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An Interdisciplinary Open Elective Course Learning & Employment Benefits: A case study on Green Building Course

B. Vamsi Krishna[1], S. Sudhakara Reddy[2], R. Prasanna Kumar[3]

[1, 3]Department of Civil Engineering, Malla Reddy Engineering College (Autonomous), Secunderabad-500100
[2]Malla Reddy Engineering College (Autonomous), Secunderabad-500100
[1]localvamsi1987@gmail.com
[2] principal@mrec.ac.in
[3]prasanna1968@gmail.com

Abstract:Choice Based Credit System (CBCS) is widely being practiced by many institutions in India since it has become signatory of the University Grants Commission (UGC). This has promoted in such a way that different open elective courses should be offered by every department in engineering to other departments. This interdisciplinary oflearning open elective courses by other department students especially in engineering education will have learning awareness and job oriented benefits. Choice based credit system is one of them. Engineering students require the opportunity to choose any open elective course from different departments and apply their knowledge to acquire jobs in that field of course. Learning and employment benefits are not only through their own course subjects but also through open elective courses. In this paper an attempt is made to analyze the various factors affecting the choice of an open elective by the students, to enhance teaching, learning and employment opportunities. In the present case study the subject green buildings offered by civil engineering department at our college to the students of other branches was taken as reference. It was observed that most of the CSE Students have shown enormous interest in choosing this subject for various reasons. All these factors associated with the selection of this subject by the CSE students is carefully evaluated and analyzed through qualitative and quantitative approach.

Keywords: CBCS, UGC, Open Elective, Green Buildings, IGBC.

B. Vamsi Krishna
Department of Civil Engineering, Malla Reddy Engineering College (Autonomous), Secunderabad-500100
localvamsi1987@gmail.com

1. Introduction

University Grants Commission has come up with the Choice Based Credit System (CBCS) in which the students have a choice to choose from the prescribed courses, which are referred as core, elective or minor or soft skill courses and they can learn at their own pace and the entire assessment is graded-based on a credit system [1]. The basic idea is to look into the needs of the students so as to keep up-to-date with development of higher education in India and abroad. CBCS aims to redefine the curriculum keeping pace with the liberalization and globalization in education [4]. The advantages of Choice Based Credit System particularly in open elective are as follows [5] [6].

- The CBCS offers a 'cafeteria' approach in which the students can choose open elective courses of their own choice.
- They can learn at their own pace of interest.
- They can also opt for an interdisciplinary approach to learn a subject.
- The students have more scope to enhance their

skills and more scope of taking up case studies, projects and assignments, vocational training including entrepreneurship.

- The system improves the job opportunities of students.
- The system will help in enabling potential employers assess the performance of students on a scientific scale.

One of the positives of selecting an interdisciplinary course from the huge number of open electives, you may choose in any field, as long as you may not meet the prerequisites [1]. This advantage allows you to go broad and add a third concentration, go deep and take more open elective courses in either concentration, or go forward and use all those concepts in the real field [9].

2. Methodology

Open Elective is a powerful tool introduced in the third year first semester of MREC (A) Engineering syllabus which allows a student to design the syllabus of a subject of his own choice which was offering by other departments and then students can then opt for this subject as an open Elective subject (i.e OE-I).With the concept of Open Elective a student can select new subjects from other streams or subjects from the same stream but which were not initially available into the main stream curriculum, after due approval from the Board of Studies followed byratification by the Academic Council.

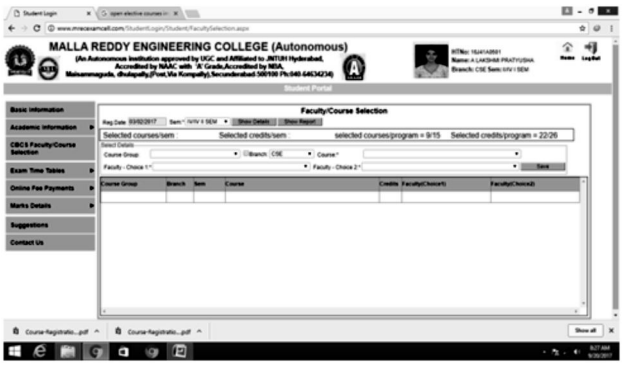

Fig: 1Snapshot of open elective registration window

Every Student is owed with username and password where he can access for all open elective courses offered by all departments. He alone can choose his own interesting open elective course by going through course objective and course outcome in detail in their respective syllabus book.

Open elective can be of great value to all students if properly utilized. Suppose from all the given options for open Elective, you don't find any subject of good use to you or if all the given subjects are of hardly any interest to you from your own department, then you can select course from other department, which really benefit for your career. Now this makes the deal more lucrative. Students are allowed to study a subject of their choice and of your own designed syllabus.Suppose some of the students have finally decided to opt for Open Elective course of Green Building, they alone can be guided by a mentor who is very fond ofthat particular course. Faculty mentor will help student in explaining them the importance of that particular course in learning and employment benefits.

3. Description of Case study

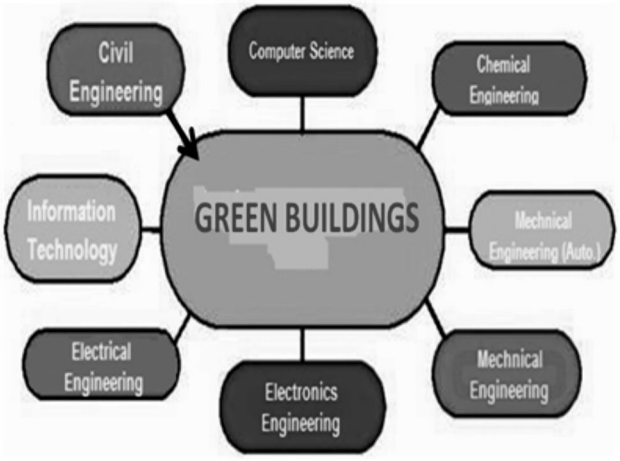

Fig: 2Open Elective Course offering by Civil Department

In order to make the most of student degree program, it is important to complete course requirements in all aspects. Our college curriculum blend of both core and non-core courses that are focused on student degree program and opted Green Building course expand on student interests and fundamental critical thinking skills in social, economical and environmental way.Core courses include subjects that teach necessary and valuable information that are directly related to his field of study. But Green Building open elective course would

provide him with knowledge heneeds to succeed in the present environment.

Green Building classes provide students with a well-rounded green construction education that focuses on environmental impact due to conventional constructions.

Every student is trained individually in knowing the Green materials, Green construction, green material sources, strategies playing to construct a green building, team responsibilities and controls, future directions in green, high performance technologies, carbon accounting green building specifications and finally social, economical, environmental, functional and aesthetical benefits of green building.This course providesvaluable understanding in areas from sustainable and eco friendly construction. Green building course can help student to develop environmental skills he want to have or increase his knowledge of a specialized area within this field. They could even just satisfy their curiosity about knowing the present trend of green construction.

4. Results and observations from students feed back

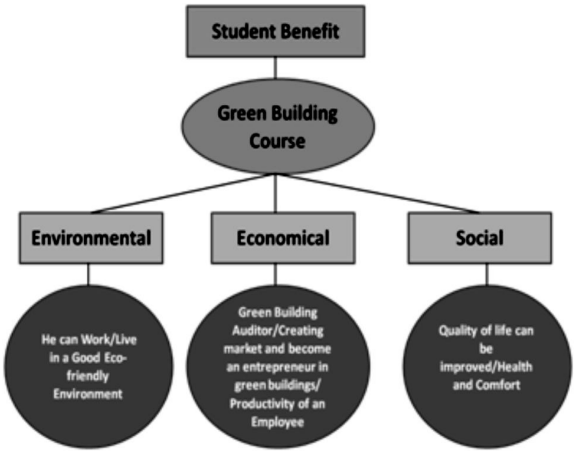

Fig: 3Benefit processes of CSE Students

Observations made from this green building course which was first introduced and opted by CSE students as an open elective. Since a student cannot go through different aspects of green building a course coordinator involvement would be very much useful in delivering course perfectly and satisfies the course objective and outcome.

Each student is viewed as a beneficiary to this society and created a platform for each student to collectinformation on different case studies on green

Fig: 4Pillars of Quality Assessment [2]

buildings, andshare the knowledge with the rest of the class, so that theentire class can gain mastery over various aspects of a green building rating systems, awareness and lots of benefits. Apart from this, the task was also envisaged toenhance many skills in the students, which would help in safeguarding the environment which will attain the Graduate Attributes (GA) asstipulated by the National Board of Accreditation (NBA) inIndia. These are similar to the GAs laid down by ABET.

The following feedback [3] form was given to the students to assess benefits of this course from student's perspective. The feedback questions were framed to assess the utility to the student, the role of the teacher, whether the students want to continue in opting such kind of courses in future for the benefit of knowledge sharing with other students, getting aware on environmental issues and sustainable constructions. The feedback form is shown in Table 1.

The critical evaluation was done in improving the standards of open elective courses which is a part of choice based system [3]. The achievement of objectives of the task was assessed from the feedback forms. A total of 70 student's respondents answered the questionnaire. The ratings and the in ference drawn are tabulated in Table 2.

5. Conclusion

From the analysis of questionnaire survey and general observation of overall course interaction the following conclusions were made.

- About 30 % of pre-final year students exercised the option to have green buildings as their open elective.

- It is interesting to note that all of them are CSE students who have no prior idea of building construction, indicating that efficacy of open elective system.

Table 1: Feedback form for self –Study
Rating: Yes/No

S.No	Questions	Rating
1.	**Are you given a choice to select your open elective by your own?**	
2.	**Do you think this green building subject initiated youinto self_ learning?**	
3.	**Did you find sufficient material to study?**	
4.	**Did this course help you in looking at Environmental issues?**	
5.	**Did this course enhance your usage of tools for your employment?**	
6.	**Do you think it enhanced your Communication skills?**	
7.	**Did the course help you to get aware on sustainable construction?**	
8.	**Were you able to implement your knowledge gained from this course in your real field?**	
9.	**Do you think course coordinator is capable of dealing with this subject?**	
10.	**Do you think self-study should be better than lecturer taught?**	
11.	**Do you think that you are responsible in environmental, social and economical in this society.**	

- It was understood from students' interactions that they have understood the three categories of benefits namely environmental, social and economical from this course.

- It was felt by students that their potential for employability significantly improved after studying this course.

- Students are of the opinions that some of them can become very good entrepreneurs with the knowledge gained from this course.

Table 2: Critical evaluation of student feedback [3]

Question no	Majority of Rating	Percentage Score %	Observation/Remark
1.	Yes	100	Online Opting System
2.	Yes	83	Activity has effectively driven the student to self-learning.
3.	Yes	91	Many students were satisfied with the material and the way faculty presenting every topic in a form of PPT. Students are happy with relevant and sufficient material
4.	Yes	85	Every individual is having responsible to safe guard our earth and environment
5.	Yes	75	By having green buildings knowledge an individual can be a Green building Auditor through IGBC and can be a good entrepreneur.
6.	Yes	80	Overwhelming majority of the students indicated an improvement in theirCommunication skills.
7.	Yes	85	The students felt that even their own house should be a sustainable building
8.	Yes	80	Students felt that their work places are going to be eco-friendly and productivity can be improved
9.	Yes	90	Teachers should spend more time in explaining the concepts and its objectives to learn more about it.
10.	No	95	Guidance should be there
11.	Yes	100	Every individual is responsible in environmental, social and economical issues.

- Student's commitment towards environment and responsibility to the society were considerably improved as an outcome of this course.

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