



AIC Report

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May 20, 2015

Department of Soil Science

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Criteria for Agriculture Degree Program Evaluation
Soil Science B.Sc. (Hons) 2014-15
Lasbella University of Agriculture, Water and Marine Sciences, Uthal

S. No.	Criteria	Points Assigned	Points Awarded
A. Major Criteria			
1	Strength and Quality of Faculty	250	130
2	Curriculum Design and Development	150	120
3	Infrastructure and Learning Resources	200	120
4	Students Support and Progression	100	50
Sub - Total (A)		700	420
B. Minor Criteria			
5	Research and Consultancy Activities	150	55
6	Governance and Leadership	100	60
7	Recent Innovations and Best Practices	50	25
Sub - Total (B)		300	140
Grand Total (A+B)		1000	560

(Five hundred and sixty only)

56%

Name and Designation

Signature of Program Evaluator

EXECUTIVE SUMMARY

The Department of Soil Science was established by the LUAWMS, Uthal on May 8, 2012 under the Faculty of Crop and Plant Sciences. It offers graduate degree Program in Soil Science discipline. At present the Department of Soil Science is working in the old building of the Faculty. Dr. Muhammad Waseem, Assistant Professor is working as a Chairman of the department and Prof. Dr. Ghulam Jilani as a Dean of the Faculty of Crop and Plant Sciences. The number of students registered in the Soil Science department during 2012 and 2013 (5th Semester) was 06 and 08, respectively. Out of four teaching faculty members one is holding PhD in Agronomy, one (Mr Shahmir Ali Kalhoro) is M.Sc in Soil Science (on study leave for PhD from abroad). Whereas two faculty members are simply graduates and hold B.Sc (2) degrees. The department has no Associate Professor and Professor level faculty members. The Revised Curriculum-2010 developed by the HEC has been adapted by the department. However, the faculty members are overloaded. There seems to be lack of research activities, projects and publications in the department. Although, the department has spared a small room for Soil Science Laboratory with very few number of equipment, including Atomic Absorption, orbital shaker, microscopes, etc. there is a dire need of technician and other staff members to operate/run the equipment and maintain the laboratory with proper safety procedures, protocols and precautions. Like other departments of the faculty, the Department of Soil Science also shares the faculty offices, supporting staff and other facilities including library with very few HEC recommended text and reference books. However, it has a separate classroom for undergraduate (major Soil Science) students. The department actively organizes field trips and study tours for the students and faculty members. Generally, the Department of Soil Science is at an emerging stage, there is a dire need of faculty members, technical and supporting staff, classrooms, lab, library, multimedia and all other necessary facilities for imparting high standard education and quality research.

INTRODUCTION

Baluchistan, the largest province of Pakistan covers around 44% of the total land area of the country (FAO, 2014). Agriculture and livestock production are two major sectors contributing to the economy of the Baluchistan province. The province is also known as “Fruit basket of the country” because of its unique environment and ecological condition that favor the cultivation of various fruits. These fruits are exported to various countries and thereby contribute significantly to the economy of the province and the country. The fruit requirement of the local communities is also fulfilled by these fruit species.

Considering the importance of agriculture, livestock and fisheries in Baluchistan economy, the Government of Pakistan established an agricultural university (Lasbella University of Agriculture, Water and Marine Sciences, LUAWMS) in the province during 2005. The university offers degree programs in Agriculture, Livestock, Water and Marine sciences. The graduates produced by the university are playing significant role in the economy of Baluchistan and Pakistan. The farmers of the province are also provided trainings to improve quality and quantity of their crops through advance scientific knowledge.

Among the various established departments of the university, the recent establishment of Soil Science department is no doubt a great step of the authorities. The department’s goal is to impart quality education and conduct research related to soils and environmental issues. This AIC report covers the evaluation of Graduate Degree Program offered by the Department of Soil Science and the current analysis of the department conducted by the AIC team constituted by the NAEAC-Islamabad on 20 May, 2015.

CRITERIA WISE ANALYSIS

Strength & Quality of Faculty

At present four (04) faculty members are posted in the Soil Science department two with B.Sc. (one in Soil Science and other in Plant Sciences), one with M.Sc. (in Soil Science) and one with PhD (in Agronomy) degree. The faculty members are quite young and energetic with zeal of imparting education and conducting quality research. Out of these four faculty members, one Mr.

Shahmir Ali Kalhoro is on study leave abroad (China) and will hopefully join the department soon after completion of his study.

The Department of Soil Science lacks the HEC/PSF/PARC/Govt. funded projects. Research publications in HEC recognized and international reputed journals with impact factor are lacking as well. Like other departments of the faculty, there is a need of the senior faculty member in this department as well, who can lead the department on various forums and run the official matters smoothly.

So far 06 students have been awarded degrees in Soil Science discipline. However, the interest of students to opt Soil Science as a major field is very poor. To some extent the teaching/ learning methods adopted by the faculty are fairly good enough for running the degree program in Soil Science. In personnel interviews and meetings faculty sounded to be partially satisfied with the job in such a hard environment. Some faculty members were found to be very active to participate in various scientific events including national conferences/workshop/study trips, etc.

Curriculum Design & Development

The Department of Soil Science, Faculty of Crop and Plant Sciences has adopted the HEC Revised Curriculum 2010, with less than 20% deviation as per demand and environment of the area and province. The department has constituted a Board of Studies (BOS), which conducts official regular meetings to take academic decisions for further process and approvals.

Generally, several academic facilities including library are being shared by the faculty members and students. The department has no access to HEC-Digital online library, for searching quality information and latest/updated review. The dropout ratio of the students was very low and considerable.

The course files which were randomly checked by the AIC were found updated and well maintained by the faculty members. Upon personnel individual interview/meetings the students were found to be little bit unsatisfied with practical and field work facilities available to them. However, the students were satisfied with the quality and knowledge being transferred by the faculty members.

Infrastructure and Learning Resources

The Department of Soil Science has one classroom to accommodate only 15 major students. Another classroom which is general and is being shared with other departments has capacity to accommodate about 50 students. The department has also one teaching/research laboratory with few equipment (not more than 12), like Atomic Absorption Spectrophotometer, Flame Photometer, microscopes, shakers, spectrophotometer, etc. This laboratory has capacity to accommodate not more than 15 students. All other infrastructure facilities are general and being shared with the other departments of the faculty and university. However, good thing is that the university has constructed a new faculty building; which will be soon ready to shift all the agricultural departments, including Soil Science as well. Where, it is expected that the Soil Science students and teachers will have access and approach to all required facilities, including classrooms, experimental area, research laboratories, offices, chemical and glassware stores, green-houses, etc.

Students Support and Progress

The current status of admission to B.Sc Degree Program offered by the Soil Science department is un-satisfactory and discouraging, possibly due to lack of facilities in the old temporary building. Merit/Need based scholarships are also available for poor students. Resident halls/hostels with dining facility for students is available. Sports facilities at the campus are also available for healthy extra-curricular activities. Medical facility through a dispensary is also available for the faculty members, students and administrative staff. The campus has also an auditorium hall to organize and celebrate different programs and festivities including annual function. Transport facility is also available for the non-resident faculty members, students and other staff members.

The students of this department were very obliging, active, regular and enthusiastic to learn. However, due to limited facilities and funds they were little bit unsatisfied and scared.

Research & Consultancy Activities

Although, there seems to be shortage of research funds and grants from different internal and external sources, including HEC, PSF, etc. the department has recently initiated the registration

of postgraduates in Master's degree program. At present the department has got 02 postgraduates registered. The teaching faculty needs to start advisory services for growers and other organizations involved in agriculture profession.

Governance and leadership

The organizational setup of the university is well defined and is as per the University Act. In general, the university has all the administrative and financial heads, including Vice Chancellor, Director Finance, Controller of Examination, Deans and Chairmen to run the institute, faculties and departments as per acceptable rules and procedures. The Department of Soil Science is being run by the Chairman under the Dean, Faculty of Crop and Plant Sciences. However, the financial matters of the department are still under the control of Director Finance rather than the Chairman or Dean of the Faculty. For academic staff appointment the university generally follows HEC recommended procedure and protocols.

SWOT ANALYSIS

Major Strength

- Soil science degree program has adopted HEC approved curriculum.

Major Weaknesses

- Shortage of highly qualified and experienced teachers particularly having specialization in Soil Science (Soil Survey, Soil Taxonomy, Soil Salinity, Soil Fertility, Soil Physics and Soil environment).
- Shortage of HEC recommended Text and Reference Books, and subscribed Research Journals in the library.
- Shortage of classrooms with audiovisual aids and multimedia facilities.
- Shortage of laboratory, field and survey equipment.
- Shortage of laboratory and field staff, including lab technicians, lab assistants, etc.
- Non availability of specified soil labs (like Soil Salinity, Soil Fertility, Soil Physics, Soil Mineralogy and Soil Survey Labs.).
- Very limited IT facilities, reference material and other learning resources.

Major Opportunities

- Faculty members have great professional opportunities for future development, in terms of qualification, promotion and up-gradation.
- Compared to other parts of the Baluchistan, Uthal is agriculturally important area, with cotton, banana, chiku and other economically important field and fruit crops; hence there is a good opportunity to develop and submit research and development projects in the area for funding to the national and international organizations.
- Coastline is very close to the campus, where research projects on coastal agriculture, including Saline Agriculture can also be submitted to the funding agencies for financial support.
- An industrial city HUB is also close to the campus, where students can be easily absorbed.
- Awareness seminars and workshops can also be organized for the growers of the area on production technology of various field crops, including the importance of soils.
- The only University in the area, where it can flourish and develop well, without any competition of other institutions.

Major Threats

- Inadequate academic/infrastructure facilities may discourage the enrolment of new students in the department.

Actionable Recommendations

- Induction of permanent/regular highly qualified and well experienced faculty members on upper positions, including Associate Professor and Professor (as per HEC composition formula 1:1:2:2).
- Appointment of experienced technical and support staff for the department.
- Organizing trainings/workshops for the existing support and technical staff for capacity building.
- Shifting of the department from the old textile building to new one as specified.
- Purchase of equipment for research and teaching labs.
- Provision of Information Technology and computing facilities, access to HEC digital library, textbooks and reference material for department.
- Provision of committee/conference room and separate faculty/staff offices.
- Counseling and encouraging students by offering scholarships to opt Soil Science as major subject.
- Organize field visits for students and faculty members.
- Encourage and support faculty members to conduct research and participate in national and international events, including conferences, seminars, symposia, etc.
- Sufficient budget allocation for the department, in various components/heads.

Final Recommendation

After detailed external evaluation, the AIC constituted by the NAEAC concluded that the Graduate Degree Program offered the Department of Soil Science, Faculty of Crop and Plant Sciences, LUAWMS hardly meets any of the four major criteria laid down by the Council/HEC. Hence, it is assigned only 56 percent score and is placed in category Y2. Finally, the AIC recommends that the university authorities should make serious efforts to upgrade resources and facilities for the department. The AIC further decided that the Graduate Degree Program offered by the Department of Soil Science should be re-evaluated by the Council after at least one year.

Annexure-I**Strength and Quality of Faculty**

Faculty Strength (Number)	Faculty Qualification		Faculty Positions				Student- Teacher Ratio
	Ph.D	Non-Ph.D	Prof	Associate Prof	Assistant Prof	Lecturer	
3 (1 on study leave)	1	1	-	1	2	0	1:5

Annexure-II**Enrollment of Students in B.Sc. and M.Sc. (Hons) Spring Semester, 2014**

Degree	Semester								Total
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	
B.Sc. (Hons)	0	0	0	0	0	0	8	0	8
M.Sc. (Hons)	2	0	0	0	0	0	0	0	2
Total									10

Annexure-III

List of Equipment

Sr#	Name of Equipment	Quantity	Specification
1	Centrifuge Machine	2	Model EBA20, MSE
2	Kjeldahl apparatus	1	Macro kjeldahl digestion and distillation operates combine model k113/26
3	Flame photometer	1	Jenway model PFP7 Flame photometer
4	Dryoven	1	Stabil-Therm Gravity oven
5	Spectrophotometer	1	BMS UV-2800
6	Ammonia detector	1	For detecting ammonia
7	Moisture tester	1	Thomas Ashworth
8	Irro meter (Tentiometer)	1	Teg. U.S. PAT Off
9	Hot plates magnetic stirrer	2	Daihan Scientific Wise Stir & Wise Therm MSH 20D
10	Pester and mortar	1	Grinding of soil sample
11	Chloride meter	1	Model PCLM3
12	Soil testing kits	4	Used for soil testing in field

Annexure-IV

Books on Soil Science

S. No	Book Name	Author or Editor Name
1	Agriculture of Pakistan challenges and remedies	Prof. Dr. Sardar Riaz Ahmed khan
2	General agriculture 6 th edition	Dr. Muhammad Akhtar Abbas
3	Plant and Soil water relationships, a modern synthesis	Paul J. Kramer
4	Plants & Environment	R.F Daubenmire
5	Principles and Methods of Plant Molecular Biology, Biochemistry and Genetics	Pratibha Devi
6	Agriculture Microbiology	P.k Biswas
7	Plant Life	Lorus J. Milne
8	Aquarium plants	Barry James
9	Introduction to Soil & dam Engineering	Prof. Shaukat Ali Khan
10	Land forms and maps	D.F.E. Russell