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National Agriculture Education Accreditation Council

19

**Report of the
Accreditation Inspection Committee
(AIC)**

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KPK Agricultural University, Peshawar**

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1. General

1.1 Introduction

The Accreditation Committee was briefed by the Chairman, Department of Food Science and Technology, KPK Agricultural University, Peshawar about the Department mission, objectives and activities. The Department was established in 1974 in the then College of Agriculture, affiliated with Peshawar University, to produce human resource for food industries of the KPK province. The main thrust of the Department is to produce high quality graduates in Food Science in order to address the basic and applied issues of food industry. Their emphasis is also on development and preservation of new food products. The Department also intends to disseminate their research achievements to farmers and food industry.

1.2 Accreditation of Agriculture Education Institution in Pakistan

As per clause 10 subsections (d) and (I) of the byelaws of National Agriculture Education Accreditation Council (NAEAC), an Accreditation Inspection Committee (AIC) is to be constituted for assessment and accreditation of the degree awarding agriculture education institutions in Pakistan.

The Chairman NAEAC constituted the following AIC to undertake visit of Department of Food Science and Technology, KPK Agricultural University, Peshawar on December 30-31, 2010:-

1. Prof. Dr. Faqir Muhammad Anjum (Convener)
Director General,
National Institute of Food Science and Technology
University of Agriculture, Faisalabad
2. Dr. Sarwar Dogar (Member)
Production Manager
Fauji Cereals, Dhamial Road, Rawalpindi
3. Mr. Naseer Alam Khan
Secretary, NAEAC, Islamabad

The terms of reference of the Committee are as follows:-

- To validate the Self Assessment Report and Peer Team Report of the Department;
- To carry out external evaluation of the academic program for rating and accreditation based on the criteria given in the evaluation manual;
- To submit a synthesized exercise report on the basis of SWOT analysis and interaction with administrative, teaching faculty and students as well as detailed visit of the infrastructure and facilities;
- To submit degree programs accreditation and other teaching-learning resources available for the execution of the degree program to the Chairman, National Agriculture Education Accreditation Council (NAEAC).

1.3 The Department of Food Science and Technology, KPK Agricultural University, Peshawar

The Committee was apprised that the Department of Food Science and Technology, KPK Agricultural University, Peshawar was established in 1974 in the then College of Agriculture which was affiliated with Peshawar University. The Department comprises of 9 faculty member out of which five are holding Ph.D. degrees and supporting staff consisting of 8 members. The teacher-support staff ratio is about 1:1. The annual budget of the Department is Rs. 10.368 million out of which only 0.12 is allocated to the student's research. The Department has three (3) laboratories and one (1) processing hall for graduate and post-graduate students:-

- Food Analysis Laboratory
- Food Processing and Analytical Laboratory
- Sensory Evaluation Laboratory
- Food Processing Hall

The Department of Food Science and Technology, KPK Agricultural University, Peshawar has the following objectives:

- To provide education of Food Science & Technology at Degree level of B. Sc. (Hons.), M. Sc. (Hons.) and Ph.D.

- To provide training for preserving surplus food
- To develop market oriented new products from low raw materials
- To improve the overall quality of preserved food products prepared commercially in the country, particularly in the Province.
- To convey research achievements to farmers and food industries.

The mission of the Department of Food Science and Technology are given as under

- To produce graduates in food science discipline with high quality of education both in theory and practical;
- To develop administrative and market leadership in the graduates so they can compete for their career at home and abroad;
- To revise the syllabus as per Higher Education Commission (HEC) revised curriculum of Food Science and Technology so that the graduates can solve the problem of food preservation with new knowledge and skill;

The Department has produced 01 Ph.D., and 71 M. Sc. (Hons) in Food science and technology and 91 B.Sc. (Hons.) in Agriculture major Food Science and Technology during the last decade. Among these 09 students won University Medals.

1.4 Academic Program

The Department currently offers three degree programs namely B. Sc. (Hons) Agriculture Major Food Science and Technology spreading over 8 semesters, M. Sc. (Hons.) Agriculture Major Food Science and Technology (2 years) and Ph.D. Agriculture Major Food Science and Technology (minimum 5 years). The B. Sc. (Hons) Agriculture major Food Science and Technology is a four year degree program that spreads over 8 semesters. The degree requirement is 149 credit hours including 15 credit hours dedicated to internship; 77 credit hours spread over 4 semesters are general courses and in the last four semesters they take 72 credit hours of food science and technology and elective courses. The requirements for admission to B. Sc. (Hons) Agriculture is HSSC with minimum 45% marks.

The requirements for M. Sc. (Hons.) Agriculture Major Food Science and Technology are B. Sc. (Hons) Agriculture Major Food Science and Technology with CGPA 2.50 + NTS GRE (General) Score 50%. For Ph.D. program M. Sc. (Hons.) Agriculture Major Food Science and Technology with CGPA 3.00 + NTS GRE (General)/GRE (subject) Score 50% is required. The degree course work requirements for M. Sc. (Hons.) Agriculture Major Food Science and Technology and Ph.D. Agriculture Major Food Science and Technology are 35 and 30 credit hours, respectively with 2:1 ratio of Major and minor subjects. The details of the rules and regulations pertaining to the admission and academic degree program are given in the prospectus of the University.

2. Criterion-wise analysis

2.1 Curriculum design and development

The curriculum for degree level courses has been developed with the collaboration of HEC through its National Curriculum Review Committees (NCRCs). The Department has implemented the University policy regarding teaching the latest courses prepared by HEC for Food Science and Technology. A senior professor from this Department is a member of National Curriculum Review Committees (NCRCs). Regular review and update of the courses are very essential to keep abreast of the latest knowledge in the discipline. The curricular revision based on feedback by different stakeholders such as students, employers, alumnae and others will help improve the quality of education. The Chairman explained that the revised curriculum was adopted from the NCRS-HEC in which different stakeholders were invited. No such mechanism at University/Department level is designed to update the courses based on the feedback by concerned stakeholders. The Committee observed that meeting of the Board of Studies is not held regularly to review feedback from students. For the student assessment in examination maximum weightage is given to final examination (60%) followed by mid term (30%) and the assignments/quizzes etc. (10%).

2.2 Strength and quality of Faculty

The Evaluation Committee had meetings with faculty members and supporting staff of the Department. The following conclusions were drawn as an outcome from the discussion held at length:-

1. The faculty members showed satisfaction with the salaries but showed some reservation about the teaching environment;
2. All teachers agreed that the teaching environment is not conducive for delivering quality education due to following reasons:-
 - a. The laboratories are insufficient and are not properly equipped. Most of the equipments purchased are not functioning.
 - b. Practical are not performed due to non-availability of laboratories facilities.
 - c. The faculty members were satisfied with the cooperation provided by the Chairman of the Department and Dean of the Faculty.
 - d. Teaching aids such as multimedia are not accessible to all faculty.
 - e. The classrooms are insufficient and classes are generally taken in the laboratories.
 - f. The faculty members pointed out that in this IT era most teachers do not have access to computer facility.
 - g. The faculty members suggested that funds should be provided for the purchase of equipment.
 - i. Some teachers felt that there were insufficient training facilities.
 - j. The faculty members agreed that number of students have increased many folds since inception of the Department but no increase in space for teaching and practical.
 - k. No seminar room available in the Department.

2.3 Students support and progression

The Committee visited class rooms and interviewed the students about their educational environment. Following issues were raised by the students:-

1. No or a few practical are performed.
2. New books are not available in the Department.

3. Funds and equipment are not available to conduct research
4. No industrial visits are carried out
5. The laboratories are used as classrooms that hinders in research work.
6. No internet access is available to the students
7. The job opportunities are limited that should be explored
8. Latest food journals are not available
9. Some teachers don't take classes regularly
10. No social activity is carried out in the Department

2.4. Infrastructure and learning resources

The Committee visited the Department and observed that:-

- There is no Departmental library. The books are very old in the main library.
- The Department has no regular class rooms and most of classes are taken in the laboratories
- There is no undergraduate laboratory. The laboratories are not equipped with modern equipment and students fail to perform practical and conduct research work
- Modern teaching aids like multimedia, internet resource etc are inadequate in the Department
- Most of the equipments available in the laboratories are not functional

2.4 Research and consultancy activities

The Committee concluded after their visit to class rooms and laboratories and meeting with faulty members and students that;-

- The funds are not available for research work of the post graduate students and undergraduates class practical performance
- No research project is in progress in the Department at the moment
- The Department does not have any HEC funded Ph.D. students
- No faculty member has submitted any project proposal to the funding agency
- The Department has no collaboration with private industry to support their student research work.

2.6 Governance and leadership

The highest administrative governance is the Vice Chancellor, followed by the Registrar, Treasure and Controller of the Examinations. The organizational set up of the Department consists of the Chairman who is responsible to the Dean Faculty of Nutrition Sciences. A good rapport exists among the faculty members and those responsible for the management in the University. The University provides fund to the Department for research work and other management work.

3. Overall SWOT Analysis

3.1 Major Strengths

- Qualified teaching/research faculty is available with sufficient career growth opportunities to keep them motivated for their job performance.
- Students wish to learn and perform well during their academic endeavors and thereafter but are handicapped by the available facilities.
- Academic program such as curriculum is generally sufficient for B.Sc (Hons.) and M.Sc. (Hons.) students to make them successful technologists.
- Evaluation of course contents, instructions and grading by students are good.

3.2 Major Weaknesses

- Research grants from local funding are not enough and funding is always delayed.
- Limited number of supporting staff and vacant seats of laboratory staff
- Budget is low and centrally controlled, which does not support students to conveniently conduct their research work.
- Library and computer centers are short of facilities.
- Infrastructures for practical performance, conduction of experiments/research work need improvement.
- Instruction facilities such as proper classrooms, multimedia etc needs to be improved.
- Faculty is over burdened and takes more credit hours than the recommended work load.
- Professional development opportunities for faculty are limited.
- All laboratories, except microbiology, are not properly equipped for post-graduate research work.
- Seminars/workshops are seldom conducted.
- In the absence of well equipped laboratories inadequate training is provided to the students that hinders in the future career.

3.3 Major Opportunities

- Potential of students is high due to good academic records before opting Food Technology as their major. This strength can be exploited to facilitate students to maximally utilize their abilities to gain skills for professional fulfillments.
- Research funding by donor agencies other than HEC should be secured.
- The student can have access to National and International research journals, if computer centre is established in the.

3.4 Major Challenges

- Addition of advanced courses and materials to meet industrial/professional requirements.
- Exposure of students to stakeholders/industry and research institutes.
- Internships and student financing from different external sources
- Updating of teaching aids, course contents, etc.
- Funds to equip laboratories to facilitate research activities.
- Internet facility to all postgraduate students for searching information necessary for their degree requirements.

4. Recommendations (General)

4.1 Curriculum

Though Curriculum for B.Sc. (Hons.) and M.Sc. (Hons.) programs is developed to some extent, a lot of efforts are required to acquaint the students of the emerging developments in the science/technology and its successful application for reaching the potential requires improvements. Stakeholders are generally not taken on board to suggest their requirements and curriculum is revised occasionally by the academic professionals. The curriculum should contain basic as well as applicable know-how to cope with the ever demanding job markets.

4.2 Faculty Development Program

The faculty development program is not objectively planned.

4.3 Students

Brilliant students from the available lot opt for majoring Food Technology, and require comparable academic development facilities to other Departments. The library does not have enough books and only undergraduate level books are available. Students also hope for library and computer centers in the Department.

4.4 Infrastructure

The infrastructure is appropriately equipped for graduate students but for their field practice it requires updated relevant knowledge, teaching/learning environment (appropriate class rooms and laboratories), teaching/learning capacity, teaching aids, modern laboratories for research and development, sources of information such as books, journals, internet etc, which are well behind standards and consequently require a lot of efforts to improve.

4.5 Linkages with Local Industry

The industry is generally shy of accepting internships and study visits. This area needs further efforts for more gains in skills by students.

4.6 Library

More reference books are required for this subject as food industry is not to diminish as long as people are there.

4.7 Budget

The operational funds and additional budget for research and development needs to be explored from different venues such as HEC, PARC, etc.

4.8 Dissemination in Research Information

Frequent national/international forums such as seminars and workshops should be made part of the professional activities.

4.9 Placement Bureau

The University should take care of its graduates through their feedback and interaction after leaving University.

4.10 Final Recommendations

The performance of the Food Science and Technology Department is to be cohesively and forcefully improved in a short period of time to make the product compatible. To further improve the degree program standards, Department has to make serious efforts to equip laboratories and class rooms. Funds for research and development should be readily available that student's time may not be wasted due to shortage of chemicals and consumables, etc. The Department should prepare PC-1 immediately for strengthening and submit to HEC for funding.

The extract of degree program evaluation to standards side is as under please:

S.No	Criteria	Total points	Points awarded
1	Strength & Quality of faculty	250	160
2	Curriculum design and development	150	95
3	Student support and progression	150	85
4	Infrastructure and learning resources	150	75
Sub- total (a)		700	415
5	Research and consultancy activities	100	40
6	Governance and leadership	100	70
7	Innovative/best practices	100	60
Sub- total (b)		300	170
Grand total (a+b)		1000	585