Annual Report

Academic Year 2011 -2012

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Department of Applied Sciences (DAS) Annual Report
Academic Year 2011 – 2012

Part 1. Introduction

The Department of Applied Sciences is the first established department in the Sultanate of Oman. The department has undergone tremendous changes in the past 26 years. It started initially offering a diploma to School Laboratory Technicians who were taught basic biology, chemistry, physics and geology. Though the School Laboratory Technicians Diploma is currently being offered, the department saw a need of keeping up to date with the vast technological knowledge and competencies of the world around us. For this reason, an additional Diploma was introduced and this was known as the "Omani National Diploma" (OND) in majors such as Chemistry and Biology. However, during the past 5 years, the department felt the need of setting a more strategic direction in involving and linking with the private sector to develop courses to cater for the Omani industry. Based on this, the Science department became known as the "Department of Applied Sciences" entailing a whole new curriculum specializing in the "Application of Scientific Knowledge" which differs from fundamental sciences and provides students with an education based on the latest technological advancements.

At present, the department is running two academic degree programs namely, Applied Biology and Applied Chemistry with three exit Levels (Diploma, Higher Diploma and Baccalaureate Technology). In addition to the two degree programs, the department is also running the Physics Unit. The Department of Applied Sciences is also a service department for the Engineering and Pharmacy students. Moreover, the two-year School Laboratory Technician Program which prepares school technicians is also managed by the department in collaboration with the Ministry of Education.

The department has a total of 98 staff members which includes administrators, teaching and support (laboratory technician) staff. It has an annual population of 2,087 students registered in the two degree programs, Applied Chemistry and Applied Biology and 43 students in the School Laboratory Technician Program. It is also catering annually to almost 3,100 engineering and 30 pharmacy students who are taking Chemistry and Physics courses in the department. The average ratio between lecturers to students is 1:23.

This report summarizes and highlights the accomplishments of the Department of Applied Sciences for Academic Year 2011 – 2012 which are basically anchored on the affirmation and recommendations of Oman Academic Accreditation Authority (OAAA) and on the strategies that are explicitly pointed in the operational plan of the department. Pertinent data and documents are carefully selected and included in this report to substantially support and give merit to the claims and information contained therein.

Report Summary

Part 2. Report Summary

The following points briefly summarize the achievements of the department as far as the implementation of the Operational Plan of the Department of Applied Sciences for 2011 – 2012 is concerned.

Governance and Management

- **The mission of the Department of Applied Sciences is to provide the individual student with technical know-how on scientific studies, critical thinking and scientific communication and skills that can contribute effectively to the ongoing economic prosperity of the Sultanate of Oman.**

- **The department has a total of 98 staff members, 69 of which are lecturers while 29 are laboratory technicians. Two of its Omani lecturers are finishing their Ph.D. program in United Kingdom.**

- **The department is currently offering 2 specializations namely, Applied Biology and Applied Chemistry and will soon open three more specializations namely, Environmental Sciences, Biotechnology and Industrial Hygiene/Health and Safety Environment. The department is also running the Physics Unit and the School Laboratory Technicians Program in collaboration with the Ministry of Education.**

- **The department has an annual student population of 2,087 who are registered in Applied Biology and Applied Chemistry and 43 students in School Laboratory Technician Program**

- **The department serves as service department to Engineering and Pharmacy as it caters annually to approximately 3,100 Engineering and 30 Pharmacy students.**

- **The average ratio of lecturers to students is 1:23.**

- **Majority of the 21 recommendations of OAAA has been fully implemented, if not partially. Eight out of ten of the affirmations have also been implemented.**

- **The department is maintaining a webpage in the college website and it is regularly updated. The webpage is the department's medium in reaching out to students, alumni, parents, industries and other stakeholders in terms of information dissemination on the activities, updates, development and plans of the department.**

- **The department has successfully conducted the following academic and social activities as evidenced by the active participation of concerned students and or staff and, results of the evaluation:**

- **Orientation / induction of New Student Intake**
- **Seminar on Item Analysis**
- **In-house research presentation**
- **Social gathering (get together and farewell parties)**
- **General meeting and awarding of certificate of recognition to deserving staff members**
- **Seminar – workshop on health and safety**
- **Hosting of an activity in celebration of International Year of Chemistry**

- **The department has conducted the following evaluations by using the internally prepared evaluation instruments:**
  - **Management Evaluation of the lecturers and technicians**
  - **Evaluation of the lecturer's performance in the classroom by the HoS, HoD or her representative and senior lecturer**
  - **Evaluation of the teacher by the students**
  - **Evaluation of the laboratory technician by the HoS, technicians' supervisor and senior lecturer**
  - **Course Evaluation by the Staff**
  - **Program Evaluation by the graduating students, alumni, staff and industries**
  - **Evaluation of Department Activities**
    - **New intake orientation**
    - **Seminar on Item Analysis**
    - **Seminar on Health and Safety**

- **The evaluation instruments for the appraisal of lecturers and laboratory technician has been computerized through the help and support of ETC and it is uploaded in the department's webpage.**

Student Learning by Coursework Program

- **Majority of the courses in the department are using the e-learning portal. Students as well as staff were urged to maximize the use of the portal**

- **The department submitted to the Directorate General of Occupational Standards & Curriculum Development (DGOS &CD) its proposal to align the graduate attributes to the topics and learning outcomes in the course delivery plan.**

- **Student leaders are actively spearheading and involved in Science Club activities**

- **Lists of professional bodies where staff and students can be members were uploaded in the department's webpage**

Academic Support Services

- **The department has acquired new textbooks, reference books, equipments and will soon have additional laboratories that are funded by the Ministry of Manpower.**

- **Training on the use of e-learning portals and its features have been conducted in collaboration with ETC**

- **A seminar on academic advising was conducted by the Advising Committee**

- **Three lecture rooms in addition to several laboratory rooms have been installed with LCD projector, screen and desktop computer**

- **The department has acquired new laboratory equipments for Biology / Chemistry and Environmental Sciences through Liquefied Natural Gas (LNG) funding.**

Student and Student Support Services

- **Session on intrusive advising has been conducted**

Staff and Staff Support Services

- **Clear job description and requirement for candidates has been established in department's manual of job descriptions**
- **DAS Sub manual will soon be finalized and used as induction manual and reference for internal and external audit**

Description

Part 3.

3.1.1 Description

A) VISION-MISSION OF THE DEPARTMENT

Vision

The vision of the Department of Applied Sciences is to become the choice for techno-science education, dedicated to produce graduates that are scientifically and technologically advocates for the national economic development.

Mission

The mission of the Department of Applied Sciences is to provide the individual student with technical know-how on scientific studies, critical thinking and scientific communication and skills that can contribute effectively to the ongoing economic prosperity.

B) GOALS, OBJECTIVES AND OUTCOMES OF THE DEPARTMENT

Goals:

- Produce nationally and internationally recognized qualifications in Applied Chemistry, Applied Biology and Environmental Science programs.
- Provide a broad-based educational experience to meet the challenges of a rapidly changing working environment.
- Create, develop and deliver new and innovative courses for employment in professional practice/ progression to graduate studies.
- Foster strong relations with the local industries and government departments in order to produce graduates that meet the market demand.

Objectives:

- Provide the student with scientific studies that underpin the applied aspects in the above specializations.
- Provide the opportunity for a wide range of topics in science that are intellectually challenging.

- Provide a range of skills in critical thinking, analytical methods, scientific communication and IT as well as developing a deep understanding of at least one science discipline.
- Provide the student with personal qualities and professional ethics essential for their career development.

- Develop in the student the ability to function and communicate through writing an oral presentation and work effectively as an individual and in a team.

- Encourage independent and creative thinking.

Outcomes:

Graduates of the Department of Applied Sciences will have the ability to:

- apply knowledge and technical skills to play a wide range of roles in industry and government positions.

- identify challenging problems in the workplace and synthesize solutions for them.

- conduct feasibility studies of projects for a range of industries.

- function and communicate as an individual and in a team to accomplish assigned task and objectives.

- demonstrate ability to proceed directly to the work environment without incurring any time or expenses in further training.

- apply the professional and ethical responsibilities related to Science profession.

- continue independent life-long learning, pursuit of graduate studies and professional development.

C) Academic Programs of the Department

The department is currently running two academic degree programs namely; Applied Biology and Applied Chemistry with three exit Levels (Diploma, Higher Diploma and Baccalaureate Technology). In addition to the two degree programs, the department is also running the Physics Unit. The two-year School Laboratory Technician Program which prepares School Technicians is also managed by the department in collaboration with the Ministry of Education.

One additional program, Environmental Sciences will officially start in 2012 – 2013 while two more will soon follow, namely, Biotechnology and Industrial Hygienist and Health/Safety

Environment to meet the demands of the economically growing Sultanate of Oman. Brief descriptions of the department's current and soon to start programs and existing academic unit are laid down below:

Applied Biology (Biotechnology) Specialization

Applied Biology is taught as a specialization offering three qualifications, diploma, higher diploma and B-Tech. A market study conducted in 2008 revealed that this program should offer more courses that relate to restoration and preservation, production and manufacturing of biological components and food technology. For this reason, the section has been actively engaged in designing a whole new program entitled "Biotechnology" to suit the market needs in order to prepare Oman in the future should the oil revenues decrease or run out completely. The study is expected to complete within a few months and submitted to the board of trustees by the end of 2011. The human and physical resources are currently available to run this program. Once it is approved and running, the "Applied Biology" program will be phased out gradually. It is worth noting here that LNG (Liquefied Nitrogen Gas) has donated funds for the purchase of equipment to support the "Biotechnology" program which are expected to arrive within the next few months (Tender 61/2010). The Ministry has also floated Tender 3/2011 to renovate a biology/chemistry laboratory specifically for student's biotechnology projects.

Applied Chemistry Specialization

Applied Chemistry is taught as a specialization offering three qualifications, diploma, higher diploma and B-Tech. This specialization is well equipped and designed to meet the ongoing market needs, however, there is more room for improvement. Students especially males have a 100% record of obtaining jobs. Applied Chemistry specialization caters also to the Chemistry course of the Pharmacy department.

It is worth noting here that LNG has donated funds for the purchase of equipment to support students projects which are expected to arrive within the next few months (Tender 63/2010). The Ministry has also floated Tender 3/2011 to renovate a biology/chemistry laboratory specifically for student's projects.

Environmental Sciences Specialization

This specialization is expected to run as soon as the laboratories and equipments are available. It will be taught as a specialization offering three qualifications, diploma, higher diploma and B-Tech. The program was set by experts representing Oman's top Industries expected to provide jobs for many graduates. It is worth noting here that LNG has donated funds for the purchase of equipment to support students projects which are expected to arrive within the next few months (Tender 60/2010). The Ministry has also floated Tender 3/2011 to renovate an Environmental students and instrumentation laboratories specifically to cater for this program.

Industrial Hygiene/Health and Safety Environment Specialization

The above program has been approved by the Board of Trustees in 2010 to be implemented as a separate section entitled "IHSE". This program is expected to offer the following qualifications: Diploma in Safety to produce Safety Technicians; Bachelor's Degree in Industrial Hygienist and Bachelor's degree in Health, Safety and Environment. It is also expected to offer 3000 jobs for male graduates as per the results of the market survey conducted in 2009. This program is expected to run in January 2012 if the appropriate human and physical resources are provided before January 2013.

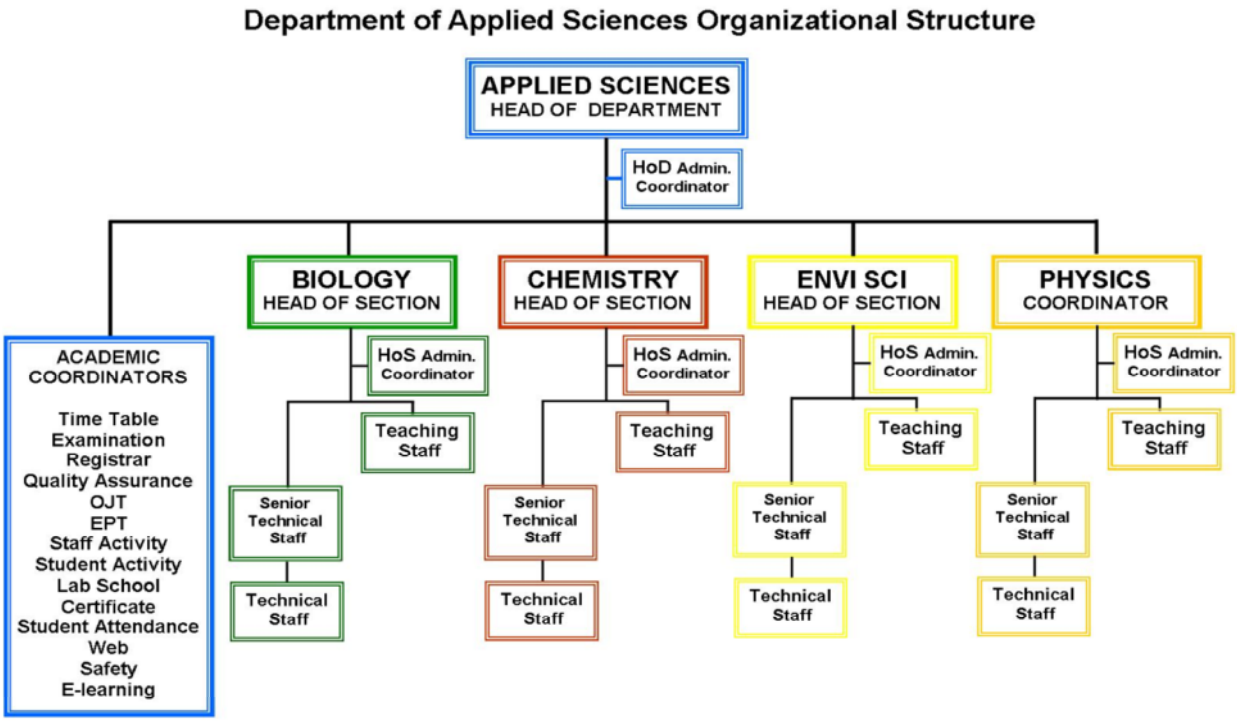
Laboratory Schools Specialization

This specialization is catered for the needs of the Ministry of Education to graduate school laboratory technicians serving schools all over Oman. The specialization offers a Diploma qualification. It offers courses such as biology, chemistry, physics and lab safety. The students also as part of their graduation requirement have to undergo training in schools. This is the only current specialization in the department that enrolls one intake of students per year compared to the other specializations which enroll two intakes of students per year.

Physics Unit

Physics is not offered as a specialization to science students. It is run as a program consisting of basic physics courses to cater for the needs of the current specializations such as biology, chemistry and environmental sciences. It also serves the Engineering department for their students in the first year. Recently, the Ministry has floated Tender 39/2011 for the purchase of equipment and Tender 40/2011 for the renovation of its laboratories in order to develop the unit.

D) The Department's Organizational Structure



The Department of Applied Sciences (DAS) Council is the governing body of the department and it is led by the head of the department (HoD) while the heads of sections (HoS) and units (HoU) constitute the members. Decisions that are to be implemented departmental-wide are deliberated upon and emanate from the DAS Council to ensure democratic process, check and balance and owning. The job descriptions of each position in the organizational structure are vividly pointed out in the DAS Quality Sub Manual for transparency purposes and to serve as reminder of the boundary and jurisdiction of power, authority, duties and responsibility of each position.

Resources

3.1.2 Resources

Human Resources

A) Staff

Table 3.1 - Total number of lecturers per specialization / unit.

NO.	SPECIALIZATION / UNIT	TOTAL NO. of LECTURERS
1	Applied Biology	22
2	Applied Chemistry	28
3	Environmental Science	5
4	Physics	15
Grand Total		69

Table3.2 - Total Number of Laboratory Technicians per section/unit

NO.	SPECIALIZATION / UNIT	TOTAL of LAB. TECHNICIANS
1	Applied Biology	10
2	Applied Chemistry	13
3	Environmental Science	1
4	Physics	5
Grand Total		29

Table 3.3 – Staff Qualifications

DEGREE	NO. OF STAFF (Omanis and non-Omanis)	IN-PROGRESS (OMANI STAFF)
Bachelor	13	
Master	41	
Doctoral	33	2
Others, please specify Diploma	8	

* For the In-Progress column, specify the Omani staff members sent for further studies
- Suad Soud Al-Kindi (Chemistry)
- Wafa Mustafa Al-Lawati (Chemistry)

B) Students

Table 3.4A – Number of Active Students in diploma 1 and each specialization per year level and semester

SEMESTER	STUDENTS IN DIPLOMA 1	SPECIALIZATION	STUDENT'S PER LEVEL		
			DIPLOMA 2	HIGHER DIPLOMA	BACHEL OR
First	196	Chemistry	121	83	73
			135	68	82
Second	298		124	60	84
		TOTAL	380	211	239
Third	365	Biology	42	55	41
			45	49	41
TOTAL	859		38	44	43
		TOTAL	125	148	125

Table 3.4B – Number of students in School Laboratory Technician Program per semester

SEMESTER	TOTAL NO. OF STUDENTS IN SCHOOL LABORATORY TECHNICIAN PROGRAM (ACADEMIC YEAR 2011 – 2012)
Semester 1	43
Semester 2	43
Semester 3	43

Table 3.5 – Number of students dismissed, under probation, who are taking on the job training (OJT) and who graduated in diploma 1 and in each specialization per semester

SPECIALIZATION	SEMESTER	DISMISSED	PROBATION	OJT	GRADUATION	TOTAL
Diploma – Year 1	First	11	24	-	1	
	Second	8	39		-	
	Third	*	55		*	
Total		**23****	**118****		**1****	
Applied Biology	First	2	5	10	22	
	Second	1	8	18	9	
	Third	*	11	17	*	
Total		**3****	**24****	**45****	**31****	
Applied Chemistry	First	3	11	19	47	
	Second	3	18	33	17	
	Third	*	19	23	*	
Total		**6****	**48****	**75**	**64****	
Grand Total		**	**190**	**120**	**	

* The number of students is not known yet

** The number of students may increase/change by the end of the Academic Year 2011-2012

Table 3.6 – Total Number of students from Engineering and Pharmacy Departments being served by the Department of Applied Sciences per semester

PARAMETERS	TOTAL NO. OF STUDENTS		
	SEMESTER 1	SEMESTER 2	SEMESTER 3
Total Number of Engineering Students who took Fundamentals of Chemistry in Academic Year 2011- 2012	400	534	18
Total Number of Engineering Students who took Physics 1 in Academic Year 2011- 2012	350	373	418
Total Number of Engineering Students who took Physics 2 in Academic Year 2011- 2012	355	373	270
Total Number of Pharmacy Students who took Fundamentals of Chemistry in Academic Year 2011- 2012	25	4	*

* The number of students is not known yet

Table 3.7 - Staff to Student Ratio in the Department of Applied Sciences

SPECIALIZATION / UNIT	SEMESTER	DIPLOMA 1	DIPLOMA 2	HIGHER DIPLOMA	BACHELOR
Chemistry	First	1:33	1:29	1:22	1:21
	Second	1:36	1:25	1:19	1:20
	Third	1:28	1:22	1:20	1:18
Biology	First	1:30	1:17	1:19	1:16
	Second	1:27	1:20	1:19	1:17
	Third	1:26	1:13	1:13	1:14
Physics (Common)	First	1:35	1:23		
	Second	1:27	1:19		
	Third	1:42	1:20		
Average ratio	**1:23**				

Physical Resources

Table3.8 - Current physical resources (laboratories, preparation rooms and stores) of the Department of Applied Sciences

Physical Resource	Room No.	Physical Resource	Room No.
Biology Laboratory 1	M303	Chemistry Laboratory – NL1	144
Biology Preparation Room	M304	Chemistry Preparation Room	143
Biology Laboratory 2	M305	Chemistry Laboratory – NL2	142
Microbiology Laboratory	M102	Physics Store	M205
Biology Store	M302	Physics Laboratory 1	M206
Chemistry Laboratory 1	M106	Physics Preparation Room	M208
Chemistry Preparation Room	M107	Physics Laboratory 2	M209
Chemistry Laboratory 2	M108	Book Store	M219
Analytical Laboratory	M104	Chemical store	C102
Additional (Funded by the Ministry of Manpower)			
Biology / Chemistry Preparation Room	Under renovation	Environmental Sciences Teaching Laboratory	Under renovation
Biology / Chemistry Instrumentation Room	Under renovation	Environmental Sciences Preparation Room	Under renovation
		Environmental Sciences Instrumentation Room	Under renovation

Table 3.9 - Staff rooms of the Department of Applied Sciences

S.No	Room Number	Room Occupant	Room Size	Number of Staff Occupying
1	M215	Head of Department	Large	2
2	M217	Lecturers	Large	8
3	M115	Lecturers	Medium	6
4	M116/M117	Lecturers	Large	8
5	M118	Lecturers	Large	8
6	M119	Examination Committee	Medium	6
7	M241	Head of Section - Chemistry	Small	2
8	M242	Head of Section - Biology	Small	2
9	M247	Head of Section - Envi Sci	Small	1
10	M202	Unit Coordinator - Physics	Small	2

11	M203	Technicians	Small	3
12	M313	Lecturer	Medium	4
13	M149	OJT/EPT Coordinators	Small	2
14	M151	Lecturers	Large	11
15	M136	Registrar/Timetable Coordinators	Large	5
16	M137	Asst Lecturers	Large	3
17	M135	Technician Rooms	Large	8 at a time

Table 3.10 - Recently acquired equipments of the different sections / unit of the department of Applied Sciences

Applied Biology

NO.	DATE RECEIVED	DESCRIPTION
1	27.10.11	Electronic stethoscope
2	27.10.11	Hematocrit centrifuge with reader
3	27.10.11	Digital oral thermometer
4	27.10.11	Fat-o-meter
5	27.10.11	Reaction timer
6	27.10.11	Blood glucose meter
7	27.10.11	Spirometer
8	27.10.11	Otoscope set
9	27.10.11	Ophthalmoscope set
10	27.10.11	Tuning fork set
11	27.10.11	Touch-test two-point discriminator
12	27.10.11	Urinometer
13	27.10.11	Extraction apparatus set up
Additional (from LNG)		
1	AY 11/12	Incubator shaker
2	AY 11/12	Vortex
3	AY 11/12	Hot plate (magnetic stirrer)
4	AY 11/12	pH meter
5	AY 11/12	Hybridization oven
6	AY 11/12	Thermal cycler
7	AY 11/12	Classic thermal cycler
8	AY 11/12	Micropipettes
9	AY 11/12	Transilluminator UV light
10	AY 11/12	Microcentrifuge
11	AY 11/12	Centrifuge with cooling system
12	AY 11/12	Mini-bio-rad cell for electrophoresis
13	AY 11/12	Wide-bio-rad cell for electrophoresis
14	AY 11/12	Haematology analyzer

15	AY 11/12	CO2-incubator
16	AY 11/12	Microplate reader
17	AY 11/12	Microplate shaker
18	AY 11/12	Ultrasonic processor for low-medium applications with accessories
19	AY 11/12	Filtration system
20	AY 11/12	Kjeldahl digestion system
21	AY 11/12	Kjeldahl distillation unit
22	AY 11/12	Rotary evaporator
23	AY 11/12	Analytical standard weight balance
24	AY 11/12	Protein/nucleic acid blotting with accessories
25	AY 11/12	Plant growth chamber
26	AY 11/12	Extraction apparatus
27	AY 11/12	Carbon dioxide monitor

Applied Chemistry

NO.	DATE RECEIVED	DESCRIPTION
1	31/10/2010	Melting point apparatus, Stuart Model SMP-10
2	31/10/2010	Conductivity meter, Mettler Toledo Model EL 30
3	31/10/2010	Laboratory Trolley
1	31/12/2011	Blender - 2 units
2	31/12/2011	Blower, Hot air- 2 units
3	31/12/2011	BOD incubator
4	31/12/2011	Calorimetric thermometer
5	31/12/2011	Centrifuge, benchtop
6	31/12/2011	Colorimeter, digital- 8 units
7	31/12/2011	Desktop PC system- 5 units
8	31/12/2011	Digital ultrasonic cleaning bath
9	31/12/2011	Ducted chemical storage cabinet
10	31/12/2011	Ductless chemical storage cabinet- 4 units
11	31/12/2011	Heating mantle, 250 ml- 10 units
12	31/12/2011	Laboratory oven
13	31/12/2011	Melting point apparatus, digital- 5 units
14	31/12/2011	Microwave digestion system
15	31/12/2011	Photocopying machine
16	31/12/2011	Printer, dot matrix, 80 column- 3 units
17	31/12/2011	Printer for PC system- 5 units
18	31/12/2011	Syringe cleaner, heated
19	31/12/2011	Ultrapure water system

20	31/12/2011	Vacuum pump FTIR
21	31/12/2011	Water bath, boiling, regulated, 6 holes- 4 units

Environmental Sciences

NO.	DATE RECEIVED	DESCRIPTION
1	AY 11/12	One (1) Gas Chromatography-Mass Spectrometer
2	AY 11/12	One (1) Atomic Absorption Spectrophotometer
3	AY 11/12	One (1) UV-Vis Spectrophotometer
4	AY 11/12	One (1) High Performance Liquid Chromatography
5	AY 11/12	Three (3) Oxygen Meter
6	AY 11/12	Two (2) pH Meter
7	AY 11/12	One (1) BOD Testing Apparatus
8	AY 11/12	One (1) One (1) PC Compact COD
9	AY 11/12	Three (3) Salinity Meter
10	AY 11/12	One (1) Digital Sound Level Meter
11	AY 11/12	One (1) Automatic Flow Control Hi Vol Air Sampler
12	AY 11/12	Two (2) Analytical Balance
13	AY 11/12	Three (3) Hygrometer
14	AY 11/12	Two (2) Soil Test Kit
15	AY 11/12	Three (3) Plankton Collection Net
16	AY 11/12	Three (3) Pocket Weather Tracker
17	AY 11/12	Two (2) Light Meter
18	AY 11/12	Five (5) Compass barometer
19	AY 11/12	One (1) Drying and Sterilizing Oven
20	AY 11/12	One (1) Fume hood Cover
21	AY 11/12	Five (5) Sedgewick Rafter Slide and Whipple Grid
22	AY 11/12	Three (3) Square Grid Quadrant
23	AY 11/12	One (1) Total Organic Carbon Testing Apparatus
24	AY 11/12	One (1) Turbidity Meter
25	AY 11/12	Five (5) Transect Line
26	AY 11/12	Three (3) Thermometer
27	AY 11/12	Two (2) Flow Meter
28	AY 11/12	One (1) Epiflourescent Microscope
29	AY 11/12	One (1) CO Detector
30	AY 11/12	One (1) Distillation Apparaus
31	AY 11/12	One (1) Refrigerator
32	AY 11/12	Three (3) Compound Microscope
33	AY 11/12	One (1) Deionizer

Physics Unit

NO.	DATE RECEIVED	DESCRIPTION
1	27/09/2011	Digital Stopwatch
2	27/09/2011	Hooke's Law Apparatus
3	27/09/2011	Power Signal Generator
4	27/09/2011	Power Supply
5	27/09/2011	Set of Pliers
6	27/09/2011	Set of Screwdrivers
7	27/09/2011	Speaker
8	27/09/2011	Boss Head
9	27/09/2011	Clamp
10	27/09/2011	Immersion Heater
11	22/08/2011	LCR Meter
12	28/09/2011	Boyle's Law Apparatus
13	13/12/2011	Vernier Caliper
14	23/05/2011	Optical Bench with all Accessories
15	23/05/2011	Pulley Double
16	17/07/2011	Analog Stopwatch
17	17/07/2011	Retort Stand Base
18	17/07/2011	Boiling Bath
19	Included in Tenders 39 /2011 & 40/2011for Laboratories renovations and supply of equipment	Laboratories renovations and supply of equipment to perform the following experiments. <u>Mechanics:</u> · Hooke's Law · Newton's Laws of Motion · Friction · Centripetal Force · Pendulum · Projectile Motion · Conservation of Momentum · Impulse · Archimedes Principle · Rotational Inertia · Conservation of Angular Momentum · Universal Gravitational Constant · Harmonic Oscillation · Conservation of Energy Materials Stress-Strain <u>Thermodynamics</u>

		· Ideal Gas Law · Electrical Equivalent of Heat · Heat Engine Cycle · Blackbody Radiation <u>Waves, Light and Optics</u> · Waves · Vibrating String, standing waves · Polarization of Light, polarimeter · Interference and Diffraction of Light · Atomic Spectra · Refractive index by prism <u>Electricity and Magnetism</u> · Resistivity · Ohm's Law · LRC Circuits · LRC Resonance · Faraday's Law · Charge of an Electron · Magnetic Force on Wires · Magnetic Fields of Coils · Earth's Magnetic Field · Speed of Light · Coulombs Law · Hall Effect <u>Modern Physics</u> · Measurement of Alpha, Beta, & Gamma Rays Emissions · Measurement of Half-life · Compton Scattering · X-ray Fluorescence

Status of the Implementation of DAS Action Plan on the Recommendations and Affirmations of OAAA in their Audit Report

3.2.1 Status of the Implementation of DAS Action Plan on the Recommendations and Affirmations of OAAA in their Audit Report

The current status or outcomes of the actions that have been taken by the Department of Applied Sciences on the recommendations and affirmations stipulated in the published report of Oman Academic Accreditation Authority (OAAA, formerly known as Oman Accreditation Council - OAC) on January 23, 2010, which were based on the results of their audit visit on March 22 – 24, 2009, are summarized in the two succeeding tables below. Comments or remarks are also included for some of the items.

Table 3.11 – Status of the implementation of DAS action plan on the recommendations of OAAA

Recommendations	Proposed Actions	Current Status/ outcomes	Remarks
Governance and Management			
1. The Oman Accreditation Council recommends that the Higher College of Technology develop and implement a mechanism for evaluating the effectiveness of its governance and management systems which results in clear action plans	1. Evaluation tools for Deans, Assistant Deans, HoDs / HoCs, HoSs, and Course Coordinators must be prepared and approved by the College Board. 2. Evaluation of the top management and middle managers of the College should be regularly done and analyzed. 3. Results should be submitted to central committee for analysis and recommendations	The Department of Applied Sciences had internally designed an Evaluation Tools for HoS and Course Coordinators which were reviewed by the DAS Council.	The Evaluation tool was submitted to QAC. Meantime, the different sections and unit of the department are given the discretion as to when it should be used while waiting for an approved evaluation tool for such purpose, from QAC
2. The Oman Accreditation Council	1. Propose changes to the approval process to the MoM.	Approval process in the department follows what is implicitly	The Organizational Structure of the

recommends that the Higher Colleges of Technology review its current approvals process to accelerate the decision-making process		presented in the DAS Organizational Structure. However, major decisions that affect the processes and affairs of the entire department emanates from the DAS Council after deliberation and discussion in DAS regular meetings and are disseminated to staff through e-memo or e-mails.	department is included in this report DC decisions are systematically recorded and filed in the Z Drive of the department and as hard copies by the DAS Council Recorder of minutes of meeting. To avoid delay and possible disruptions of processes, the DAS Council recorder of minutes of meeting, is given the task and authority to follow-up the status of DC Decisions from the person concerned or remind him or her before the deadline of submission is reached.
3. The Oman Accreditation Council recommends that the Higher College of Technology develop and	1. A session on how to conduct strategic planning and operational planning and on how to write Strategic Plans and Operational Plans,	The Department of Applied Sciences followed the procedure and format in writing Operational Plan that were established by QAEC, however, these	Administrators and staff of the department are involved in the preparation of the plan through their

implement a systematic approach to operational planning for all academic and administrative departments	should be scheduled and conducted by QAD 2. Full staff participation should be targeted in operational planning. 3. The format of operational plans and the procedures followed in developing and approving them need to be unified	were recently revised by the department in compliance to the revised format proposed by the current QAC as recommended by QAD.	feedback and suggestions sent via e-mail.
4. The Oman Accreditation Council recommends, as the Higher College of Technology will be developing its own sub goals for the Strategic Plan, that appropriate financial planning systems are developed and implemented in order for the College to make independent decisions in line with its strategic direction	1. The current financial planning system should be reviewed 2. The college should propose changes to the current financial planning system which give more autonomy to the college in the planning of its finances ***Suggestion*** 2)The college should propose changes to the current financial planning system which give more autonomy to the college in the planning ***and allocation of resources.*** ***3) There should be an explicit link between the strategic planning, student intake and financial planning so that resources are used to address and further key strategic objectives***	Not applicable to the department	

5. The Oman Accreditation Council recommends that the Higher College of Technology establish a transparent and systematic process to deal with student grievances that is documented and clearly communicated to all staff and students	1. Student grievances policy and procedure on handling student grievances should be established. 2. The new policy and procedures should be included in each department's student handbook. 3. The said policy and procedure should be discussed during student and staff induction / orientation	Student grievances are directly presented to the HoD or HoS by the student himself or herself. The HoD / HoS conducts an internal investigation to check the validity and veracity of the complaint / grievance. Results of investigation are discussed and decided upon in DAS Council meeting. There is no documented procedure or policy for such. However for questions and complaint related to marks / grades, an established and documented procedure from the Student Academic Appeals Committee of the College is being implemented by all the departments in the College.	Complaints / questions regarding marks / grades are systematically addressed by following an established procedure which starts with the proper filing of a filled-up appeal form by the concerned student to the Department's Examination Committee. The appeal is reviewed and deliberated upon by a committee convened by the Examination Committee. Results of student appeal on marks / grades are posted in the Department's webpage of the College website.
Student Learning by Coursework			
6. The Oman Accreditation Council recommends that the Higher College	1. Curriculum committees should be created in all departments. 2. The curriculum committee should	The Department submitted its feedback / suggestions on the Delivery Plan format, Learning Outcome	.

of Technology ensure that the course content of all programs is clearly linked to the stated learning outcomes and the College's graduate attributes and greater efforts are made to communicate these to students	review the exiling program and curriculum of the department 3. The curriculum committee should re-align the curriculum and course delivery plans to the learning outcomes and graduate attributes identified by the college. 4. The curriculum committee must re-orient the staff on the revised program curriculum and course delivery plan and ensure the new outcomes and attributes are communicated to the students.	mapping sheet and assessment plan proposed by the Office of the Directorate General of Occupational Standards and Curriculum Development (DGOS & CD) aligning the graduate attributes to the learning outcomes and topics of the course. Mapping of learning outcomes to lectures, practicals and assessments is regularly done by lecturers. A course evaluation was conducted using an internally designed evaluation tool as preparation for the planned revision of delivery plans of the different courses, in order to comply with the recommendation of OAAA.	
7. The Oman Accreditation Council recommends that the Higher College of Technology develop and implement a consistent approach to dealing with cases of plagiarism and ensure	1. A policy on plagiarism should be formulated by the QAD. 2. The policy on plagiarism should be included in the student handbook and staff induction manual. 3. Discuss the plagiarism policy during student	The policy on plagiarism is incorporated in the delivery plan. In addition, the department has disseminated through e-mail to all staff the Policy on Plagiarism that was forwarded by MOM through QAD with a clear directive from the HoD that the policy	

that all students are fully aware of academic conventions	and staff induction. 4. The policy should be implemented by all the departments / units in the College.	must be strictly implemented.	
8. The Oman Accreditation Council recommends that the Higher College of Technology review its current 'On the Job Training' provision in order to ensure that it is consistently handled by all departments and that its effectiveness is evaluated by all stakeholders	1. Review current OJT provision 2. Disseminate changes to all departments 3. Devise standardized evaluation tools for OJT targeting all stakeholders	The standardized OJT Manual that contains the procedure and assessment for OJT has been reviewed and comments have been sent to the deanship.	
9. The Oman Accreditation Council recommends that Higher College of Technology develop and implement a system for benchmarking assessment standards along with a consistent approach to external moderation	1. The departments should review their current policy on assessment and moderation and see the possibility of involving external moderators 2. Specialization Committees should identify potential external moderators or assessment benchmarks in similar programs in HEIs in the Sultanate or elsewhere. 3. Periodically review practice for improvement against feedback from	The department is currently implementing "content validation" as far as moderation of assessment is concerned, and it is done internally.	This recommendation should be discussed by the ADAA with the HoDs and decide on the mechanism on how should this be implemented

	stakeholders		
10. The Oman Accreditation Council recommends that Higher College of Technology review its current system for monitoring academic security and invigilation in order to ensure that there is consistent, rigorous approach throughout the College	1. The departments should revisit their current academic security policy and invigilation procedures. 2. Consult similar systems in other HEIs in search for good practices 3. Revise if necessary 4. Implement the policy	The department has an existing policy on invigilation and academic security. Such policy is included in the DAS submanual and it is strictly implemented. Revision has been implemented regarding mobile phones of students in the examination hall to address a grievance and issue brought out by some examination supervisors regarding this matter	
11. The Oman Accreditation Council recommends that the Higher College of Technology review the current trend with regard to students' retention and progression rates and develop corrective measures to address this problem	1. Conduct self-assessment to identify factors affecting student retention rates and progression 2. Use results to inform corrective measures 3. Implement corrective measures 4. Evaluate corrective measures through self-assessment and feedback from stakeholders	Directives from the Dean which is disseminated through the College Registrar to the Departments Registrars and subsequently to the staff regarding retention and progression of students have been implemented and they are as follows: 1) students of certificate level moving to the Diploma Level need only to pass all courses and CGPA need not be 2.0 anymore, 2) students can repeat three subjects to improve CGPA in order to move to the next level, 3) students whose CGPA is below the required GPA	

		per semester which is 2.0 can be placed up to 3rd probation). The department complies with the said directives.	
12. The Oman Accreditation Council recommends that the Higher College of Technology devise and implement a system to collect and analyze data from employers on their satisfaction with graduates in order to inform program review and development	1. The departments should develop an evaluation tool and conduct an evaluation of the performance of their graduates. 2. Respondents of the evaluation should be public entities, industries and companies where College graduates are working. 3. Result of the said evaluation should be used to inform program and course review.	Tools for program and course evaluation which were internally prepared and approved by DAS Council have been distributed; however, retrieval of responses of program evaluation takes time. Results of course evaluation by the lecturers have been summarized and they will be considered when the delivery plans of the different courses of the two specializations (Applied Biology and Applied Chemistry) and Physics Unit will be revised to comply with the requirements / specifications DGOS & CD of MoM and recommendation of OAAA.	
Staff Research and Consultancy			
13. The Oman Accreditation Council recommends that the Higher College of Technology clearly define the role of research and consultancy in its institutional vision	1. The College should clarify its standpoint regarding the role of research and consultancy in its vision 2. If research and consultancy are to play an important role in the College's vision, then sufficient	c/o CAB	

and develop a Strategic Plan to implement and support this	resources should be allocated for this change in role		
Industry and Community Engagement			
14. The Oman Accreditation Council recommends that the Higher College of Technology develop an inclusive College-wide approach to planning and managing industry and community engagement in order to fulfill the College's strategic goal in this area	1. Identify potential areas for cooperation between the College and the industry and the community at large. 2. Initiate programs and joint projects 3. Integrate such programs and joint projects in the curricula and extra-curricular activities offered in the college 4. Integrate the joint projects in the assessment system of students where appropriate	c/o CAB	
Academic Support Services			
15. The Oman Accreditation Council recommends that the Higher College of Technology review its current library facilities and IT infrastructure in order to fully support the needs of its learning community and in light of the rapidly growing student population	1. Upgrade the HCT Network Infrastructure 2. Propose for the Expansion of the HCT Library 3. Propose for the Renovation of the Student Access Center into Free Access Laboratory	c/o ETC	
Student and Student Support Services			

16. The Oman Accreditation Council recommends that the Higher College of Technology review its current provision of student support services and develop and implement a planned, systematic approach to these areas which is supported by adequate resources	1. Propose for the Procurement of resources for computer laboratories 2. Propose for the Students Photocopying /printing Management System	c/o ETC	
17. The Oman Accreditation Council recommends that the Higher College of Technology develop and implement a regular mechanism for developing action plans in response to survey findings which are shared with the College community	1. Proactively analyze the findings and recommendations submitted by legitimate survey bodies /groups. 2. Prepare and implement action plans on the findings and recommendations 3. Evaluate the implementation of the plan	c/o Office of the Assistant Dean of Administration and Finance, Assistant Dean for Student Affairs and ETC.	The Office of Student Affairs in collaboration with the Office for Assistant Dean for Administration and Finance should be responsible in the conduct of survey / evaluation on students and staff satisfaction on the support services provided by the College (i.e. canteen, clinic, hostel, library, ETC and others). Action Plan should be designed and implemented by the

			concerned unit so that the students and staff will see concrete actions on the result of evaluation
Staff and Staff Support Services			
18. The Oman Accreditation Council recommends that the Higher College of Technology develop and implement mechanisms to support long-term planning in staff and staff support services and that these are regularly monitored and reviewed	1. To identify strengths and weaknesses in long-term planning. 2. To develop mechanisms to support long-term planning in staff and staff support services. 3. To implement mechanisms to support long-term planning in staff and staff support services. 4. To monitor the implementation. 5. To review the implementation.	c/o Human Resource Unit of the Office of ADAF	
19. The Oman Accreditation Council recommends that the Higher College of Technology develop a planned, consistent and inclusive approach to staff induction, performance management,	1. To review the existing induction, performance management, professional development, promotion, severance mechanisms. 2. To design a plan for standardized processes applicable for all departments. 3. To implement all	<u>Staff Induction</u> • This is under the care of the HoS or her representative. The HoS or her representative gives orientation/ induction to the newly recruited staff member. An induction manual for this purpose is	

professional development, promotion, severance and all related areas which is implemented for all staff at all levels and is regularly reviewed	designed processes for all staff at all levels. 4. To regularly review the designed processes.	also available in the department <u>Staff Performance Management</u> • Staff (Lecturer) appraisal is regularly conducted using three evaluation tools namely, 1) Management Evaluation, 2) Lecturer in Class Evaluation by the HoD or her representative, HoS and Senior Lecturer and 3) Student Evaluation of the Lecturer and Course. Results of the appraisal are presented and discussed with the staff by the concerned HoS / Unit Head before a copy of the summary of results is provided to the staff. On-the spot evaluation or classroom observation by the HoD or HoS is also conducted when complaint / grievance from student or staff is filed orally or in writing. <u>Staff Professional Development</u>	

		• The HoD appointed a Staff Activity Coordinator who conducts Training Needs Analysis and subsequently plans staff activity based on the result of TNA and Staff Appraisal by the HoS. Planned staff activities are implemented and evaluated by the staff activity coordinator. The Staff Activity coordinator regularly sends through e-mail to all staff, invitations for training, seminars, workshops and conferences and encourages them to join or participate <u>Staff Promotion and Severance</u> • Since majority of the staff are under the employment agency, these are handled by their respective employment agency. However, meritorious performance of staff are given due recognition publicly and annually through a staff social activities or in	

		general assembly and meeting of the department, where certificates and token of appreciations are awarded / given by the HoD and HoSs.	
20. The Oman Accreditation Council recommends that the Higher College of Technology develop and implement a staff grievance system which is clearly communicated to all staff	1. To establish a staff grievance committee as a sub-team of the Human Resource Committee. 2. To define the Terms of Reference of the committee. 3. To orient the staff on the existence of a grievance committee. 4. To implement the staff grievance system.	c/o HR Unit of ADAF	
General Support Services			
21. The Oman Accreditation Council recommends that the Higher College of Technology review its internal communication and training policies in order to ensure that all members of the College community, whether English or Arabic speaking, are included	1. To evaluate the current internal communication and training policies. 2. To improve the current internal communication and training policies. 3. To ensure that all members of the College community, whether English or Arabic speaking are informed about such policies. 4. To ensure that the communication policy is consistent throughout the college and at all levels	Internal communication in the department is in English. Directives, memos and other forms of communications which are in Arabic are being translated upon the request and instruction of the HoD before they are disseminated to the staff	

Table 3.11 – Status of the implementation of DAS action plan on the affirmations of OAAA

Affirmations	Proposed Actions	Current Status/ outcomes	Remarks
Governance and Management			
1. The Oman Accreditation Council supports the Higher College of Technology's plans to develop its own sub goals in relation to the 2009-2012 Strategic Plan, adopting an approach to involve full staff participation	1. Involving the staff in developing the college sub-goals in relation to the Strategic Plan to create a sense of ownership of the plan 2. Integrating the sub-goals in the new Strategic Plan. 3. Cascading the Strategic Plan to the staff members in each department	The HoD conducted SWOT analysis in the department through the help of the HoSes and representatives from the different sections/units of the department. The results of the SWOT analysis were collected and collated by the QA Officer. The SWOT analysis of the department was presented by the HoD in the College-wide Strategic Planning Session which was conducted in May-June 2009. Discussions and deliberation were done to sort out some issues and concerns. QAEC was tasked to collate all the information and data which were used in finalizing the Strategic Plan. Representatives of Staff were requested to join the strategic planning session. The final version of the Strategic plan was cascaded to the staff for a bottom – up Operational Planning.	
2. The Oman	1. Developing an explicit Risk	A policy on risk	

Accreditation affirms that the Higher College of Technology need to incorporate risk management into its management and planning systems and supports its efforts in developing its approach to risk management	Management Policy/Plan. 2. Training staff members on Risk Management. 3. Incorporating risk management in the planning and management systems of the College . 4. Evaluating the implementation of the Risk Management policy through self-assessment and internal audits	management has been forwarded by the QAD and was disseminated to the staff of the department via e-mail	
3. The Oman Accreditation Council supports the Higher College of Technology's plans to improve the current policy management system and to ensure that it is clearly communicated and consistently implemented throughout the College	1. Standardization of documented procedures and the creation of standardized forms where applicable 2. Creating a system for policy/procedure formulation, review, and approval 3. Dissemination of new polices, procedures, regulations and rules to all staff through proper induction programs and manuals at the college and department levels. 4. Developing a standard system of internal audit procedure to ensure proper implementation of and conformation with the new policies, procedures and regulations.	The policies and guidelines that are implemented in the department are included in the DAS submanual. These policies and guidelines were forwarded to QAEC when it was in the process of developing policies and procedures for the College.	
4.The Oman Accreditation Council supports the Higher College of Technology's plans to	1. Establishing a data acquisition and analysis system utilizing multiple sources of data for the evaluation of College units/activities with a clear	New evaluation tools were developed by QAC for such purpose, however, the DAS Council decided to use them next academic	

develop and implement a robust and valid data collection and analysis system in order to improve the planning and the performance of the institution	schedule incorporated in the academic calendar. 2. Producing a document stipulating what to report in such evaluations and how to report them, ensuring that sufficient information is given in the evaluation reports about data collection methods, sample size, sampling techniques, and the types and procedures of data analysis carried out. 3. Developing a computerized feedback collection system with clear, user-friendly, and secure data collection, data storage, and data reporting procedures.	year, 2012- 2013 if they will be approved by the CAB. Meantime, the department is using the evaluation tools that are internally prepared based on what were provided by the former QAEC	
5. The Oman Accreditation Council supports the Higher College of Technology's efforts in identifying opportunities to improve the health and safety environment of the College and in developing and implementing plans to address these opportunities	1. Preparing a College-wide Health and Safety (H&S) policy document addressing the critical issues of health, safety, and environment in the college. 2. Based on the College H&S policy document, departments should develop H&S manuals outlining standard operating procedures and safety measures in their units. 3. Communicating H&S policies and manuals to all staff and students through proper induction and training programs. 4. Monitoring the implementation of H&S policies and manuals through internal audits. 5. Periodically inspecting the effectiveness and sufficiency	The department created a Health and Safety Committee (HSC) The HSC conducted an evaluation on the implementation of safety measures in the laboratories. The HSC prepared the Safety Manual and required all students to fill-up and sign the Safety Declaration Form. All documents related to safety were posted in the DAS Webpage of the College website for information dissemination.	

	of safety equipment in the college and ensuring that such equipment is maintained and deployed properly to acceptable international standards and specificatio	The Committee is monitoring the implementation of the safely manual	
Industry and Community Engagement			
6. The Oman Accreditation Council supports the Higher College of Technology's plans to strengthen and formalize the input of industry and employers through setting up external advisory boards in all departments	1. Identifying external advisors from leading employers and the industry in all department 2. Organizing events, such as workshops, symposia, and meetings with representatives from the leading employers and the industry on issues such as OJT, curriculum development and program evaluation and review. 3. Collecting information and feedback from such events for the purpose of curriculum and program development and review. 4. Setting professional specialization committees to analyze the data gathered and propose suitable implementation steps and timeframes	Inputs from industries on the academic programs are being solicited through program evaluation by industries and companies where DAS students and alumni are having their OJT and working, respectively. The department is now on the process of retrieving the responses of the industries through the OJT coordinator of the department	
7. The Oman Accreditation Council supports the Higher College of Technology's efforts to strengthen ties with its alumni	1. Establishing a central unit or team, preferably as part of a bigger marketing and public relations team, charged with the responsibility of strengthening the ties with the alumni. 2. The team will maintain and administer proper alumni database and records and organize regular alumni	HCT Alumni Portal is included in the College website. The DAS webpage is constantly updated so that students, parents and alumni of DAS and, other stakeholders will be informed of what is happening in the	

	events 3. A webpage in the College website to be dedicated to alumni to facilitate communication between them and link various alumni groups	department	
Academic Support Services			
8. The Oman Accreditation Council supports the Higher College of Technology's efforts to review and improve its current provision of academic advising in order to improve its teaching and learning processes and address the issue of student retention	1. Reviewing the existing provision of academic advising, ensuring balanced and realistic workload of teaching and academic advising duties for staff. 2. Periodically reviewing the existing policies, documents, and handbooks regulating academic advising. 3. Providing orientation and training to the academic advisors on regular basis, especially following major reviews to advising handbooks, policies or bylaws. 4. Monitoring the quality and effectiveness of academic advising through student surveys, internal audits, and careful analysis of retention rates in each department	The department had conducted a session on academic advising through the academic advising committee with the aim of improving student retention through proper academic advising. A session on intrusive advising was also conducted by the committee	
Student and Student Support Services			
9. The Oman Accreditation Council affirms that the Higher College of Technology has identified the problem of student accommodation as a key area for improvement and	1. Assessing the existing student accommodation and identifying areas for improvement. 2. Notifying the Ministry of Manpower of the current status of student accommodation and suggesting ways to improve it.	c/o ADAF	

supports the proposals submitted to the Ministry of Manpower to address this issue	3. Following up the proposals on how to improve student accommodation which have been submitted to the Ministry of Manpower in the past few years.		
Staff and Staff Support Services			
10. The Oman Accreditation Council supports the Higher College of Technology's proposal to seek greater input in the recruitment process in order to standardize the approach to the recruitment, selection and promotion of all staff	1. Delegating more responsibilities to the College Dean and HoDs in the selection and recruitment of their staff. 2. Setting minimum standards for recruitment policies, selection and screening criteria, and packages which apply to all staff	c/o ADAF	

Planning, Implementation and Results

3.3 DAS Planning, Implementation and Results

The Operational Plan of the Department of Applied Sciences was prepared by the DAS Council through the initial drafting of the plan by the DAS QA Coordinator. The plan was based primarily on the College Strategic Plan and on the results of the Management (DAS Council) review and evaluation of the implementation of the previous Operational Plan. Strategies in the previous Operational Plan that were not implemented or that were partially implemented have been given priority in the preparation of the current Operational Plan. In order to involve the entire staff members of the department in the preparation of the current Operational plan, the DAS Council through the QA Coordinator sent the initial draft of the plan to them via e-mail. The staff members were given several days to send – in their feedback / suggestions either by e-mail or personal discussion with the QA Coordinator. The QA Coordinator collated the feedback and considered them in finalizing the initial draft of the 2011 – 2012 DAS Operational Plan before it was submitted to the DAS Council for its final critiquing, deliberation and approval. The approved Operational plan was forwarded to the staff members and heads of sections / units for information dissemination but more importantly for their proactive involvement in its implementation. Soft copy of the approved plan was submitted to the Dean through the QAC. Tables of tasks which are directly based on the Operational Plan were prepared by the QA Coordinator and were distributed to the HoD, HoSs, Unit Heads, Coordinators, Committee members who are identified to spearhead the actualization of the implementation steps as stipulated in the Operational Plan. Moreover, the table of tasks served as a reminder and a monitoring tool to ensure full implementation of the plan. The duly accomplished tables of tasks will be used by the Council and the staff members in reviewing the implementation of the plan. It will also be used as one of the bases in the preparation of the new Operational Plan for the following academic year, 2012 – 2013.

Results of initial review and evaluation of the current Operational Plan are shown in the table below. Moreover, plans for continual improvement which will be carried over in the next Operational Plan are also included in the table below:

Table 3.12 - **Results of the implementation of DAS Operational Plan for 2011 – 2012**

Strategy	Target	Results	Continual Improvement
1) Governance and Management			
1) Ensure information is documented and disseminated properly	By-laws, QAM, SP, and self-assessment reports available for stakeholders on the intranet by June 2012 and updated as needed	Webpage of DAS in the College website is regularly updated. Public documents of the department are posted for information	The Annual report where results of self assessment is integrated will be posted in the department's webpage subject to

Strategy	Target	Results	Continual Improvement
		dissemination and transparency	the approval of the DAS Council
2) Incorporate ADRI into quality management and activities	Annual decrease in number of relevant recommendations from 2009-2012 Affirmation of implementation of ADRI	Not implemented.	A re-orientation on the principles of ADRI is needed among administrators and staff. This should be conducted by QAD and an aggressive follow – up during internal audit can be done by QAC
3) Require an annual self - assessment report coupled with internal audit for all units covering all areas of College activity	80% of recommendations for improvement are included in the OP for the next academic year	Internal Audit was conducted by the department through the QA Coordinator before the QAD visit. Annual Report of the department is prepared based on the results of QAD visit, self assessment using internally prepared evaluation tools, recommendations and affirmations of OAAA and the department operational plan	Submission of self assessment report by the different sections in the department should be strictly implemented and considered in the performance evaluation of HoSs / unit heads
4) Improve health and safety awareness among students and staff in the Department of Applied Sciences	Policy available on the website by October 2011 At least one per semester for HCT and one per dept	Partially implemented Laboratory technicians have undergone a seminar on health and safety. Students are informed about	A more serious, aggressive and realistic planning and implementation of health and safety activities like actual earthquake and fire

Strategy	Target	Results	Continual Improvement
		health and safety in the laboratory as a part of their orientation	drills, first aid and rescue operation should be collaboratively done in the department.
2) Student Learning by Coursework Programs			
1) Devise and conduct student-focused assessment	Increase in the number of student-centered assessment components such as presentations, papers, or projects produced by student as part of course work from 2010 to 2012 Positive teacher feedback on the quality of work produced in student-centered activities from 2010 to 2012	Partially implemented. This is implemented in course project but not in other courses. Presentations, research paper or projects are not included in the assessment plan of the other courses. The department is still using the traditional method of assessments and moderation of assessment.	A training or workshop on assessment and evaluation that are student- centered should be conducted by a credible and competent speaker/s.
2) Encourage the use of technology that assists student self-directed learning	Coverage of all Foundation, certificate, diploma and common courses Annual improvement in utilization statistics Annual improvement from 2010 to 2012	Implemented Majority of the lecturers are using the e-learning portals. Seminars and trainings on e-learning are arranged by the e-learning coordinator of the department	Lecturers and students should be continuously encouraged to use and maximize the benefits in using the e-learning portal.
3) Collect and critically analyze student feedback on the quality of learning experience	Average response of ≥ 3.5 out of 5 on a 5-point scale for 70% of the sample Annual decrease in proportion of courses	Implemented. Questions for student evaluation of course and learning experience are integrated in the student evaluation of	A standard evaluation tool for this purpose is developed by QAC and it is being reviewed by CAB and soon be

Strategy	Target	Results	Continual Improvement
	receiving a rating of ≤ 2.9	the teacher. Analysis of the results of the said evaluation are presented and discussed by the HoS with the lecturers.	computerized and piloted
4) Improve teaching quality	Average response of ≥ 3.5 out of 5 on a 5-point scale for 70% of the sample -Annual decrease in proportion of courses receiving a rating of ≤ 2.9	Implemented Results of the evaluation are presented and discussed by the HoS to the lecturers	A standard evaluation tool for this purpose is developed by QAC and it is being reviewed CAB and soon be computerized and piloted
5) Activate career counseling	Annual increase in percentage from 2010 to 2012	Not Implemented	The Student Activity Coordinator will consider this strategy in the next planning of student activities for academic year 2012 -2013
6) Conduct seminar and invite guest lecturer	≥ 6 annually > 60% of staff attend the events in total A satisfaction response of ≥ 3 on a 5-point scale by ≥ 70% of the sample for each event	Partially implemented. The staff Activity Coordinator arranged sessions / seminar on item analysis where a speaker from Sultan Qaboos University was invited. A session on a result of a scientific research was also conducted	A training need analysis was conducted by the Staff activity coordinator. The results will be used in the planning of staff activities for next academic year 2012 – 2013.
7) Collect student and teacher feedback on courses or programs	≥ 3 rating of a survey construct on 5-point scale by ≥ 60% of the sample	Implemented. Course Evaluation by the staff and program evaluation by the graduating students,	Results of the two evaluations will be used as basis in the revision of the course delivery

Strategy	Target	Results	Continual Improvement
		alumni, staff and industries where the DAS students are having their OJT, were conducted. Results of course evaluation have been analyzed while the results of program evaluation are being retrieved for analysis.	plan and the curriculum of the DAS academic programs.
8) Increase and facilitate the direct involvement of the profession and industry in program and course development	Increase from 2010 to 2012	Implemented Professionals and industries were involved in the curriculum review of the Environmental Science Program. Professionals and industries were also involved in the market demand analysis of the other new programs of the department that will soon start. Program evaluation by industries was also conducted so that they can assess the current programs of the department. Results of the evaluation will be used as input and basis for any revision or enrichment of the Biology and Chemistry programs	The results of the program evaluation by the industries that was conducted this academic year will be used by the specialization subcommittees of the department in their revision / enrichment of the two current programs of the department.
9) Ensure national standards (Oman	National requirements in PEOs and POs met in HCT	Not Implemented. Program curricula of	The ADAA should discuss this issue

Strategy	Target	Results	Continual Improvement
Qualification Framework) are met through curricular and pedagogical process	programs by 2012 90% of recommendations are implemented	the department are based on the requirements of the Directorate General of Occupational Standards & Curriculum Development (DGSO & DC)I	with the DGOS & DC to decide on the action that must be taken by the College on the requirements of Oman Qualification Framework
10) Link graduate attributes with teaching, learning and assessment processes	The mapping process is published in the QAM by June 2012 Process is applied in courses (design and implementation) starting 2012	Partially Implemented. A proposal regarding the format of delivery plan which will include graduate attributes that are aligned to the topics and learning outcomes has been submitted to MoM	The graduate attributes of HCT should be posted in the College webpage for information dissemination or awareness
11) Recognize student leadership potential	Student representatives from each department by Oct 2011 At least 2 students annually	Implemented. Students are actively involved in the activities of Science Club. Leaders are selected by the club members	Student leadership training should be conducted so that potential student leaders will have the opportunity to enhance their capability and be identified
12) Encourage membership in professional bodies where appropriate	Increase in number of staff and student members in professional bodies from 2009 to 2012 Increase in number of staff and student members in boards of national professional bodies from 2009 to 2012	Partially Implemented. List of professional bodies where the staff can join or be a member are posted in the webpage of the department for information dissemination and awareness	Incentives like some points added to the evaluation results of staff who are members or officers of professional bodies or organizations can be used as a form of encouragement for staff and students

Strategy	Target	Results	Continual Improvement
			to join.
13) Publish a department /newsletter featuring DAS events, staff, students and alumni	Newsletter issued in December and May every year	Not implemented. Two Omani staff members represent the department in a College-wide endeavor relative to this objective.	Instead of a newsletter, the department will regularly update its webpage in the College website through the webpage coordinator of the department. Hopefully, this will keep the staff, students, alumni of the department and other stakeholders being updated of the activities, developments and plans of the Department of Applied sciences
3) Academic Support Services			
1) Improve the quality and quantity of educational and reference materials in the library	Number of new titles/items added User satisfaction with quality of materials (from completed feedback questionnaire)	Books were bought by each section using the funding that was awarded to the department by MoM. The fund was equally divided by the HoD to the different sections	The department will implement the procedure in lending and borrowing books that are acquired by the department. Moreover, the department will continue to follow-up from MOM the textbooks and references that it proposed to be purchased. The department will

Strategy	Target	Results	Continual Improvement
			continue to maintain the systematic cataloging of books and posters in its bookstore (M219).
2) Require academic units to submit requests for learning resources as an annual standardized procedure	One per academic department by November every year	Implemented. Each section / unit in the department prepared list of textbooks references and e-books and was submitted to MOM by the HoD	Since each department is given funds for the purchase of books, there is no need to submit list of books to be purchased by the library. The department has a bookstore where the books are stored. Books are distributed to the students. A documented procedure is designed for this purpose.
3) Develop e-learning content (and provide flexibility in teaching and content management to allow for such development)	90% of courses provided by HCT have e-learning material available by 2012	Implemented. Majority of the lecturers have posted their teaching materials in the e-learning portal. They are also posting some of their assessments like assignments in the e-learning.	Continuous maximization of the of the e-learning portal by the staff and students
4) Provide and improve training for staff on the use of educational technology	≥ 1 workshop every semester 70% of staff receive the needed training by 2012	The e-learning coordinator of the department had scheduled several trainings that are sponsored by ETC and where some staff	The department through its e-learning coordinator sustain its activities which are conducted in collaboration with

Strategy	Target	Results	Continual Improvement
		have attended	ETC
5) Provide Advisor's training	One program per year for the College and at least one workshop per department	Partially implemented. A session on academic advising was held to properly orient and teach new advisers and would be advisers	Use the new evaluation tool developed by QAC to assess the performance of the academic advisers and plan for an appropriate training for advisers based on the result of the evaluation
6) Disseminate information to students (e.g. induction, forums and electronic means, etc.)	≥ 3 on a 5-point scale for 70% of the sample annually	Partially implemented. Induction / orientation of new intake are regularly conducted through the Certificate / Diploma Level Coordinate that was designated by the HoD to oversee the activity. The webpage of the department is regularly updated so that the students are updated of the different activities, events and information that they must know. E-mails and SMS are sent to students by their advisers to inform students on some urgent matters	The department will use the evaluation tool developed by QAC to assess the effectiveness of the different means of information dissemination that are used by the department
7) Improve advising environment	≥ 3 on a 5-point scale for 70% of the sample annually	Implemented. Measures have been taken by the	Satisfaction of advisees on the performance of

Strategy	Target	Results	Continual Improvement
		department to improve academic advising. Some of these are: a) training conducted by the advising committee to re-orient the advisers on the new academic policies and guidelines of the College, b) new advisers are assigned to ensure that the number of advisees per adviser will be within the prescribed and ideal number of advisees per adviser. c) the department's registrar constantly inform advisers on the latest directives and changes related to advising and registration.	their advisers will be assessed by using the evaluation tool developed by QAC
8) Prepare learning support staff for learning support task	At least one session per semester and as needed	Implemented The laboratory technicians are regularly given training or seminars that are related to their work (i.e. Health and safety seminar, In-house training on the use of laboratory equipments)	The result of training need analysis for technicians will be used as the basis of the Staff Activity Coordinator in preparing the Staff Activity Plan for next academic year, 2012 – 2013.
9) Develop a policy for the utilization and maintenance of physical resources	Policy published in QAM in June 2012	Implemented. E- memo from the HoD regarding guidelines in using the rooms where LCD	A documented policy on the proper utilization and maintenance of the physical

Strategy	Target	Results	Continual Improvement
		projector, desktop computers and projector screens are installed, were sent to all staff of the department. Internal policies of each section in the department regarding reserving, using and returning materials and equipments that are assigned to them or they have acquired, are disseminated to the staff during section meetings. The staff members are required to disseminate the information to the students.	properties of the department will be included in the sub manual. Systematic procedure in reserving, borrowing and returning materials and equipment will also be included.
10) Conduct regular training of Staff on the use of learning resources	90% of teaching staff receive such training/induction by June 2011	Implemented. e-learning coordinator of the department have scheduled several trainings on the use of e-learning portal and other related matters	The Department Staff Activity coordinator will include regular training of staff on the use learning resources
11) Control the use of printing and materials reproduction services by establishing policies and procedures	90% of staff aware of the policy by April 20112 Full compliance by Summer of 2010/2011	Partially implemented. Each section is required by the HoD to prepare and fill up a table that shows their printing requirements for the teaching materials /	A proper coordination between the Printing Office (AVR) and the department on the strict implementation of the use of the form

Strategy	Target	Results	Continual Improvement
		course handouts.	that is supposed to be filled up by the lecturer or technician and signed by the HoD / HoS of the department before a printing request is accepted and granted by the staff in the AVR.
4) Student and Student Support Services			
1) Display Honor List in academic departments every semester and Dean's List every Year a	An Honors List in each academic dept every semester and a Dean's List every academic year	Not Implemented	The Student Activity Coordinator of the department in collaboration with the heads of section will request the HoD to include in the DAS webpage the Honor List of the department. Criteria on the selection of Honor List will have to be set and approved first by the DAS Council.
2) Use intrusive advising with some students as needed	≥ 3 on a 5-point scale for 70% of the sample annually	Implemented A session on intrusive advising was conducted by the Department's Registrar where advisers are encouraged to give preference to their advisees who have some academic and	An evaluation to determine student satisfaction on the intrusive advising will be conducted by using the Evaluation Tool that was developed by QAC

Strategy	Target	Results	Continual Improvement
		social c problems	
3) Reward model student behavior	At least one in a College recognition event every year from 2010 to 2012	Not Implemented	The student activity coordinator of the department will consider this as a top priority in the planning of activities for next academic year.
5) Staff and Staff Support Services			
1) Establish a College Policy and clear procedure for severance including appeals and exit interviews	Policy approved and published in QAM by June 2012	To be implemented subject to the plan of CAB	
2) Retain and seek the recruitment of staff as per the college needs	Annual decrease in proportion of vacant positions with no applications/nominations Annual decrease	Implemented The HoD through the help of HoSs and heads of unit are conducting interview of applicants for vacant lecturer and technician positions. Moreover, the heads of sections are reviewing CVs' of applicants that are sent by several employment agencies through the MOM	To avoid being under staffed or over staffed, the department will carefully plan the number of courses to be offered each academic year and the number of staff to be recruited and hired by preparing a five-year development plan
3) Identify potential Omani faculty given the decline in their population	I Increase from 2010 to 2012 Annual increase Annual decrease in total departures by staff with less than 3 consecutive years of employment	Implemented Omanis are given priority in the the hiring of staff and in sending staff for professional development	Deserving Omani Junior staff should be given support and opportunities to develop further their potentials and, incentives to attract them to stay in the teaching

Strategy	Target	Results	Continual Improvement
			profession
4) Improve the caliber of support staff through proper evaluation and training	Annual improvement in average performance evaluation	Implemented. The performance and qualifications of Laboratory technicians are periodically evaluated by their HoS, Laboratory technician Supervisor and Senior Lecturer. Training needs of staff were also determined through "Training Needs Analysis" (TNA) by the Staff Activity Coordinator	Training Activity plan for the support staff will be prepared and designed by the Staff Activity Coordinator
5) Establish clear job description and requirement for candidates	Comprehensive job description list available by June 2012	Implemented. Job descriptions for key positions in the department and also for lecturers and support staff are explicitly laid down in the Department's sub manual in addition to what are stipulated in the College By-laws	The sub manual of the department where the job descriptions are incorporated will be reviewed, finalized and approved by the the DAS Council in September 2012.
6) Design and implement comprehensive induction program to new staff with proper emphasis to the different categories of employees	New program launched and implemented starting April 2012 ≥ 3.5 on a 5-point scale for 70% of the sample annually All staff joining after April 2012 receive induction (sample statistics drawn in 2012	Partially Implemented Induction of new staff is taken cared by the HoS or a staff assigned by the HoS. The DAS submanual may also served as induction manual	Formal induction program of new staff is one of the activities that will be included in the activity plan of the Department Staff Activity Coordinator.

Strategy	Target	Results	Continual Improvement
	end)		
7) Link appraisal with professional development	Professional development included in the criteria for appraisal in the revised set of Oct 2011 Annual increase from 2010 to 2012	Not Implemented	Attendance or participation to professional development will be included as one of the items to be considered in the staff appraisal
6) General Support Services and Facilities			
1) Put in place effective policies and procedures for maintenance, replacement and upgrading of facilities	policies and procedures for maintenance, replacement and upgrading of facilities published in the QAM in June 2012	Not implemented	Maintenance, calibration and upgrading of laboratory equipments will be one of the items that will be audited during the internal audit
2) Ensure that all laboratories are assessed annually for adequacy of space, numbers of machinery and need for upgrading.	≥ 3 on a 5-point scale by 70% of the sample 90% of the recommendations are implemented annually	Not implemented	Health and safety coordinator will include in his plan of activities for next year the internal audit of laboratory facilities and equipment

Feedback Collection and Action Taken

3.4 DAS Feedback Collection and Action Taken

Evaluation of some processes that are very vital to the operation of the department in its desire to give quality service and education were conducted for feedback mechanism purposes. The said evaluation includes the following:

a) Staff Appraisal of Lecturers

This was done by using three different evaluation instruments that were prepared by the department based on the evaluation tools that were designed and prepared by the former QAEC. The first evaluation instrument was used by the Head of the department or Head of Section / Unit to assess the qualifications (academic, attitude towards work, professionalism) of the lecturer. The second instrument was used to evaluate the performance of the lecturer in the classroom as perceived and observed by the HoD, HoS and a Senior Lecturer. The third instrument was used to evaluate the performance of the lecturer by the students.

There were four responses, namely, strongly agree, agree, strongly disagree and disagree in each evaluation tool with NA, not applicable, as an alternative response. The averages (descriptive statistics) of the responses were calculated based on a tallying sheet that was developed by the department. Results of the three evaluations for each lecturer were summarized in a 40:30:30 % distributions and transmuted into a five scale qualitative interpretation which was reviewed and approved by the DAS Council.

1 - 1.5 = Poor
1.6 - 2.5 = Fair
2.6 - 3.0 = Good
3.1 - 3.5 = Very Good
3.6 - 4.0 = Excellent

b) Staff Appraisal of Laboratory Technician

Two evaluation instruments were designed and developed by the department to appraise the laboratory technicians. The first instrument is intended to evaluate the qualifications (academic preparation, trainings and professionalism) of the technician and it is answered by his / her HoS while the second instrument is used to measure the performance of the technician in the laboratory by the HoS, the lecturer being assisted by the technician and the technician supervisor. The DAS Council decided not to include the students in the evaluation of laboratory technicians. Results of the two evaluations are summarized in a 60:40 % distribution and transmuted into a 5-scale qualitative interpretation similar to what is used for lecturer.

c) Training Needs Analysis

The training needs of the lecturers and laboratory technicians in the department were identified through a training needs analysis that was conducted and analyzed by the Staff Activity Coordinator of the department. An evaluation instrument that was developed by the department for such purpose was used. Results of the training needs analysis is used as a basis of the DAS Staff Coordinator in his preparation of Staff Activity Plan for next academic year and in the approval of the plan by the DAS Council. Training needs that were identified by the HoSs in the Staff Appraisal for both lecturers and technicians are also considered in the preparation of the activity plan.

d) Evaluation of Departmental Activities

The evaluation of four major activities in the department using an evaluation instrument which was designed and prepared by the department for such purpose was conducted. The four major activities are induction/orientation of new intake, seminar / session on test item analysis, a session on QA matters and a presentation of a research paper by a staff member of the department. Results of the four evaluations were analyzed and will be used as basis for improvement in the conduct of similar activities in the next academic years.

On the other hand, a recently concluded 2-day seminar on Health and Safety was conducted by the Health and Safety Committee and was attended by laboratory technicians. The new evaluation tool that was developed by the incumbent Quality Assurance Committee was used to evaluate the seminar. The results of the evaluation will be used a basis in pursuing other planned activities of the Health and Safety Committee.

e) Course and Program Evaluation

The courses offered by the department through the three sections (Applied Biology, Applied Chemistry and Environmental Sciences) and Physics unit were evaluated by the staff using the evaluation instrument that was designed and prepared by the department based on the what was proposed by the former QAEC. The results of the course evaluation will serve as inputs in the revision and improvement of the delivery plans and contents of the courses offered by the department. This is apt and timely considering the fact that the Directorate General for Occupational Standards and Curriculum Development had proposed a new format / template for course delivery plan, assessment plan and mapping of learning outcomes.

For the program evaluation, two evaluation instruments were designed and prepared. One of these will have to be answered by industries where students and alumni of the department are having their OJT and are working respectively. The other evaluation

instrument is to be answered by the staff, alumni and graduating students of the two sections, Applied Biology and Applied Chemistry. The results of program evaluation will be used as inputs in the periodic curriculum review and revision which are done to ensure that the academic programs of the department meet the market demand and the skill requirement of the workforce of Oman.

Results Analysis

3.5 Results Analysis

3.5.1 OAAA Recommendations and Affirmations

Out of the twenty one (21) recommendations of Oman Academic Accreditation Authority (OAAA) that were pointed in the Audit Report published in January 2010, majority of them were partially implemented if not fully. The results analysis in this context is based primarily on the perception of the department on how the recommendations and affirmations must be implemented at the department level. Some of the recommendations are beyond the jurisdiction of the department as they are to be implemented directly and solely by the unit identified and specified in the table (i.e. c/o CAB, ADAF, ETC, ELC). Eight (8) of the ten (10) affirmations were implemented by the department while the other two (2) are under the direct implementation of ADAF.

3.5.2 DAS Operational Plan

Three (3) of the four (4) strategies that were identified under governance and management were implemented either fully or partially by the department, while three (3) of the twelve (12) strategies under the domain, student learning by coursework were not implemented by the department. The implementation of the nine (9) strategies under the said domain is either partial or full. It is important to note that the basis of partial or full implementation of a strategy is on how the department perceived the strategy should be implemented at the departmental level with less consideration on the stipulated targets in the Strategic Plan or Operational Plan.

All of the eleven (11) strategies under the academic support services were partially or fully implemented. Only one (1) of the three (3) strategies under the domain, student and student support services was fully implemented. On the other hand, only two (2) of the seven strategies under staff and staff support services were not implemented. The two (2) strategies that fall under general support services and facilities were not implemented.

In conclusion, seventy five percent (75%) of the strategies that are stipulated in the DAS Operational Plan for 2011 – 2012 was partially or fully implemented. In spite of their partial or full implementation, they may still be considered in the next operational planning of the department for continual improvement purposes. The twenty five percent (25%) which were not implemented will definitely be carried over and given priority in the next operational planning of the department

3.5.3 Staff Appraisal (Lecturer and Laboratory Technicians)

Twenty five percent of the teaching staff (lecturers) was assessed (appraised) by using the three evaluation tools that were internally prepared by the department and approved by the DAS Council. Results of the appraisal showed that majority of them fall on the qualitative interpretation “GOOD” based on the following scale:

1 - 1.5 = Poor
1.7 - 2.5 = Fair
2.7 - 3.0 = Good
3.2 - 3.5 = Very Good
3.6 - 4.0 = Excellent

Summary of the results of the appraisal which includes comments and suggestions by the head of section, senior lecturers and students were presented and discussed with the concerned lecturer after the submission of grades. Strengths and weaknesses were identified. The training needs of the lecturer were also identified when the results of appraisal were reviewed by the HoS and such training needs were forwarded to the staff activity coordinator for him to consider in the planning of activities for staff development.

Seventeen percent (17%) of the support staff (laboratory technicians) was assessed (appraised) by using the two evaluation tools that were internally developed by the department. Results of the appraisal showed that majority of the technicians that were appraised fall under the category "GOOD" based on the scale presented above. The results and qualitative interpretation of the results were presented and discussed with the technician by the concerned HoS or unit head.

Due to the confidentiality of the results of staff appraisal, the raw data are not included in this report.

3.5.4. Training Needs Analysis

For Lecturer:

Through the initiative of the Staff Activity Coordinator, a training needs analysis (TNA) for lecturer and laboratory technician was conducted by using a survey questionnaire / evaluation tool that was internally designed for such purpose. Results of the survey will be used by the staff activity coordinator in planning the activities for the coming academic year. The TNA ensures that the trainings that will be conducted are based on what are really needed by the majority of the staff members. The table below shows the results of the survey where 100% of the lecturers and technicians have responded:

Table 3.5.4.1 - Results of lecturers' training needs analysis

Topics	Priority
Effective teaching strategies	1
Writing proposals and scientific papers	2
How to use the excel program	3
Item Analysis and Test Banks	4

Test Construction (How to prepare test questions) and the art of questioning	5
How to write objectives and learning outcomes	6
Writing handouts and other instructional / teaching materials	7
How to prepare slide presentations for lectures (PowerPoint)	8
Basic Arabic Verbal Communication	9
How to prepare the grade sheets and other documents that must be submitted to the examination committee	10
How to speak and write Standard English	11
Dress Code and Business Attire	12

Specific Topics suggested by HoS's and Co-ordinator based on the result of staff appraisals:

- Biology: How to prepare a poster?
- Chemistry: None
- Physics: Staff interrelations.
- Environmental Sciences: Time management, Stress Management, Behavior Management

For Laboratory Technicians

Table 3.5.4.2 - Result of laboratory technicians' training needs analysis

Topics	Priority
First Aid in the laboratory	1
Use and maintenance of laboratory equipment (AAS, GC, Oscilloscope etc.)	2
Proper waste management and disposal	3
Filing and indexing of office reports and documents	4
Maintenance and calibration of microscope	5
Bill of Quantity (BoQ), Product Specifications and Tender	6
Preparation of Laboratory financial budget	7
Proper arrangements of chemicals and materials in the laboratory	8
Preparation of Laboratory Lay-out	9
Use of Excel program	10
Maintenances and calibration of Balances	11
Preparation of culture media, stock culture	12
Preparation of solutions	13

3.5.5 Departmental Activities

A) Orientation / Induction of New Intake

The activity was evaluated by using an internally prepared tool which was intended for the said activity. The results were analyzed based on two categories:

Category I - Planning and Arrangement of the Orientation Presentation. [Questions 1- 4].

Category II - Evaluation of the Presentation. [Questions 5-9].

The planning and arrangement of the orientation presentation was analyzed by plotting the response of the students against the question number as presented below:

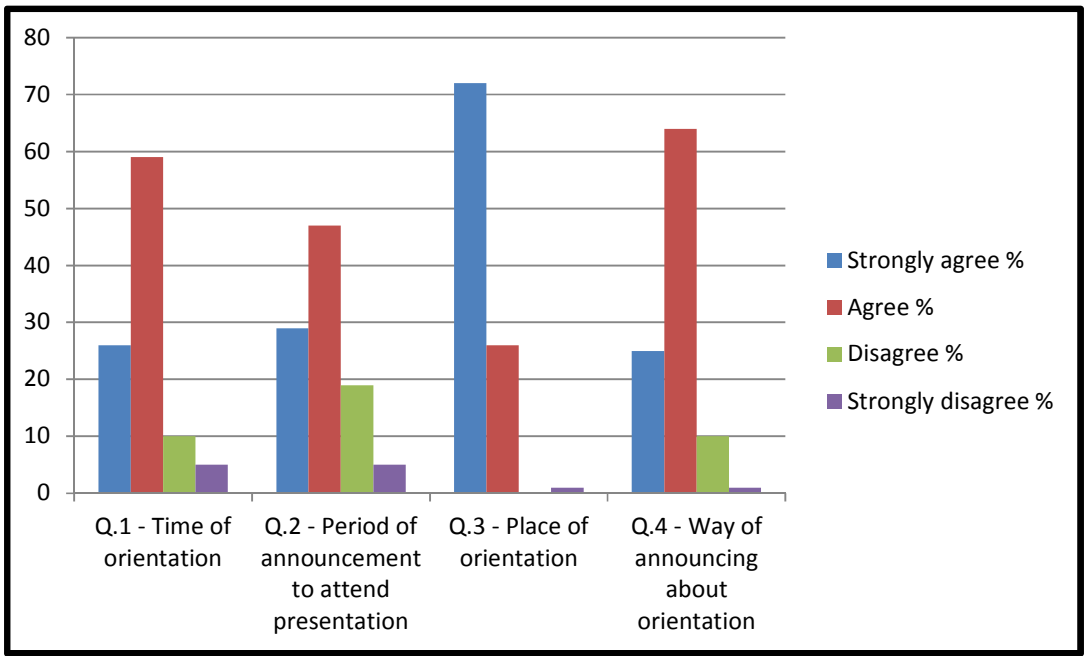


Figure 1 - Students Response to Category - I Questions (Planning and Arrangement of the Orientation Presentation)

The results of the students' evaluation on the presentation of information during the orientation were analyzed by using their responses on question numbers 5 – 9. The response of the students against the question number is presented below:

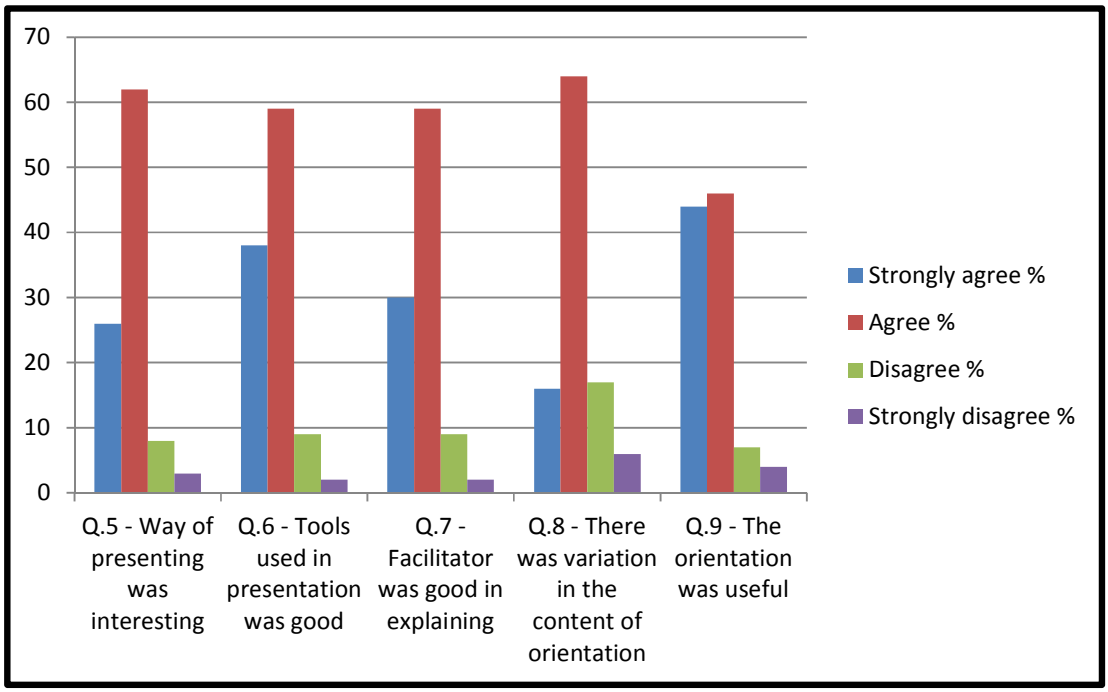


Figure 2- Students response to Category -II Questions (Evaluation of Presentation)

Students Suggestions:

Some students suggested that the presentation should be delivered in Arabic. One student suggested having the orientation in smaller groups so that they could discuss more on some issues like probation.

B) Seminar on Item Analysis

A seminar on "How to conduct a test item analysis?" was conducted by Dr. Hussain Alkharusi, Assistant Professor of Measurement & Evaluation, Department of Psychology & Assistant Dean for Undergraduate Studies College of Education, Sultan Qaboos University. The seminar was given to the lecturers of the Department of Applied Sciences as an action to the suggestion of QAD in their audit visit and as an initial step towards improving the assessment and moderation procedure / process in the department. The seminar was evaluated by using a feedback form that was internally prepared. In a scale of 1 to 3 where 3 is the highest and 1 is the lowest, the participants of the seminar rated the four items namely, usefulness of the seminar for professional development, the speaker meets the expectation of the participants, conduct of the seminar and, the venue. Analysis of the results of evaluation is presented below:

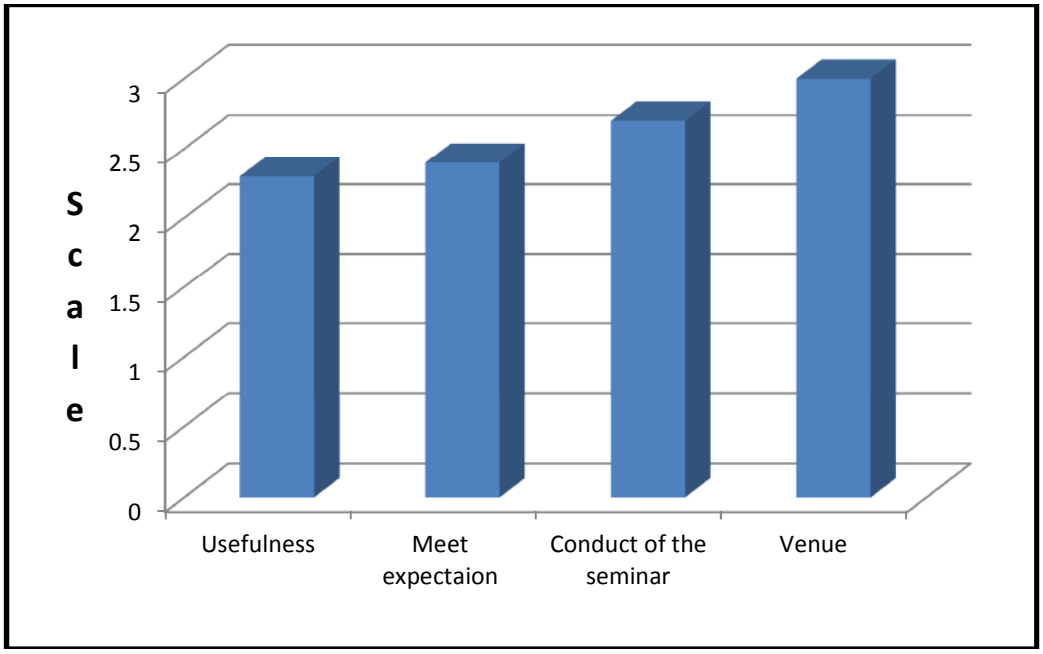


Figure 3 – Results of the evaluation of the seminar on item analysis

C) Seminar on Health and Safety

A seminar on health and safety was conducted as an action on one of the suggestions of QAD in their recent audit – visit. The seminar was evaluated by using the evaluation tool that was newly prepared by the QAC. Results analysis of the evaluation showed a 4.5 average which may be interpreted that the conduct of the seminar as perceived by the participant is, very good. Most of the respondents are recommending that a follow up training and an actual safety procedure like fire drill and earthquake drill should be conducted. Moreover, the participants are also recommending that it should be done as a college-wide activity.

3.5.6 Course Evaluation

The courses that are offered by the different sections and units of the department were evaluated by the lecturers in order to find out if they are still relevant, meet the market demand and the need for revision. It is important to note that a program evaluation by the industries, alumni, staff and graduating students is also being conducted, however, the difficulty in retrieving the results did not warrant its inclusion in this report. Nevertheless, the result will be presented and discussed in the self assessment report.

The course evaluation by the staff was conducted by using the evaluation tool that was prepared by the department which was based primarily from the tool that was proposed by the former QAEC. Results analysis of the evaluation by the different sections / unit is presented in

the table below. It is important to note that the said results analysis will be considered in the revision and preparation of course delivery plan for the next academic year, 2012 -2013.

Table 3.5.6.1 – Results analysis of the course evaluation of Applied Biology Section

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
ASAB 1100	Fundamentals of Biology	2.83	Students at this level can tolerate a more advanced biology material than what is used now. Some of the student's language are bad; need some skills like speaking and writing. The classrooms must be well-equipped with LCDs and computers so that the lecturer will have more time & effort to give more in the lecture since it is taking a long time to be connected and sometimes these devices do not work.
ASAC 1203	Laboratory Technique (Biology)	2.80	The laboratory needs more sophisticated equipment and more space for the equipment (its congested right now). Microtomy which is very important equipment should be repaired or replaced. As the microtomy is not in working condition, we are forced to skip that practical, which is not good for the students. Pre-lab quiz will allow the students to prepare for the class in advance. Microscopes should be serviced at frequent intervals.
ASAC 1307	SLOM	2.74	Page 42 (Previously)- Page 41 (Currently) – The table of different types of fire extinguisher has missing parts which clarifies the meanings of stars*, and the other signs (Nothing has been done about it). Page 43 (Previously)- Page 42 (Currently) – The pictures are not matching with comments mentioned below them (Needed changes have

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			been done) Page 44 (Previously)- Page 43 (Currently)- Fire Risk Assessments One step is missing which is the fourth step (Needed changes have been done) Page 53 (Previously)- Page 52 (Currently) – Guarding needs to be explained by a clear way and the bullet points mentioned below it are not well clear as they have been copied and pasted from internet. (Nothing has been done about it). Page 70 (Previously) –Shifting the toxicological properties to after common safety symbols (Needed changes have been done) Page 74 (Previously) – Shifting the glassware safety to the end of the chapter. (Needed changes have been done)
ASAB 2101	Cell Biology	3.08	The number of teaching weeks is not enough to cover the objective and outcomes. The number of teaching weeks needs to be increased.
ASAB 2102	Biology Laboratory Techniques	3.73	Enhancements of the course with up-to-date e-tools like videos, PPTs, games, flash cards, online quizzes and mini-reports. Hands-on application can be given priority by simulation, role-playing and several encouraging related activities in-house (labs) and outdoor (linkages).
ASAB 2103	Microbiology	2.40	Duration of the semester is very short. The course objectives and outcomes are not matching with the course content. The handouts for both theory and practicals need to be revised.

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			Some topics can be made more comprehensive. Semester duration is very short and as a result, could not cover all the materials.
ASAB 2207	Biochemistry	3.12	Duration of the semester is very short including the holidays especially last semester. If the length of the semester is increased, then all the objectives and outcomes can be covered. This will help the students take all the information required for the other courses at higher levels.
ASAB 2308	Introduction to Biotechnology	2.85	The course should be in the higher diploma level and molecular biology should be a prerequisite for the course. More practicals are required but due to the shortage of facilities, the number of practicals has been cut down. Change the outcomes of course to include the introduced practical. Provide sufficient number of textbooks for students; the current number is 9 books. The current laboratory for biochemistry is not suitable for biotechnology use, thus facilitated laboratory will be recommended if possible. The laboratory should be facilitated with equipment and materials to run the practicals relevant to biotechnology.
ASAB2413A	Project IA	3.38	Some basic courses on internet surfing, and excel working can enhance the performance of students.
ASAB2413B	Project IB	3.35	Should introduce concept of statistics in biology.
ASAB 3110	Plant Science	3.16	The objectives and outcomes of the course have been prepared for 12

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			weeks, but we have an average of 10 weeks per semester. The objectives and outcomes need to be rewritten.
ASAB 3111	Molecular Biology	3.00	Course outcomes cannot be covered in one semester. The course content is very good and the last topics are essential for the overall understanding of the subject. The lab is covering for essential materials and services such as PCR and vortex devices. The two hours practical sessions are not sufficient; it should be three hours. There should be flexibility given to lecturers for the assessment parameters of the subject.
ASAB 3112	Food Microbiology	3.12	The objectives and outcomes are not matching with the contents of the handouts. The semester just gives around 9-10 teaching weeks whereas the syllabus is based on 13 weeks. The objectives and outcomes need to be rewritten taking into consideration the knowledge that the students attained from the prerequisite. The current modern applications in food microbiology need to be included. The handouts needs to be modified.
ASAB 3205	Mammalian Physiology	2.69	Course outcomes are not covered due to the short duration of the semester (10 effective teaching weeks only). Prerequisites are not covered totally. Course is preferred to be placed in the first semester of higher diploma level and not in the second semester. Due to the short duration of the semester, the number of hours is not sufficient.

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
ASAB 3213	Ecological Sampling & Environmental Toxicology	3.31	Some outcomes are not covered during the semester.
ASAB 3215	Genetics	2.85	Explaining concepts takes longer. Practice problems needs to be done and on an average semester lasts only for 10 weeks whereas outcomes are based on 13 weeks. Textbooks should be adopted instead of handouts. Practical handout needs to be updated.
ASES 2205	Ecology	3.52	This course is very desirable and engrossed the students. All the teaching materials are available; however, the nature of the course needs some field work. To improve the course and to obtain better yield, it needs some portable equipment such as oxygen meter., light meters, hygrometer, etc.
ASAB 4116	Plant Physiology	3.28	Credit hours should be four with theory contact hours being three instead of two. The number of practical contact hours should be three instead of two. The course needs more equipment and apparatus such as sensitive balance, pH meters, desiccators, filtration section, soxhlet, rotary evaporator
ASAB 4117	Histology & Haematology	3.69	Incorporate course innovation, flexibility and all available tools for learning should be applied. Examples, more activities, demos, videos, simulations, etc.
ASAB 4118	Plant Biotechnology & Pathology	2.65	Pathology part is a separate branch, so most topics are not completed in the theory class. The outcomes cannot be covered in 2 contact hours per week. There should be a plant tissue culture lab, to run the practicals.

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			Textbooks and reference books should be provided for the students. Students should inculcate the habit of reading textbooks. Pathology part should be kept as a separate branch and not along with plant biotechnology. Pathology part could be covered only in the practical class due to the number of contact hours.
ASAB 4210	Biological Control	3.58	4 hours (twice a week) lab is required to cover the course practical requirements (and increase the number of experiments).
ASES 3111	Pollution and its Control	3.25	There are no pre-required courses. One hour more is required as was given before to cover the entire subject; it could be given as a tutorial. It is very necessary to increase the lab time to 3 hours instead of 2 hours per week. Assignments should have 10 marks instead of 5 marks; 5% of practical exam within the final written exam should be implemented. For most universities in Europe and US, this course is being given as a required course (compulsory not elective). Thus it is recommended that this action should also be taken. Increasing the contact hours from 3 to 4 hours is required to cover the course's content. Lab work is very important to the students in this course given that this is a technical college.
ASES 4201	Food Analysis	3.46	The course requires an additional theoretical contact hour. Lab equipment and materials are not available or in shortage.
ASES 4202	Zoology	3.46	If the duration of the semester is

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			increased, it will help the students to complete the syllabus i.e. finish all the objectives and outcomes.
ASES 4301	Nutrition	3.46	Theoretical contact hours need to be increased. The course requires an additional of one hour per week. Lab equipment and other chemicals are needed to perform the practicals perfectly well.
ASAB4223A	Project IIA	3.27	Students should have more time to fulfill their work; six hours per week is not enough. It is suggested that the practical contact hours be nine hours per week to fulfill their project requirements and performance. Students should be given more time and fewer courses to let him have a good chance to perform better. This will build up his career in the field of technology especially after his graduation. Offering the course in the summer is not healthy because summer semester is very short (six weeks) and not quite enough to cover the project requirements.
ASAB4223B	Project IIB	3.27	Students should have more time to fulfill their work; six hours per week is not enough. It is suggested that the practical contact hours be nine hours per week to fulfill their project requirements and performance. Students should be given more time and fewer courses to let him have a good chance to perform better. This will build up his career in the field of technology especially after his graduation. Offering the course in the summer is

Course Code	Course Title	Average Result of Evaluation (1 – 4)	Suggestions for Improving the Course / Comments / Feedback
			not healthy because summer semester is very short (six weeks) and not quite enough to cover the project requirements.

Table 3.5.6.2 – Results analysis of the course evaluation of Applied Chemistry Section

Diploma Year 1

SNo.	Code	Title	Score (max 4)	Feedback & Suggestions for Improvement
1	ASAC1100	Fund. Of Chemistry	3.40	• Language skills of students are inadequate • More semester length required to cover all outcomes • The credit hours may be increased
2	ASAC1203	Lab. Tech. (Chem)	3.05	• Duration of semester is much too short to impart much-needed basic skills • Some experiments may be performed only as demonstrations • Restructuring of the course may be required without affecting objectives/outcomes • Postponed outcomes should not be removed completely • Tutorial sessions can be held • Better library facilities • Practical mid-term exam • Pre-labs may be given to students to foster self-study • Science-oriented English language course to be part of the Foundation
3	ASAC1204	Chemistry I	3.40	• Increase in the number of theory contact hours
4	ASAC1212	Gen. Org. Chemistry	3.39	• Language of the students should be improved
5	CHEM1100	Fund. Of Chem (Engg.)	3.11	• Portions more relevant to engineers to be included • Organic Chemistry content to be more focused on hydrocarbons • Smaller class strengths • Increase in the number of contact hours by increasing credit hours • Conduct tutorials • More experiments to be designed

				• Industrial visits to be co-opted as part of the coverage of outcomes

Diploma Year 2

SNo.	Code	Title	Score (max 4)	Suggestions for Improvement
1	ASAC2105A	Chemistry II	2.64	• The number of students in a practical group should be limited to 20 • Some outcomes are irrelevant and should be removed • Students need more time to practice – theory contact hours should be increased
2	ASAC2109	Industrial Chemistry I	3.00	• Include GOC as a prerequisite • If the time for covering the course is not increased, some outcomes should be cut short
3	ASAC2313	Analytical Chemistry	2.92	• Replace handout with proper text-book • Acquire more instruments to cater for increasing student numbers • Less emphasis on power-points to enable students to learn from text • More emphasis on chromatography • Do not run the course in summer
4	ASAC2106	Chem. Lab. Tech. I	2.92	• No. of weeks are not sufficient to cover this course • Large number of students per section creates over-crowding, difficulty in teaching and unsafe atmosphere • Teaching assistants can help in proper training • Continuous assessment should be given greater weightage although this goes against the by-laws • Preliminary courses need to be better in order to place students on firm footing • Course could be redesigned without affecting objectives/outcomes • Better library facilities • Pre-labs may be given to students to foster self-study • Science-oriented English language course to be part of the Foundation • Better training in mathematics to be imparted as part of the foundation program • Fixed calendar to allow planned delivery of courses • Practical mid-term exam to be conducted
5	ASAC2413	Project I A &	3.08	• One lab dedicated to project students

	A & B	B		

Higher Diploma

SNo.	Code	Title	Score (max 4)	Suggestions for Improvement
1	ASAC3116	Inorganic Chem. I	2.92	• Three theory contact hours are needed • It is better if the same teacher deals with theory & practical
2	ASAC3112	Organic Chem. I	2.72	• 2 contact hours for theory are not enough • More textbooks are required as number of students is increasing • Restructuring of outcomes with Org II is needed
3	ASAC3217	Organic Chem. II	2.88	• More time needed to cover outcomes & provide adequate practice for students • More outcomes need to be covered in Org I to ensure better coverage in this course • Manual & handout to be improved
4	ASAC3115	Phys. Chem I	2.76	• The number of weeks is not sufficient to cover all outcomes • Students need a an additional calculus course • Theory contact hours should be increased • Electrochemistry should be moved entirely to Phys II instead of covering it in two courses • Phys I can be run as a fully theoretical course with a common practical for Phys I & II
5	ASAC3218	Chem. Lab. Tech. II	2.73	• No. of weeks are not sufficient to cover this course • Org. Chem. I to be a pre-requisite for this course • Credit hours to be increased so that the contact hours are enough to complete open-ended experiments • Some basic knowledge pertaining to Qualitative Organic Chemistry is lacking in students • Continuous assessment should be given greater weightage although this goes against the by-laws • Better library facilities • Pre-labs may be given to students to foster self-study • Science-oriented English language course to be part of the Foundation • Better training in mathematics to be imparted as part of the foundation program • Fixed calendar to allow planned delivery of

				courses • Increase 3-hour exam to 6-hour duration to allow proper testing
6	ASAC3219A	Computers in Chemistry	3.31	• Outcomes to be modified to include applications • Tutorials to be revised and updated

B. Tech.

SNo.	Code	Title	Score (max 4)	Suggestions for Improvement
1	ASAC4122	Inorganic Chem. II	2.90	• Not enough time to cover all outcomes • The new outcomes suggested by Inorganic team should be implemented • There should be 3 theory contact hours
2	ASAC4224	Industrial Chem. II	3.00	• Some outcomes may be revised to make it more clear • Some chemical industries and their unit processes and applications may be included • The course should be supported by industrial visits which is very difficult to carry out in the present scenario
3	ASAC4121	Analytical Chem. II	3.15	• Better scheduled in the early part of the day when students are less fatigued • More instruments required
4	ASAC4225	Phys. Chem II	2.56	• Additional calculus course required to overcome weakness in mathematical background among students • 3 hours per week required
5	ASCE 0115	Petroleum & Petrochemicals	3.50	• Completed theory & practical handouts are to be printed on time
6	ASCE4301	Food Chemistry	2.85	• Textbooks (already requested) are not yet available • Some chemicals & equipments are also requested • Students require more organic background
7	ASAC4223 A & B	Project II A & B	3.30	• Access to internationally reputed journals published by ACS, Elsevier, RSC, etc. • Better equipments & chemicals • Power-point presentation about statistics should be used

Table 3.5.6.2 – Results analysis of the course evaluation of Applied Chemistry Section

SNo.	Code	Title	Score	Feedback & Suggestions for Improvement

			(max 4)	
1	ASES 2104	Principles of Environmental Chemistry	3.60	The objectives, outcomes and the course contents are to be aligned. The content of the theory material is to be updated Lack of sufficient time to teach the entire content of the course is a major obstacle in covering all outcomes
2	ASES 3109	Environmental Chemistry	3.00	A brief discussion on plar and non polar substances should be included in the course Soil analysis with reference to organic pollutants and metal ions should be included in the topics The practical activity on COD (Chemical Oxygen Demand) should be reviewed and revised if needed Determination of nitrates for water quality analysis should be included in the practical The learning outcomes on remote sensing (learning outcome 6) should be reviewed and checked if it must be included in the topics to be discussed in the said course should be given priority> This will prepare the students for the next course which is Environmental Chemstry

Table 3.5.6.2 – Results analysis of the course evaluation of Physics Unit

Courses for Diploma Year 1

SNo.	Code	Title	Score (max 4)	Feedback & Suggestions for Improvement
1	ASAC1205	Physics-1 For Science Students	3.21	• Time is not enough to cover the full course • Students language skills must be improved • The subject content is too much to cover in one semester. This course must be divided in to two semester: Physics for Science-I and Physics for Science-II • Language Skill is not enough to reach the subject contents

Courses for Diploma Year 2

SNo.	Code	Title	Score (max 4)	Feedback & Suggestions for Improvement
1	ASAC2210	Instrumentation	3.24	• Update the course objectives and outcomes • Additional equipment is required in the laboratory to perform the experiments.
2	ASAC2108	Material Technology	3.36	• A separate laboratory with equipment and apparatus (which was already suggested and requested and included in Tender 39) as this course will be helpful to upcoming industries especially METAL and POLYMER industries.

Courses for engineering students

SNo.	Code	Title	Score (max 4)	Feedback & Suggestions for Improvement
1	PHYS1100	Physics-1 for Engineering Students	3.30	• Short semester, lot of holidays • Two hours more is needed as a tutorial per week to solve problems on each topic, to develop students skills
2	PHYS1211	Physics-11 for Engineering Students	3.00	• Short Semester not enough to cover the whole course • The knowledge gained by the student during the semester is not 100% as it requires more number of weeks to cover the syllabus • Preferably there should be 2 semesters which will improve the quality of students outcomes • Most of the students are very weak in English. It is difficult when the strength of the class is too high. Lecturers have no flexibility. • In a normal semester with 10 to 11 teaching weeks, the course outcomes are just about accomplished but never

				completely finished. So a two semester system with at least 15 teaching weeks would be good • Physics is a conceptual subject it's need more tutorial work • 2 semester is preferred than 3 semesters per annum. This will improve the quality of students/outcomes • The scientific content of this course is not sufficiently detailed and deeper especially for engineering students who should study and learn more • The majority of the student present serious weakness in mathematics • Student should study more mathematical courses as physics and math are highly correlated • 50 minutes or one hour for each theoretical teaching session is not enough. At least 90 minutes should be allocated to each session, because with given time, it is not enough to study properly and in detail a physics without being interrupted by the end of the session that last effectively less than 50 minutes • Less chapters should be studied by engineering students to provide them with the opportunity to study the most important chapters in more details as they are supposed to be the future engineers.

Strengths and Achievements

3.6 Strengths and Achievements of the department

Strengths

- Teamwork despite differences and diversity in opinions.
- Transparent governance and management.
- Majority of the teaching staff are Ph.D. holders and are teaching their field of specialization.
- Efficient and hard-working technical staff as evidenced by the result of evaluation.
- Strict implementation of polices and guidelines of the department.
- Consultative decision-making.
- Regular training sessions provided to academic and technical staff for acquisition of skills/expertise in various fields.
- Technology-based teaching and learning process.
- Up to date curricular programs and courses as a result of periodic program and course evaluation.

Achievements

Through the support and help extended by the deanship and the Ministry of Manpower, the following were achieved by the department:

- New teaching laboratories, instrumentation and preparation rooms are added to the physical resources of the department.
- Acquisition of scientific laboratory equipment that are state of the art. New equipment that are funded by LNG are acquired by the department.
- Acquisition of several textbooks and reference books and, made available to students and staff.
- Construction of greenhouse.

- The department is actively involved in the Ecohouse project.
- Successfully sponsored an academic activity during the International Year of Chemistry.
- Two Omani staff successfully obtained their PhD. degrees and came back to serve and share their expertise to the students and staff of the Department of Applied Sciences.
- Student handbook, Safety Manual, Job Descriptions, Organization Chart and staff appraisal system have been improved, revised and uploaded in the department's webpage.
- Computerization of the Staff Appraisal through the help of ETC.
- Research carried out by staff and students published in peer-reviewed journals.

Challenges Faced by the Unit

3.7 Challenges Faced by the department

Challenges that can be addressed within the department:

- Cultural differences.
- Limited budget for staff training and social activities.
- Limited support materials for teaching like LCD.
- Some outcomes of courses need to be updated in order to remain relevant to the current market scenario.

Challenges that require support / intervention by college administration / DGTE

- Variation in the duration of semesters / term in the academic calendar over the past few years have made it difficult to plan course delivery consistently.
- Semester is short to cover the course outline and learning outcomes.
- The projection of student intake always change drastically at the last minute , especially of student coming to the department on transfer from other colleges making it very difficult to join.
- Having three intakes per year is not realistic especially in the summer term, where students are required to take fewer courses, for the resources spent remain the same.
- Salary package is not attractive enough for specialized faculty to be approved.
- There are no clear, attractive, performance related-incentives to staff.
- Directives are given to the department by more than one directorate upsetting the functioning of the department and causing confusion and problems.
- Insufficient facilities (laboratories, staff rooms, classrooms) for students and staff members.

Recommendations and Opportunities for Improvements

3.8 Recommendations and Opportunities for Improvements

Recommendations and opportunities of improvements that can be addressed within the department:

- Incorporate ADRI in quality management and activities.
- Student – focused assessment should be used in the department.
- Career counseling to students should be conducted.
- Curriculum should be aligned to Oman Qualification Framework.
- Names of students with exemplary academic performance (Honor List) should be displayed in bulletin boards and in the Department webpage and should be given due recognition.
- Students of good behavior should be given due recognition, too.
- Link staff appraisal with professional development.
- Put in place effective policies and procedures for maintenance, replacement and upgrading of facilities.
- Ensure that all laboratories are assessed annually for adequacy of space, numbers of machinery and need for upgrading.
- Team-building activities for staff and administrators.
- Training workshop on test construction and moderation.
- Formalizing consortium with other higher education providers (HEP) like SQU and other technology colleges and universities.
- Forming closer ties with alumni and other stakeholders.
- Setting up a database of alumni and their employers.

Recommendations and opportunities of improvements that require support / intervention by college administration / DGTE:

- Installation of LCD projector and desktop computer system in the classrooms and laboratories.
- A more attractive salary package in order to recruit highly qualified staff.
- More slots for Omani staff professional development.
- Additional free access computer laboratory for students with printing facilities.