabi) the chairman National Agriculture Education Accreditation Council (NAEAC) HEC Islamabad nominated me as convener and subject expert of Accreditation Inspection Committee (AIC). The committee members visited on 20<sup>th</sup> November 2014 as scheduled by NAEAC.

### **2.2 Presentation of Dean on university of swabi**

The University of Swabi is situated near Swabi interchange on Motorway in Ambar village of Swabi District KPK. Prof. Dr. Mukhtar Alam (Dean) briefed the Accreditation Committee through presentation about the new established university of Swabi, history of Swabi region, faculty, students, courses curriculum of B.Sc (H) degrees program of food sciences, research projects completed and still in progress by faculty, classrooms, labs, major equipment, total strength of students of previous sessions & at present year and future program of the department. The university was earlier known Ambar Campus of the Abdul Wali Khan University, Mardan working since 2010 was upgraded to The University of Swabi. Notification issued on November 26, 2012. Department of Agriculture was one of the Departments already working. Total departments are 11 having 1500 students.

### **2.3 Purpose of AIC Visit**

- To validate the self-Assessment Report and the Peer Team Report of the institute.
- To bring external evaluation of the academic program of food Science B.Sc(H) degree of the university for rating and accreditation.
- To prepare consolidated report about the Food Science education program, strength and weakness.
- To submit recommendations about the Food Science discipline to NAEAC chairman.

## 2.4 Mission of the Food Science degree program

The department at present provide education only of B.Sc(H) 16 years degree program in food Science & Technology. The total strength of the students this year was 38. 14 in 6<sup>th</sup> semester and the remaining 24 have completed B.Sc(H) degree study.

## 3: Criterion wise Analysis

### 3.1 Major Criteria

#### 3.1.1 Strength and Quality of Faculty

Education qualification of all food science faculty staff is M.Sc(H) FST working in the department. The name of senior most faculty in food science discipline is Mr. Abdusatar Shah Assistant professor whom PhD study is in progress. There are full time permanent faculty included 1 assistant professor, 1 lecturer, 2 contract lecturers. The total strength of faculty is 4.

#### 3.1.2 Curriculum Design and Development

The Department of Agriculture is providing education of Food Science only at B.Sc (H) degree level. Duration of B.Sc (H) FST is 4 years (8 Semesters as shown in table 3.1).

This was the final semester for the first batch of 24 B.Sc(H) students who completed their study. ST Revised National Curriculum 2011 has been adopted for degree program. All courses are prepared with clear contents and objectives.

Most of the courses are 3 credit hours, 2 hrs for theory and 1 hr for practical. Courses teaching is completed as per semester academic calendar of the department. Students' perception is that curriculum is knowledgeable and innovation if taught with practicals.

**Table 3.1 Semester courses and credit hrs**

<b>Semester name</b>	<b>Total CH</b>	<b>Type of courses</b>
1 <sup>st</sup>	18	General
2 <sup>nd</sup>	19	General
3 <sup>rd</sup>	18	General
4 <sup>th</sup>	18	General
<b>Total</b>	<b>73</b>	
5 <sup>th</sup>	18	Food Science
6 <sup>th</sup>	18	Food Science
7 <sup>th</sup>	17	Food Science
8 <sup>th</sup>	12 (included 4 CH internship)	Food Science
<b>Total</b>	<b>65</b>	
	<b>Total CH= 138</b>	

### **3.1.3 Infrastructure and Learning Resources**

There are 2 class rooms each can accommodate 30 students containing white board and multimedia facility. The number of laboratories is 2 one is for students practical of food microbiology and food analysis while the second lab is for food processing. Limited numbers of equipment are available to cover the needs of B.Sc(H) degree program. The department has submitted the list of many sophisticated equipment, tools and glass ware to the University for purchase.

There is one common library of the university where limited numbers of books are available in separate section allocated for Food Science subject. The university has prepared a list of more books of Food Science for purchase. The library was found well organized having suitable library furniture needed for students study.

The university has access to use HEC digital library for academic and research purpose. The university has linkages with various public and private sectors. The faculty of food science are interested to develop linkages with various food industries, research institutes and universities of the country.

### **3.1.4 Students Support and Progression**

Most of the theory courses have practicals. In B.Sc (H) final semester 8<sup>th</sup> semester one course is 4 C.H Internship. Students' attendance files are properly maintained by faculty of the department. Buses transport facility is available for day scholar students pick and drop. ATM bank facility is also available on campus and the administration is working hard to provide dispensary and other basic facilities to students

## **3.2 Minor Criteria**

### **3.2.1 Research and Consultancy Activities**

Sufficient grant is received by the university from HEC and through other projects for the development of the university. Faculty of food science has published few papers in HEC recognized journals as well pamphlets in urdu for public for preparation of various food products such as jams, jellies, pickles and tomato ketchup etc. One senior faculty member mr. Abdusatar Shah has also visited abroad for attending conferences.

### **3.2.2 Governance and Leadership**

The highest administrative governance is the vice chancellor. Food Science discipline is headed by a chairman of the department of Agriculture and Dean Faculty of Agriculture Sciences. The department provides annual academic calendar scheduled for classes, seminars, meetings, students' tours, examinations and vacations.

### **3.2.3 Adoption of Best Practices**

QEC exists in the institute which ensures the provision of quality of education. Faculty maintains proper filing of courses, students' classes attendance and



department meetings. For examinations 75% attendance of students in classes is compulsory. Most students expressed that lab facilities are to be improved however they have shown satisfaction over the education standard of the university. However they realized that because the university is new so with the passage of time it will further develop.

## **4: SWOT Analysis**

### **4.1 Major Strength**

- The department has two labs one for food analysis and other one is for food processing but limited instruments for students' practicals.

### **4.2 Major weaknesses**

- Serious shortage of Ph.D qualified, senior and experienced faculty to teach the courses such as food microbiology, food biotechnology and food engineering.
- Sensory evaluation lab is required for food sensory analysis experiments.
- In-adequately furnished classrooms, faculty offices with seminar room and committee room.
- Lack of IT facilities, research and reference material and departmental library.
- Examination system and grading system needs substantial improvement.
- Shortage of qualified lab staff for maintenance and installation of equipment.
- Insufficient sports facilities both for students and faculty.
- No faculty development plan in place.

### **4.3 Major Opportunities**

- The university is actively engaged to develop infrastructure with support of HEC.
- More jobs opportunities are available for graduates in food industries home and abroad, five stars hotels, restaurants, research institutes and food quality control agencies
- To encourage linkages with national food industries to create jobs for graduates.
- The university can provide opportunities for students' higher study through collaboration with foreign universities.
- The talent of female students is to be used for women training of Swabi District in preparation and preservation of various fruits and vegetables products.
- Extend the services of Food Quality Analysis Lab towards food industries as well as government & private agencies involved in food quality inspection.

#### **4.4 Major Challenges**

- Specialized faculty required for core courses such as Food Engineering, Food Microbiology, Cereal technology and Milk technology.
- Exposure of students to stakeholders industry and research institutes.
- Efforts are needed to convince food industries to financially support internship students of B.Sc(H).
- Attractive salary needed to sustain qualified and experienced lab staff. Collaboration needed with Agriculture Extension for successful outreach program.
- The university should also commence M.Sc(H) degree program of Food Science otherwise the students completing B,Sc(H) degree will facing hurdles for admission in postgraduates admission in other universities.
- The university should accelerate the construction work of the new campus because the space wise the existent building will not cover the needs of university any longer.

#### **4.5 Stakeholders feed back**

Food Science plays important role to run food industries successfully. Graduates practical training is to be improved in subjects of food microbiology, food analytical chemistry and food engineering. Computer skill is very important for graduates working in food industries. Students are to be encouraged to participate in various seminars, workshops and conferences to improve their knowledge and leadership. Meetings to be held regularly with students' parents' to know their views about their children progress, weakness and suggestions for improvement. Contacts are to be made with various food industries and research institutes for students' tours and internships.

### **5: Actionable Recommendations**

- A few young inexperienced faculty members, but no senior Ph.D qualified and experienced teaching faculty.
- No faculty development plan. The young and inexperience faculty requires training pedagogy, examination and grading system.
- Lack of well-equipped food science Labs.
- Non-availability of some important Labs including food sensory Lab.
- Non-availability of research and reference material and adequate IT facilities.
- Very limited recommended books on food science rated to the B.Sc (Hons) courses.
- The faculty and students may be encouraged to organize study tours of food industry.
- Only the qualified and trained Lab. staff may be inducted for food Labs.

## Annexures:

### Annex 1: Strength of Faculty

Discipline	Faculty	Qualification	Job type
Food Science & Technology	1 Assistant Professor	M.Sc(H) FST	Permanent
	1 Lecturer	M.Sc(H) FST	Permanent
	2 Lecturers	M.Sc(H) FST	Contractt
	<b>Lab Staff</b>		
	2 Lab assistant	M.A	Contract
	1 Lab attendant	F.A	Contract

### Annex II: Strength of B.Sc(H) FST Students in 2014

6 <sup>th</sup> Semester	Final 8 <sup>th</sup> Semester	Total number of students
14	24	38
	These students have completed B.Sc (H) recently. It was the first batch who got the degree.	

### Annex: III: Total classrooms, labs, books, equipment and projects.

No of classrooms and labs Labs	No of equipment	No of new equipment demanded	No of books Available	No of projects in last 3 years
2 +2	10	30	60	Nil
<b>Equipments list:</b> (1) Microscopes (2) magnetic stirrers (3) Icubators (4) electronic balanes (5) Refractrometer (6 )				
<b>Books List:</b> (1) Food chemistry (2) Food microbiology (3) Food Science (4) Human nutrition (5) Dairy technology (6) Post harvest technology				