**Sacred Heart College (Autonomous), Tirupattur, Vellore Dt**

**Academic Audit Report-12 Dec, 2015**

**Department of Chemistry**

**1. Introduction**

i) Composition of the Academic Audit Panel:

a) Dr. V. Narayanan, Professor, Department of Inorganic Chemistry, University of Madras, Chennai

b) Dr. P. Sudha, Principal, D.K.M Women’s College, Vellore

c) Dr. V. RaghuKumar, Process Research Development, Syngene Intl. Ltd, Biocon Park, Bangalore

d) Dr. S. Xavier Rajarathinam, Head, Department of Chemistry, Sacred Heart College (Autonomous) Tirupattur

e) Dr. T. Jeyabalan, PG-Head, Department of Chemistry, Sacred Heart College (Autonomous), Tirupattur

f) Rev. Dr. D. Maria Antony, Principal, Sacred Heart College (Autonomous), Tirupattur

ii) Schedule of the Academic audit meetings

***Date: 12.12.2015 Saturday***

**Time Programme Venue**

09.30 am Reception by the department Department of Chemistry

10.00 am Interaction with Rev Fr. Principal & Principal’s Office

IQAC Coordinator

10.30 am Meeting with teaching faculty Department Staff Room

11.00 am Meeting with Undergraduate students Respective classes

and M.Phil students

11.45 am Verification of the document Department of Chemistry

12.45 pm Lunch

01.30 pm Meeting with Shift-II students Respective Classes

02.30 pm Visit to Library and Lab Department Library & Laboratory

03.30 pm Briefing with HOD and Staff Department of Chemistry

04.00 pm Report Preparation and Consolidation AKRC

**2. Milestones of the Department**

1961- Dawn of the Department under the able leadership of Prof. Krishnaswamy.

1971- Grown Leaps and bounds under the leadership of Rev. Fr. P. A. Thomas.

1986- Formation of Rural Society for Advancement of Chemistry (RUSAC).

1988- Department takes up Autonomy along with the college, Introduced seminar on Current Advancement in Chemistry and project work for undergraduates.

1993- Prof A. Joseph takes over the leadership of the Department and gave much emphasis on Research projects.

1995- Prof S. Saminathan became the Head of the Department.

2002- M.Sc Chemistry was introduced in the Department.

2007- M.Phil and Research was taken up.

2008- Prof. R. Mohan took up leadership of the Department.

2011- Department reached golden jubilee with full-fledged courses and Research facility.

2013- Dr. S. Xavier Rajathinam took up the leadership of the Department.

2013- Commencement of undergraduate courses in Shift-II.

Each innovation has been developed with the ultimate goal of making the chemistry easier for the students to have a coherent understanding of chemistry, a positive attitude toward chemistry and a solid foundation on which to build, should they decide to continue their chemistry studies. Supporting the underprivileged and elevate them to achieve greater heights.

**3. Faculty Profile**

Faculty strength : 13

Gender wise strength : Male-11 Female-2

Qualification : Ph.D-6 M.Phil-7

Additional Qualification : Latex training was provided to the staffs

Roles and Responsibilities :Dr. S. Xavier Rajarathinam - Alumni In-charge

Dr. T. Jeyabalan - Research Director and Editor of

SHC Journal

Rev Fr. Praveen Peter - Vice Principal Shift-I,

Controller of Examination

Mr. Mario Leo Joseph - Cultural Shift-I

Dr. V. Collins Arun Prakash - DEEDS Shift-I

Mr. A. Napolean - Sports Shift-I

Dr. M. Wilson Bosco Paul - PG Association President Shift-II

Mr. R. Dhiwakar - UG Association president Shift-II

Dr. Jude Vimal Michael - Research Forum, RUSAC

Dr. M. Easuraja - Sports, Organizing Guest lectures

Mr. M. K. Thirupathy - Cultural

Ms. U. Anto Maria Jeraldin - Cultural Girls

**4. Students Profile**

|  |  |  |  |
| --- | --- | --- | --- |
| Students Strength | Shift | UG | PG |
| I | 161 |  |
| II | 104 | 51 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gender wise Strength | Shift | UG | Male | Female |
| I | 161 | 77 | 84 |
| II | 104 | 56 | 48 |
|  | PG | 14 | 27 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Community wise strength | Shift | UG | BC | BCM | MBC | SC | Other |
| I | 161 | 75 | 1 | 72 | 12 | 1 |
| II | 104 | 36 |  |  |  |  |
|  | PG |  |  |  |  |  |

Community wise strength : Shift-I UG

BC-75 MBC-72 SC-12 BCM-1 Other-1

Shift-II UG

BC-36 MBC-47 SC-18 ST-2

Shift-II PG

BC-21 MBC-20 SC-10

Attendance : **2013-2014**

Shift-I I-UG : 90

II-UG : 90

III-UG : 90

Shift-II I-PG : 90

II-PG : 90

**2014-2015**

Shift-I I-UG : 90.5

II-UG : 90.5

III-UG : 90.5

Shift-II I-UG : 90.5

I-PG : 90

II-PG : 90.5

**5. Curriculum**

CBCS Structure : Refer Appendix 1, 2 and 3

Specialization and important aspects : Students were holistically evaluated based on CBCS implemented Choice Based Credit System (CBCS).

Curriculum revision : 2016-2017

**6. Evaluation of the courses**

UG shift (I & II), PG (shift II) and M.Phil courses were evaluated. The Syllabus and course contents were to be improved on par with UGC, CBCS syllabi, keeping in mind that the students should easily clear the competitive exams (UGC, CSIR, GATE, SLET, UPSC, and staff selection commission etc).

**7. Research and consultancy**

Infrastructure facilities related to research have to be improved in order to attract more students in the main stream (full time). Separate research lab and instrumentation facility is needed for the research. Research supervisors should be allowed to access the available instrumental facilities for their research purpose. The research supervisors may be given some financial assistance from the management to improve the lab.

**8. Infrastructural Facilities**

Overall the infrastructure is relatively sufficient. Some improvements are suggested. Lack of space in the class room may be improved. Ventilation facility in the lab is required. Latest books may be purchased and kept in the department/main Library.

**9. Outcome of the Students meeting**

Shift I students are very happy with the college administration and the department. The inflibnet and virtual class room facilities are well appreciated. Overall all the teachers are highly dedicated, students friendly, and kind. Shift II students feel that the quality of teaching has to be improved on par with shift I teachers. Students are in need of latest books to equip their knowledge. At least one feedback session per semester is needed which can be done by IQAC.

**10. Outcome of the faculty meeting**

All the faculties are happy with the management.

Space for staff room is not sufficient. Separate research labs should be provided with state of art infrastructure to promote research in this part of the state. All the supervisors should be allowed to handle the required equipment which is available for their respective research purpose to improve the quality of research.

**11. Overall Assessment**

We unanimously feel that the quality of the faculty and students of chemistry department are very good. We are extremely happy that the students are well disciplined, highly cooperative and motivated. We suggest certain improvements in the lab, staff room and research facility for the betterment of the department. The library facility and maintance is highly commendable. Latest books and periodicals can be added to the existing library facility.

**12. Suggestions**

* Updation of the faculty and students knowledge is required.
* The staff members should participate in seminar, workshops and conferences.
* More number of invited lectures by eminent scientists in various fields will help to enrich the knowledge of the teachers and students.
* The faculty members can enroll as members in various professional research bodies

**13. Conclusions**

The committee is immensely impressed by the activities of the chemistry department. We thank the management for inviting us to conduct the academic audit in this prestigious institution.

**B. Sc Chemistry**

**Appendix-1**

**Scheme of Papers (CBCS) from 2013–14**

**Sem Subject Title of paper Hrs Cre CIA Sem Total**

I Core General Chemistry-I 6 5 25 75 100

Practical Volumetric Analysis 3 - - - -

II Core General Chemistry-II 6 5 25 75 100

Practical Volumetric Analysis 3 4 40 60 100

III Core General Chemistry-III 6 5 25 75 100

Practical Qualitative Inorganic 3 - - - -

Mixture Analysis and

Complex Preparation

IV Core General Chemistry-IV 6 5 25 75 100

Practical Qualitative Inorganic 3 4 40 60 100

Mixture Analysis and

Complex Preparation

V Core Inorganic Chemistry-I 3 3 25 75 100

Core Organic Chemistry-I 4 4 25 75 100

Core Physical Chemistry-I 4 4 25 75 100

Core Analytical Chemistry 4 4 25 75 100

Elective-I Medicinal Chemistry/ 5 5 25 75 100

Materials Chemistry

Practical Gravimetric 3 - - - -

Estimations and

Organic Analysis

Practical Physical Chemistry 3 - - - -

Practical

VI Core Inorganic Chemistry-II 3 3 25 75 100

Core Organic Chemistry-II 3 3 25 75 100

Core Physical Chemistry-II 4 3 25 75 100

Elective-II Polymer Chemistry/ 5 5 25 75 100

InstrumentalTechniques/

Reaction mechanisms

and Reagents in Organic

Chemistry

Elective-III Polymer Chemistry/ 5 5 25 75 100

Modern Instrumental

Techniques/Reaction

Mechanisms and Reagents

in Organic Chemistry

Practical Gravimetric 3 4 40 60 100

Estimations and

Organic Analysis

Practical Physical Chemistry 3 4 40 60 100

Practical

**Total 88 75 1800**

**Department of Chemistry (PG)**

Appendix-2

**M. Sc Chemistry (CBCS) - From 2013-2014**

**Sem Sub Paper Title of Paper InsHrs Cr CA Sem Total**

**I** Core Organic Chemistry-I 4 4 25 75 100

Core Inorganic Chemistry-I 4 4 25 75 100

Core Physical Chemistry-I 5 4 25 75 100

Elective – I Inorganic 4 4 - - -

Photochemistry/

Heterocyclic Chemistry

VE Human Rights 1 - - - - Core Organic Practicals-I 4 - - - -

Practicals Inorganic Practicals-I 4 - - - -

Physical Practicals-I 4 - - - -

**II** Core Organic Chemistry-II 4 4 25 75 100

Core Inorganic Chemistry-II 4 4 25 75 100

Core Physical Chemistry-II 5 4 25 75 100

Elective – II Polymer Chemistry/ 4 4 25 75 100

Green Chemistry

VE Human Rights 1 1 25 75 100

Core Practicals Organic Practicals-I 4 4 40 60 100

Inorganic Practicals-I 4 4 40 60 100

Physical Practicals-I 4 4 40 60 100

**III** Core Organic Chemistry-III 5 4 25 75 100

Core Inorganic Chemistry-III 4 4 25 75 100

Core Physical Chemistry-III 5 4 25 75 100

Elective – III Analytical Chemistry/ 4 4 25 75 100

Medical Chemistry

Core Practicals Organic Practicals-II 4 - - - -

Inorganic Practicals-II 4 - - - -

Physical Practicals-II 4 - - - -

**IV** Core Advanced Organic 4 4 25 75 100

Chemistry

Core Advanced Inorganic 4 4 25 75 100

Chemistry

Core Spectroscopy 5 4 25 75 100

Core Practicals Organic Practicals-II 4 4 40 60 100

Inorganic Practicals – II 4 4 40 60 100

Physical Practicals – II 4 4 40 60 100

Project Project Work 5 5 20 80 100

Viva Thesis

**120 90 2200**

**PG and Research Department of Chemistry**

Appendix-3

**Master of Philosophy in Chemistry**

**Regulations and Curriculum**

**Programme Structure**

**Part Paper Course Title Credits Hours Marks**

**CA SEM**

I I Research Methodology 6 6 25 75

II Instrumental Methods of 6 6 25 75

Analysis

III Elective 6 6 25 75

II Dissertation 12 12 - 100

**Total 30 120 400**

**14. Signatures of the Academic Audit Panel Members**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Audit Panel** | **Name** | **Signature** |
| 1 | Subject Expert-1 | Dr. V. Narayanan, Professor,  Dept. of Inorganic Chemistry,  University of Madras,  Guindy, Chennai-600005 |  |
| 2. | Subject Expert-2 | Dr. P. Sudha, Principal,  DKM Women’s College, Sainathapuram, Vellore-632001 |  |
| 3 | Industrial Expert | Dr. V. RaghuKumar,  Process Research Development,  Biocon BMS R&D Centre  Syngene International Ltd,  Biocon Park Plot No.2&3,  Bommasandra IV Phase, Jigani Link Road,  Bangalore-560099 |  |
| 4 | Chairperson | Dr. S. Xavier Rajarathinam, The Head,  Department of Chemistry,  Sacred Heart College(Autonomous),  Tirupattur, Vellore Dt |  |
| 5 | Member | Dr. T. Jeyabalan, PG Head,  Department of Chemistry,  Sacred Heart College(Autonomous),  Tirupattur, Vellore DT |  |