St. Xavier's Catholic College of Engineering
Internal Quality Assurance Cell
Best Practices

Best Practice-I

1. Title of the Practice:
> Comprehensive Value Education System for the Total Development of the Students

2. Goal:
- To work for the total development of students and to prepare them to achieve the vision of the institution of developing a technically empowered humane society
- To animate the students to have a noble vision and a right value system for their life, avoiding all possible dissipations, so that they become pro-social technocrats and professionals who contribute to the world with humanism and a successful fulfilling life.
- To make the students into positive mature persons, who know their unique selves, the vagaries of the society, the potentialities of their profession and have the ability to relate with others maturely and contribute to industrial and human development.
- To give the students opportunities to experience the realities of our society and practice their leadership and values that they become reinforced in a value based life.

3. The Context:
> Our contemporary Indian society is experiencing a big churning,- while people are very earnest to develop their life by making use of the new opportunities being opened, they are also facing a lot of confusion and tension, violation of human rights and a resurging phenomenon of degradation of life and nature because of wrong priorities and lopsided approaches. With judiciary taking its time for justice, women and children are the major victims in this media saturated world. The social menaces like eve teasing and caste discrimination, and the deep rooted corruption are still a nagging concern to all. Dissipating attractions like drugs, alcohol and even fundamentalism are threats to the healthy development of the students. Helping students to have personal vision for life and healthy relationships and sensitizing them with values such as honesty, hard work, social commitment and patriotism are important. When the staff and the experts sat together with the management to discuss about the total formation of our students, systematic value education program emerged as a task of paramount importance. A clear cut syllabus was developed with a credible strategy to execute it.

4. The Practice:
> Providing service oriented high quality education in a wholesome manner for the marginally deprived society with discipline and human touch without discrimination is our goal. Value education starts from the practice of having a five minute prayer, with readings and song every day at the beginning of the college. The Value Education Program courses have been systematically designed to run parallel with the academic curriculum in three phase every year. (Details of curriculum is given in the Table in section 7).
> Separate hours have been allotted in the regular schedules for such trainings. Bringing in eminent trainers periodically, for intensive special trainings is in vogue. Recently a comprehensive life planning program has been ushered in from the first year.

Shaping one's life and navigating them in their late teens by exposing their own potentials and helping them to be aware of themselves and their uniqueness and accept themselves as they are and helping them find a fitting place for themselves on the global stage are the initial challenges for wholesome education.

Guiding them to fix their vision and dreams realistically in accordance with their personality makes them self-directed. Developing healthy relationship among peers and with complementary gender without intriguing emotional attachments are imported to develop the right attributes, attitudes and responses to work together. Attaining autonomy to take care of themselves and independence to take responsible decision for their own problems are instilled in the minds of the young.

Adapting to the changing environments and getting along with others in spite of differences, surviving and thriving in an atmosphere of competition are emphasized in their 2nd and 3rd years. They are asked to uphold the meaning of 'Universality', as unity in diversity, which is further stated as unity is not uniformity. Personal commitment and leadership skills are inducted to develop their personality to take up social responsibilities and group/team activities with a deep understanding of the dynamics of the society by social analysis. Exposure programs like village visits, social work camps, eco-friendly activities, and programs for school children help them explore their values. Opportunities for choosing the appropriate platforms to groom and nurture their own individual skills and leadership styles are provided for wholesome development.

While CETA (the training cell), Students Welfare Cell, and Counselling Cell come together in the training of the students, NCC, NSS, Women's Cell, Girl Rising, Eco-Club, Science Forum and other many professional associations help animating students and often form platform for the exercise of the values they learn.

5. Evidence of Success:
- Increasing participation of our students for the social causes such as helping the needy, visiting old age homes, empowering girl child, adopting orphanages, voters awareness programs, blood donations, celebrating national festivals in under-privileged village atmosphere, etc. is a very encouraging sign of success.
- The cordial relationship that exists among the students of various backgrounds and departments, and between the staff and students is encouraging.
- It is pleasing to see our alumni have developed themselves into wholesome persons taking life's success and challenges equally. Their professional leadership with amiable and loyal attitudes have received appreciation from their bosses and recruiting companies and have increased the effectiveness in their domain of influence. That is one of the reasons why placement record of our colleges is steadily on the increase.
- It is motivating and encouraging to find that none of our alumni has been accused of involving in any sort of corruption or anti-social activities. The testimony by their recruiters and especially by their spouses about their pleasing character, is the success of this movement.
- Some students take up projects that are connected with the enhancement of the lives of ordinary people.
- Agreeing to disagree, values of tolerance, harmony and peace at any cost, values for cooperation, etc. are some of the professional ethical values they have adopted from these initiatives.
- Students practice life principles like humility, simplicity, love, peace, interdependency among human beings, etc. in their own home to have a fulfilling life.

6. Problems Encountered and Resources Required:

All good things come at a price. Getting resource persons who only give a talk is easy; but the one who walks the talk is more important to make a lasting impression in the minds of the younger generation, who are watchful and evaluate critically. Providing right models to emulate is very powerful and contagious. Lack of conducive environment and resources for nurturing these ideal ethics such as social environment, human resources, financial resources and appropriate time for training is a challenge. Due to the presence of more day scholar students in the institution, we struggle to find appropriate slots to have lengthy workshops with practice in real life situations. Moreover, balancing the pressures of academic curriculum and professional growth along with these very much needed value based courses and activities is a challenge for the students, mainly because of the constraints in time and residence.

7. Notes: Curriculum Details:

Curriculum for the co-curricular activities for the total development of students:

Year	Phase – I	Phase - II	Phase - III
1st Importance of Life	Understanding oneself and one's uniqueness, Self-awareness, Self-acceptance, Self-esteem, Self-confidence, Sense of gratitude.	Understanding one's purpose of life and finding a place in the universe (identity) and accordingly fixing vision/dreams for one's own life.	Manners and etiquettes, Respecting superiors and peers, Mature communication, Healthy relationships with institution, authorities, peers and opposite gender, Gender quality.
2nd Developing of Value System	Attaining personal autonomy, Self-determination to study well and develop into good engineer, Independent decision making.	Knowing the place of technology in the society, choosing what is right and developing a set of personal values and priorities to practice one's vision of life.	Being genuine and serene, Facing challenges of life, Emotional management (EQ), Personal problem solving skills, Eco friendliness.
3rd Experimen-tation and Leadership	Taking up responsibilities and developing leadership, learning technology with social commitment to ameliorate the pains of others and for industrial development.	Developing social awareness by social analysis and exposure programs, understanding peoples' need, Conviction of social harmony and inclusive development, Social Commitment.	Organizing groups, evolving programs for social activities through college professional associations, using technology to empower ordinary people and find solutions for them etc.
4th Beginning Life of Fullness	Foretasting professional life, Planning for a long professional life, Planning for life in adulthood, Learning to balance personal, Professional and social challenges of life, Loyalty to the institutions.	Learning mature social relationships, Developing projects and programs for social development and harmony, Planning to make use of education and profession to achieve personal vision and find meaning in life.	Learning to develop professional networking, Support systems for social contributions, making a difference by Innovation and pro-social entrepreneurship, Finding meaning in life.

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Best Practice-II

1. Title of the Practice:

Resource Development for Teaching and Learning - Comprehensive Course File System.

2. Goal:

To achieve fulfilment in teaching experience by effectively designing the course to prepare comprehensive resources to clearly define what we expect the students to learn by the end of the course.

3. The Context:

The vision of the institution is to ensure optimal human development through quality education and to empower them with cutting edge technology and skills to lead a value-based lifestyle.

Considering the enormous amount of facts to be remembered on one side and advanced skills to be developed for coping with industrial demands on the other side we should be sure of our stand in the process of teaching and learning. Defining the important facts and knowledge that the students should acquire involves the teacher to be specific in preparing the course.

Once the goals are identified, translating them into course content is vital. Providing materials based on quality and relevancy is paramount for the student to demonstrate key learning goals. Well planned teaching and learning methods, field trips, projects, journal exposure, workshops, assignment, discussion, problem sets, etc. enable the students to emerge out with knowledge, skill and with new perspectives in their fields of interest.

4. The Practice:

The course file is the one prepared by the course instructor for a particular course. It contains the syllabus, the objectives and outcomes expected of this course. It provides comprehensive information about the course in relevance to the programme connected with. In short, it defines what the student **needs to know** and be **able to do** at the end of the course, enabling the teacher and the student to set specific measurable goals.

Course File Verification and Auditing: Course file prepared by the instructor will be verified and approved by HOD. Later it will be available for scrutinizing by the academic audit member and the Principal.

Mapping: The course is taught with a clear description, objectives and outcomes. The course outcomes are mapped to Vision, Mission, Programme Educational Objectives and Programme Outcomes.

Syllabus and Extra Syllabus: Being an affiliated college, prescribed syllabus is followed for every course. However, extra topics are taught for the following reasons: a) to prepare the rural students from regional language background to understand the engineering concepts. b) to provide current software proficiency training for industrial absorption c) to provide awareness and exposure on real time applications.

Concept Map: Concept maps connect the main objective of the course to its sub concepts through vertical/horizontal connections. Concept maps visually present the information to grasp ideas much more quickly.

References: The course file details provide all the references used to prepare the course content like text books, reference books, additional text and reference books, relevant journal/magazines, related websites providing additional contents and other references.

Scheme of Evaluation, Course Plan and Target: The students are informed about the scheme of evaluation followed, like three internal exams for internal assessment (20%) and university examination (80%). Separate activities are planned for advanced learners to further their vision to compete with the world, whereas the slow learners are motivated and supported to catch-up with the target.

Course Delivery Plan: The dates and total period required to complete every unit of the course are planned meticulously in advance in accordance with internal assessment exams. Special topics were identified for seminar, assignments, interactive, collaborative and self-learning.

Feedback: Students' feedback on teaching and result analysis are used to understand the learning level and to change the teaching strategy. At the end of the course, the students' and staff's feedbacks on the curriculum is recorded and processed further for enriching the course.

5. Evidence of Success:

Preparing comprehensive course file may be a tedious and time consuming critical task, but it is very rewarding to achieve the vision and mission of the institution. The success of improvement in teaching and learning practice through course file preparation will be directly reflected on pass percentage, placement success rate, willingness to go for higher education, etc.

Traditional effective and efficient way of teaching learning process may falter under today's learning demand and with present generation of students. Adapting new strategies for effective transfer of knowledge is a challenge in this fast-paced world. For example, adapting small group discussion technique offers more student participation to learn from peers through clarification and refinement. The contents once prepared for delivery is the baseline resources, which may be used by other course instructors effectively in subsequent years after customization and updation. Continuous assessment of the success of the system is reflected in increased student motivation and performance in learning.

6. Problems Encountered and Resources Required:

Quality and closer to perfection does not come without hard work. Understanding the students and knowing what interests and life constraints conflict with their academic priorities are itself a major challenges of an instructor. Implementing resource development for teaching and learning through comprehensive course file system needs time and resources for preparation. A saying goes like this, 'If you are not planning, you are planning to fail'. If we fail to prepare systematically the deliverables in teaching and learning process, the system fails.

The resources required for comprehensive resource preparation are text books, reference books, additional materials, internet facilities, journal accessibility, etc. A good quality ring file is needed for each course file preparation and it is a useful resource for first time teachers to start the teaching career. Continuous updating of the course file with present trends, examination evaluation pattern, and model question papers is very much needed to draw the benefits of the system.

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Best Practice-III

1. Title of the Practice:

Students' development by integrated and coherent teaching and learning experiences

2. Goal:

The goal is to expose the rural students to higher order thinking through integrated, coherent learning experiences that contributes towards their academic, personal, social and professional development. For that purpose

Designing the course using a comprehensive course file system

Adapting instruction that is learner centric

Ensuring continuous professional development of faculty members

The concept behind the practice is that students are activated towards excellence by the effective course design, efficient and engaging instruction and continuous quality improvement of the faculty members.

3. The Context:

Institutes and teachers need to meet the principles of good practice in an effort to provide the best learning experience for their students. Institute and teachers are responsible and accountable for designing and delivering a high quality teaching and learning practices.

The curriculum may be provided by the affiliating university. But, the enrichment of the course through course design and instruction is in the hands of the department and teacher, thereby providing educational experiences that contribute to the students' development and their lifelong learning.

Curriculum, course plan and instruction need to match the present day students who are in the era of electronic screens and because of that they have short attention span. Usage of ICT resources and incorporating the latest technology enabled tools in the teaching learning process engages students in higher order thinking like design, analysis and creativity.

Developing ample course materials and resources which accommodate continuous improvement are the need of the hour for development of students and faculty.

4. The Practice:

The teaching learning process starts with subject allocation based on willingness and experience of faculty members. The teacher prepares the course plan using course file system for the allotted courses. Course file system mandates outcomes, content beyond the syllabus, additional references, concept map of the course, analyzing the performance of the last three batches of students in the course and setting target for the present students' attainment, analyzing the academic performance of the present students, planning activities targeting slow learners, planning activities targeting advanced learners, planning activities for participatory learning, preparing schedule of instruction, using different teaching methods, using ICT tools, planning evaluation methods, conducting class committee meetings with faculty members and students, analyzing and taking actions for improvement based on the academic performance of the students, analyzing the students' feedback and taking actions for improvement, taking course exit survey, and evaluation of the students' attainment and planning for further improvement.

The second phase in the practice is the instruction. Faculty members i) Start an instructional unit by clearly stating what the students will be able to do at the end of the instructional unit

thereby connecting the new knowledge with real world, ii) Motivate the students by connecting the new knowledge with the knowledge already they have, iii) Teach the new knowledge, iv) Make the students engage with the new knowledge and v) Provide opportunity to integrate the new knowledge in students' cognitive structure.

In teaching the new knowledge:

ICT enabled teaching tools are used by the faculty members in their teaching process,

Guest lectures from industrial experts are arranged to connect with the latest advancement in the industry,

Publicly available Moodle learning management system, Google class room facilities are used,

Staff and students make use of e-learning resources available in SWAYAM, NPTEL and other online course providers,

Course materials like course notes, presentations, videos and question banks are uploaded by the course instructors in the college automation software, Students make use these study materials,

Staff and students make use of the internet access available in all the computers of the college, and

Students' participation is encouraged in the form of seminar, group discussion, group assignment and quiz.

The third phase is the evaluation of the students' performance and taking appropriate steps for improvement in students' performance.

Faculty members enrich themselves by completing online courses and FDPs on teaching-learning process and on their area of expertise. Performance based appraisal system ensure the quality of the faculty members to prepare the students for higher order thinking.

The course plan and instruction are evaluated by students' feedback, class committee meetings and course file audits.

5. Evidence of Success:

The first major success is the professional development of the students for their life.

Another major evidence of success is the year by year increase in the number of students placed and their per annum salary.

Students enrolling and completing online courses are taking momentum and it is increasing.

Tendency of faculty members to use modern tools and ICT in their teaching practices has increased that resulted in management installing LCD projectors in all the class rooms.

Use of the publicly available learning management systems like Moodle and Google class room is increasing.

More and more study materials are uploaded in the college automation software as e-resources.

A tremendous increase in faculty members completing online courses on teaching learning and on their area of expertise is recorded.

The quality of course file that incorporates the effective course plan and engaging instruction shows a steady improvement.

6. Problems Encountered and Resources Required:

Understanding the students and knowing what interests them and life constraints conflict with their academic priorities are a major challenge of an instructor.

Implementing resource development for teaching and learning through comprehensive course file system needs time and resources for preparation.

Contradiction between the instructional requirements for students' learning and the vast syllabus is a challenge the faculty members to balance.

Practicing all the five Merrill's principles of instruction for each and every instructional unit requires more time and cooperation of the students.

Teachers adapting to the fast changing technology is the another challenge.

If we fail to prepare systematically the deliverables in teaching and learning process, students fail in attaining the stated outcomes.

Accepting the students and taking on the challenges with interest are the major resources the present day teachers required for their students' achievements and for their own development.

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