BEST PRACTICES

GOVERNMENT COLLEGE
KARIAVATTOM-KERALA

2015-16

INSTITUTIONAL BEST PRACTICES
GOVERNMENT COLLEGE KARIAVATTOM
(2015-16)

BEST PRACTICE-1

1. Title

Determination of permanent hardness of water

2. Objective

To determine the hardness of water in the areas nearby to the college using EDTA titration method so that the students can understand the application of methods being taught. This practice will also create an awareness among the locals about the quality of water they use so that they can take remedial measures if required.

3. Context

Hardness is primarily a function of the geology of the area with which the surface water is associated. Determining the hardness of the water has significance particularly in industrial and domestic purpose. When hard water is heated solid deposits of calcium carbonate can form in home appliances like water heaters, which in turn can reduce the life of equipment, raise the costs of heating the water, lower the efficiency of electric water heaters, and clog pipes. Many adverse health effects also exist including those affecting skin and hair. It is important to note that the hardness of water is not reported in most water quality assessments. Although some of the minerals in hard water might be beneficial, it might be important to keep the water moderately hard as various studies have suggested that they could negatively affect the recipients of the water. As such, certain filtration methods should be used to reduce the hardness of the water and maintain a desirable calcium and magnesium concentration.

4. Practice

EDTA titration method is the best method to determine the hardness of water. By applying this method to determine the hardness of water samples from the surrounding houses of the college, the students will learn to apply the theoretical things studied to real life problem. It also generates a sense of social awareness to the students.

5. Evidence of Success

Water samples were collected from different houses in different areas and temporary and permanent hardness of water was determined. Presence of chlorides, sulphate, carbonates etc. are analysed in the sample. Chemical Oxygen demand COD was also estimated.

6. Problems Encountered and Resources Required

Complete purity of water could not be tested due to the lack of facilities. Available laboratory facilities and chemicals were used for analysis.

BEST PRACTICE-2

1. Title

Assessment of drinking water quality by MPN analysis.

2. Objective

a. To test drinking water quality in water samples collected from the nearby hostels where students reside.
b. To ensure whether the water is safe to drink/consume.

3. Context

The practice was undertaken by the department after a series of water borne illness were reported by the hostel inmates. The students were curious to investigate the quality of water they consume. Boiled water provided from the hostels and well water samples were analysed.

4. Practice

MPN is the most applied method for quality testing of water to ensure whether the water is safe or not in terms of bacteria present in it. A group of bacteria commonly referred to as faecal coliforms act as indicators of faecal contamination in water. The presence of very few faecal coliform bacteria would indicate that water probably contains no disease-causing organisms, while the presence of large numbers of faecal coliform bacteria would indicate an extremely high probability that the water could contain disease causing microorganisms making the water unsafe for consumption. It was the first approach to look into drinking water quality in the selected source.

5. Evidence of Success

Presence of coliforms at hazardous levels were observed. From the results, it was evident that the drinking water supplied at nearby hostel facilities were not adequately boiled there no adequate boiling was done prior to supply for consumption at hostels. Mixing up of cool and boiled water might be the reason for water borne illness.

6. Problems Encountered and Resources Required

No specific problems encountered. Resources required include media, culture facility, incubators, source of distilled water.

7. Notes

For ensuring the quality of drinking water in any institution, this is the most appropriate method that can be followed. The department would like to include testing of food toxins/ adulterants/ food safety standards as future best practises.

BEST PRACTICE-3

1. Title

Engaging talks for students from external agencies on latest technologies and advancements.

2. Objective

- To familiarize students with latest technologies not included in the programme but used by the industry.
- It also helps them in securing slots for their Major Projects with these institutions.
- To have advanced learning on the technologies that is included in the curriculum.
- To introduce students to the corporate world and the practices followed by each organization.
- To provide students with an opportunity to use latest software tools and hardware equipment.

3. Context

The field of computer science is a dynamic and ever changing one. Students need to be aware of the latest and recent trends available in the industry. The students have various tools and technologies as part of their curriculum but owing to the constraints of the syllabus only preliminary knowledge is imparted to the students albeit, the need of time bound completion of the syllabus. The practical application of the technologies cannot be dealt in depth also due to the time constraint. Students need to be aware of these changes and hence to introduce these to them personnel related to industry are invited to deliver content regarding state of art and cutting-edge technologies. In the busy, time bound scheme and schedule of the syllabus, necessary time has to be found and allotted for conduct of such programs.

4. Practice

The students were introduced to latest technologies like Python, Android, .Net technology and the application domain of these technologies. Training for programming and implementing using these were given. They were introduced to hardware platforms such as Raspberry Pi and software's using these were implemented as part of their project. As part of implementation of projects other hardware devices and sensors that are not available with an educational institution were also provided by the institutes.

5. Evidence of Success

Students got enrolled with the institutions for undergoing the major projects that were available as part of their curriculum and were able to successfully complete their projects with these institutes.

6. Problems Encountered and Resources Required

Problems-The working hours and class curriculum provided for implementation of the projects need to be adjusted accordingly to the availability of resources in the institutes.
Solutions-If in house training can be provided by these institutes it would save much time for the students. Introduction of industrial visits to institutes can be incorporated within the syllabus.

7. Notes

Provision for conduct of technical tours and industrial visits as part of curriculum will be appreciated. Provision for frequent collaboration with industry or industry personnel is desirable.

BEST PRATICE-4

1. Title

Support for first year students through bridge course.

2. Objective

The Eligibility of the BSc Computer Science program includes Mathematics as one of the subjects in their higher secondary course. Though most of the students have studied Computer Science in their school, a few students will be admitted each year who have not studied Computer Science as one of their papers in 12th standard, since it is not mandatory. These students find it difficult to cope up with Logic development and Programming skills in the beginning of their degree. The Bridge course plays a vital role to bridge the gap caused and to help students by giving special attention to them by taking extra hours in logic development and the covering the basics of the programming language paper included in First Semester.

3. Context

Students with non-CS background are identified for the course. The main challenges faced are:

1. They should not feel they are poor in logic development

2. Time for the course need to be identified, since this can be done only during extra hours.

Both these were tackled by giving classes by the concerned teachers during lab hours by giving extra concentration on those students. Since all students are there in the lab, these students will not feel down. Classes were handled during free hours too. The progress of these students was assessed by giving home assignments and asking them to solve new problems each day.

4. Practice

The following advantages of the course make it unique.
1. It is Fast – done during the first semester of the student
2. Easy to understand – Handled by their own teachers and explanation to the students' level.
3. Flexible – no fixed timing, can be changed based on convenience of the attendees.

5. Evidence of Success

The university results of students for programming paper in first semester

6. Problems Encountered and Resources Required

Resources required- books and computers. The books in the library and computers in the computer lab were utilise for the course.