



**CHANDIGARH  
ENGINEERING COLLEGE  
CGC, LANDRAN, MOHALI**

Building Careers. **Transforming lives.**



# ***INTERNAL QUALITY ASSURANCE CELL (IQAC)***

## ***Process Manual***

***Implemented w.e.f: July 2017***

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## ***VISION***

To be a premier academic institution that fosters diversity, value added education and research, leading to sustainable innovations, and transforming learners into leaders.

## ***MISSION***

- ❖ To provide state of the art infrastructure and engage proficient faculty for enhancing the teaching learning process to deliver quality education.
- ❖ To give a conducive environment for utilizing research abilities to attain new learning for solving industrial problems and societal issues.
- ❖ To collaborate with prominent industries for establishing advanced labs and using their expertise to give contemporary industry exposure to the students and faculty.
- ❖ To cater opportunities for global exposure through association with foreign universities.
- ❖ To extend choice-based career options for students in campus placements, entrepreneurship, and higher studies through career development program.

## ***QUALITY POLICY***

To provide world-class infrastructure, equipment, and well qualified faculty for all round growth of the students including their competence and overall personality meeting ever growing expectations of society.

## CORE VALUES of CEC-CGC

### □ Integrity

- Uphold the highest ethical standards and promote trust and respect.

### □ Inclusiveness

- Value uniqueness of people, cultures, work styles and talents.
- Encompassing and embracing every entity.
- Honor the Dignity of all people.

### □ Compassion

- Bringing humanity to work.
- Demonstrating genuine empathy and respect with consistency.

## **INTERNAL QUALITY ASSURANCE CELL (IQAC)**

### **INTRODUCTION:**

Academics is of utmost priority of any educational institute. Keeping this point in view, a centralized Internal Quality Assurance Cell (IQAC) is formed in the institute. The primary objective of the cell is to ensure quality academics in the institute which gives true joy of learning to students. IQAC is responsible for drafting, regulating, and implementing different academic policies and is meant for smooth & uniform conduction of academics throughout the institute to excel in university results and to develop the students into competent graduate engineers.

The role of IQAC includes semester planning, execution and mentoring of academic activities. The IQAC was established in the institute on 7/3/2017 as per the guidelines of NAAC.

IQAC works for institutionalizing the quality assurance strategies and processes, reviews teaching-learning process, structures & methodologies of operations, and learning outcomes at periodic intervals.

## **OBJECTIVES:**

The objectives of the IQAC are: -

- To achieve excellence in teaching-learning, research, innovation, and overall development of the institute through quality enhancement.
- To ensure standardization as well as the systematization of the procedure.
- To set quality performance indicators in domains of education, research, and administration pertaining to departments/programs and other units of the Institution.
- To evolve and implement stakeholders' feedback assessment.
- To facilitate periodic academic and administrative audit.
- To ensure learning outcomes periodically and record the improvement through various activities.

## **Strategies adopted by IQAC:**

- Provide orientation to newly recruited staff and offer induction training.
- Review academic policies and monitor their effective implementation.
- Review the teaching – learning process & assessment outcomes.
- Collect feedback responses and review action taken reports.
- Collaborative quality activities with other institutions.
- Reinforcement of quality through internal and external audits.
- Plan and monitor the implementation of academic activities.
- Plan add-on/value added courses for quality enhancement.

## INITIATIVES AS PER NEP

- Aim for Academic autonomy and industry-based curriculum.
- Enhancement of Experiential, Participative, Project Based and Problem-Solving Approach based learning rather than rote memorization.
- Multidisciplinary courses
- Startups
- Holistic Development

## COMPOSITION OF THE IQAC

IQAC is constituted under the Chairmanship of the Head of the institution with heads of important academic and administrative units and a few teachers and a few distinguished educationists and representatives of local management and stakeholders.

The composition of the IQAC is as follows:

Designation	Name
<b>Member from Management</b>	Campus Director
<b>Chairperson</b>	Director Principal CEC-CGC
<b>Special Invitee</b>	Director Academics
<b>Coordinator</b>	Dr. Sushil Kamboj
<b>Faculty Members</b>	HoD CSE
	HoD IT
	HoD ME
	HoD ECE
	HoD Applied Science
	HoD MBA
	HoD MCA
	Dr. Gagandeep Jindal
	Mr. Rajeev Sharma
	Dr. Pooja Sahni
	Dr. Bhawna Tandon
	Dr. Sanjeev Sharma
	Mr. Mandeep Devgan
	Dr. Amanpreet Kaur
	Dr. Harsimran Kaur
	Dr. Anuradha Barda
	Ms. Anuradha Saini
<b>Administrative Officer</b>	Finance Manager
<b>Member from Society</b>	Dr. K.S. Saluja (Retired Principal of Post Graduate Govt. College, Sector-46, Chandigarh)
<b>Students</b>	Mr. Aaryan Sachdeva (Roll No. 2002338, CSE)
<b>Alumni</b>	Mr. Shamsher Singh
<b>Employer / Industry</b>	Mr. Nipun Verma
	Mr. Noordeep Singh



## IQAC MEETINGS

- The IQAC holds regular meetings with Head of Departments/Coordinators at least four times a year to take decisions for improving the processes.

## ROLES and RESPONSIBILITIES OF COMMITTEE MEMBERS

### Co-Ordinator of Committee

- Preparation of academic calendar, rules, guidelines, and academic formats.
- Conducting meetings regularly with all members to plan and monitor the academic processes as defined in the process manual.
- Timely release of all structures and formats to all the academic departments.
- Continuous monitoring of academics.
- Informing non-conformities to head of departments and Director - Principal regularly.
- Proposing corrective measures.
- Preparation of minutes of meetings and circulating to respective people.
- Organizing various seminars/expert lectures/workshops to enhance teaching – learning process.
- Collaborations/MOUs Linkages with national/international universities/institution and industries for giving exposure to students.
- Organizing Bridge and Induction courses.
- Continuous evaluation of the departments and monitoring the growth of the departments in various parameters and highlighting the deficiencies for improvement.

### Faculty Members

- Attending meetings conducted by the coordinator of the committee.
- Assisting the coordinator of the committee in preparation of manuals, guidelines, and formats.
- Customizing the central formats for their respective departments.
- Monitoring of academic process of departments at specific intervals.
- Monitoring of attendance of students and sharing the important details with parents at regular intervals.
- Reporting the monitoring status to coordinator of the committee.
- Submission of duly filled academic readiness and audit Performa's to the coordinator and experts as per guidelines of IQAC.

- Ensuring the preparation of course files and lab manuals by the faculty.
- Ensuring the maintenance of records of the departments as per formats and structures of IQAC.
- Implementation of Outcome Based Education (OBE) in the departments in terms of CO attainment, PO-PSO attainment. Continuous improvement must be ensured after evaluating targets.
- Analysis of results – University as well as MST results and issuance of Appreciation letters, Reprimand and Warning letters.
- Identification of weak and bright students as per IQAC guidelines and conduction of remedial classes for weak students and encouraging the bright students.
- Motivating students to complete offered value added/add-on courses and certifications to increase employability.

## ACADEMIC PLANNING AND MONITORING

### Introduction

Good quality academic planning and monitoring is an essential element in providing consistent response to ensure a sustainable future for the institute. Naturally, it is important that academic planning and monitoring process is consistent and understood, as is monitoring overall performance.

The planning and monitoring process therefore needs to be open and transparent in order to improve dialogue and understanding between all stakeholders of the institute.

### **The objectives/functions of academic planning and monitoring process is:**

- To ensure that all departments have done proper planning before the start of semester for conduction of lectures, practicals, and other co-curricular and extracurricular activities.
- To ensure that effective teaching learning is taking place throughout the semester.
- To ensure that fair continuous assessment and evaluation is taking place to support teaching learning.
- To ensure that slow learners and advanced learners are taken care of as per their needs.
- To ensure that students are mentored for academic as well as personality development.
- To ensure the attainment of course outcomes and eventually the program outcomes.

## Process of Effective Academic Planning and Monitoring

The process of academic planning and monitoring should be carried out through a systematic procedure as shown in the following table:

Sr	Activity	Time Duration
1	Institute Academic Calendar	To be prepared before the start of semester on the Basis of Affiliating university Academic calendar
2	Department Academic Calendar	To be prepared before the start of semester on the Basis of Institute Academic calendar
3	Academic Readiness / Administrative Readiness Audit	Academic Readiness: One to two weeks prior to start of Semester Administrative Readiness Audit: Once in a year 2 weeks prior start of session.
4	Induction Program	To be done in one week from the one day of Orientation Program
5	Bridge Course*	To be done in 1 to 2 weeks after completion of induction program <i>*: Bridge Courses are to be conducted wherever required</i>
6	Bridge course and Induction Program Feedback	Feedback to be taken from students within three working days after completion of Induction Program. Analysis and action planned/taken to be sent to IQAC within one week after taking feedback
7	Student feedback	To be taken twice: <ul style="list-style-type: none"> <li>• Within three working days after completion of 1<sup>st</sup> MST</li> <li>• Within three working days after completion of 2<sup>nd</sup> MST</li> </ul> Analysis and action planned/taken to be sent to IQAC within one week after taking feedback
8	Teacher feedback	To be taken in the 1 <sup>st</sup> week of the start of semester. Analysis and action planned/taken to be sent to IQAC within one week after taking feedback

9	Alumni feedback	To be taken once a year at the time of alumni meet. Analysis and action planned/taken to be sent to IQAC within one week after taking feedback
10	Syllabus Coverage Status	To be taken twice: <ul style="list-style-type: none"> <li>One week prior to start of 1<sup>st</sup> MST</li> <li>One week prior to start of 2<sup>nd</sup> MST</li> </ul> Syllabus Coverage report and action planned/taken to be sent to IQAC within one working day after taking syllabus coverage status
11	Attendance Monitoring	To be taken twice: <ul style="list-style-type: none"> <li>10 days prior to the start of 1<sup>st</sup> MST.</li> <li>10 days prior to the start of 2<sup>nd</sup> MST.</li> </ul> Attendance report and action planned/taken to be sent to IQAC within one working day after taking syllabus coverage status
12	Assignments	To be given twice: <ul style="list-style-type: none"> <li>At least 10 days prior to the start of 1<sup>st</sup> MST.</li> <li>At least 10 days prior to start of 2<sup>nd</sup> MST</li> </ul>
13	Assignment Sheets Checking	To be checked and returned to students before start of MSTs
14	MST Question Papers	To be prepared one week prior to start of MSTs
15	MST Sheets Checking	Within 05 working days after the day of MST
16	Final Theory and Practical Exams	To be conducted as per the timeline given by university
17	Internal Assessment	To be prepared and uploaded as per the timeline given by university
18	Result Analysis	Within 10 days after MST and within 10 days after declaration of University Results
19	CO, PO, PSO* attainment	To be calculated within 10 days after declaration of University Results <i>*PSO attainment is to be calculated wherever applicable</i>

20	Weak and bright students Identification	To be done twice: <ul style="list-style-type: none"> <li>• Within 10 days after MST on the basis of MST Results</li> <li>• Within 10 days after declaration of University Results On the basis of University Results</li> </ul>
21	Collaborations/Linkages with National/International Universities/Institutions and Industries	To be done for quality enhancement throughout the year whenever possible
22	C2B Certifications courses	May to July
23	Add on/Value added Certifications courses	Throughout the year
24	Academic Audit	In September / October

*\*All feedback is to be taken through Google Form.*

*\*It is the responsibility of the Departments to conduct all the activities as per the timeline given.*

## **Institute Academic Calendar**

Institute prepares its academic calendar taking into consideration the calendar provided by the affiliating university. In addition, the department academic calendar is created in accordance with the institute academic calendar. The Institute academic calendar includes the following schedule:

- Schedule of commencement of classes
- Holidays
- Schedule for MSTs (Mid Semester Tests)
- Preparatory holidays
- End semester Theory examination
- End semester practical examination
- Institutional training schedule etc.

## **Department Academic Calendar**

All departments will prepare the department academic calendar in line with the Institute Academic calendar and share with the IQAC. The department will add all the important events planned for the upcoming semester in the calendar.

## **Readiness Audit**

For checking the readiness of Departments for new semester, Readiness audit is conducted in the beginning of the semester, one to two weeks prior to the start of classes. Before the beginning of the semester, an IQAC meeting is held and a tentative schedule, checklist etc. are discussed. A list of internal and external auditors for conducting the readiness audit are finalized. A circular, schedule and guidelines regarding the readiness audit are released by the IQAC. An orientation session is organized for the auditors. Department-wise readiness audit is done by the auditors. The department is given suggestions and recommendations for further improvement.

## **Bridge course and Induction Program and their Feedback**

### **Feedbacks from various Stakeholders and its analysis and action taken**

Feedback is to be taken from various stakeholders which include Students, Faculty members, Alumni and Employers. The Departments will take the feedback according to the guidelines given by IQAC, do the analysis, take required action, and send the analysis and action taken report to IQAC. IQAC will monitor the analysis and action taken report.

### **Syllabus coverage status**

Syllabus coverage status is to be taken twice in a semester i.e., 1st time one week prior to start of MST- 1 and 2nd time one week prior to start of MST- 2. In the case of theory subjects, 50% of the syllabus has to be covered before MST- 1 and the remaining 50% syllabus to be covered before MST 2. If in any subject the syllabus coverage falls short of the required percentage, that needs to be compensated by taking extra/adjustment classes before the start of MSTs. In the case of practical subjects, it is advisable to cover 50% of the total experiments / practicals before MST-1 and 100% experiments / practical's to be covered before MST-2. If in any lab subject the syllabus coverage falls short of the required percentage, that needs to be compensated by taking extra/adjustment lab classes.

### **Attendance Monitoring Status**

Student Attendance status is to be taken twice in a semester i.e. 1st time 10 days prior to start of MST-1 and 2nd time 10 days prior to start of MST-2. For the students with attendance less than 60% in attendance status taken 1st time i.e. 10 days prior to start of MST-1. Various corrective actions are to be taken by the departments like

- Mentors to inform parents of the students telephonically.



- Mentors will send the letters to parents of students who have poor performance in
- MSTs and attendance less than 60%.

For the students with attendance less than 75% in attendance status taken 2nd time i.e. 10 days prior to start of MST-2, following corrective actions are to be taken by the departments

- Mentors to inform parents of the students telephonically.
- Mentors will send the letters to parents of students who have poor performance in
- MSTs and attendance less than 75%.

### **MST/Assignments designing and checking of MST Sheets and Assignments**

MST question papers and assignments should be prepared by course coordinators and faculty teaching the same subject, taking into account previous years' university question papers, university paper pattern, reference books, COs coverage and Bloom's Taxonomy. After approval by IQAC Member and HOD, they must be submitted to the Sessional committee. Answer sheets are marked strictly in accordance with the distribution of marks and evaluation scheme laid down by the course coordinators in evaluation Centers (Department wise). Marked sheets are then shown to students to sign with "Seen or satisfactory". Sample answer sheets are checked by HoD, Course Coordinator and IQAC member.

### **Result Analysis**

The departments need to analyze the results – both University as well as MSTs strictly as per the formats and guidelines released by IQAC. And as per SOPs of result analysis, appreciation letters and reprimand letters to be issued to the concerned faculty.

## CO, PO and PSO attainment

The course coordinators in consultation with subject teachers will finalize the course outcome by taking reference from IKGPTU syllabus. Course coordinator takes care that COs must state the major skills, knowledge, attitude, or ability that students will acquire, and it should drive program outcomes. Bloom's taxonomy is also taken in to consideration during the formation of COs.

- Program outcomes (POs) are the knowledge, skills, and abilities that students should possess when they graduate from a program. These are the graduate attributes for quality assurance like Problem analysis, Environment and Sustainability, Ethics, Individual and Teamwork, Communication, Lifelong learning etc.
- Program Specific Outcomes (PSOs) are statements that describe what the graduates of a specific program should be able to do after completing the course. POs, PSOs, and COs are disseminated to the stakeholders through the following channels like Digital media, Website, Lab manuals, Course files and Prominent Places in departments.
- For POs/PSOs attainment, two assessment tools are used Direct Assessment and Indirect Assessment. These assessments are conducted on a regular basis, enabling the faculty to assist the students who may not be attaining the required level of POs/PSOs. This ensures that all students attain the minimum level of each Program outcomes and Program specific outcomes (PO and PSO).80 % of Direct PO/PSO Attainment and 20% of Indirect PO/PSO Attainment computes total POs/PSOs attainment.

The department will calculate the attainment of COs, PO-PSO and share with the IQAC after the results are announced. The department will also set the targets of POs and PSOs for continuous growth.

## Identification of Weak and Bright students

**Weak students:** The main objective is to improve the overall performance and results. Students having reappears in the previous semester should be able to clear their backlogs.

Weak Students are to be identified on the basis of 1st MST and University academic results. Performance of slow learners is to be monitored by the respective Class Counsellors & Subject Teachers and corrective measures need to be taken. For slow learners

- Parents/Guardians are to be informed about the 1st MST marks, attendance and overall performance of weak students.
- Remedial classes (subject wise) are to be arranged for weak students on the basis of their 1st MST result. A proper timetable for remedial classes is to be prepared and displayed by the Department.
- Topic specific / Unit specific reference material is to be delivered by subject teachers on the basis of 1st and 2nd MST results so as to improve the university results of weak students.
- Specially designed selective course reference material (CRM) is to be provided to the students with reappears in last semester university examinations.
- Regular counseling and motivation is to be done by Class Counsellors (CCs).
- Reference books and sample questions are to be provided to the students for practice purpose.
- Minimum 2 years' previous university question papers with solutions are to be provided to the weak students of both category 1 and 2.

**Bright Students:** The main objective is to move students towards achieving excellence in academics and involvement of students in research activities.

Bright students are to be identified on the following basis:

### **Category-1**

Those students who have scored marks more than 80% or 08 SGPA in the last semester university examination. The department is authorized to change the minimum marks (80% or 08 SGPA) criteria to identify the bright students as per the nature of Program or difficulty level of a particular subject.

### **Category-2**

The students who are all clear with marks of not less than 70% or SGPA not less than 07 and are good in certifications/research activities /project work/patents etc.

### **Action to be taken for Bright Students**

- The bright students are awarded; they are awarded medals during convocation.
- To encourage them to participate in conferences, seminars, patents, publications, various other departmental events, placement activities and competitive exams etc.
- Advance trainings are provided for basic studies.
- Department should share the details of available platforms of opportunities for idea generation, incubation, research, copy rights patents etc. Full support will be provided to the students while keeping in mind their areas of interest.
- Formation of bright students, study group and the monthly meeting by Chief Class Counselor with the bright students.
- Bright students are to be provided with extra books from library.

Note: The Departments may add few more action taken activities / points from their end.

## **Collaborations/Linkages with National/International Universities / Institutions and Industries**

The IQAC as well as various departments will be responsible for arranging various quality enhancement activities under MOUs with various universities/institutions and industries. They should also put efforts to have new collaborations/linkages with reputed institutions and industries.

## **C2B Certification courses and various Add-on/Value added Courses**

As per guidelines of IQAC, all students need to complete certifications courses and different add-on / value added courses in each semester. The departments will guide students and prepare a report of completion of certificates student wise and will submit the consolidated report to the IQAC.

## **Academic Audit**

For evaluating the performance of Departments and further quality improvement, Academic audit is conducted in the month of September or October, after the completion of academic session. After the end of academic session IQAC meeting is held and tentative schedule, checklist etc. are discussed. A list of internal and external auditors for conducting the academic audit are finalized. A circular, schedule and guidelines regarding the academic audit are released by the IQAC. An orientation session is organized for the auditors. Department wise Academic audit is done by the auditors. The Department is given suggestions and recommendations for further improvement.

## **Mentor and Mentee Status**

Mentoring system helps to support the students in their academic, curricular, co-curricular, and other extracurricular activities through the use of mentoring system. A class of 30-35 students has one class counselor (CC) assigned to them. The CC stays in touch with his students, and they converse with one another via

phone calls, WhatsApp groups, E-mails etc. Any student may speak with CC individually or in class. The departments will assign the CCs for the students. All CCs will prepare a file as per index given by IQAC with complete details. The Head of departments will ensure for the same and the status of the same will be shared with IQAC on regular basis.

## **Course Files and Lab Manuals**

Course files and lab manuals must be ready before the commencement of the new semester. It should be prepared strictly as per the index issued by the IQAC. They will be checked during the academic readiness audit as well as they can be checked anytime between the semesters.

## **Project Monitoring**

Departments must allocate guides and project topics at the start of the semester by collecting choices from students. As all departments are bound to follow the guidelines specified by the DPC (Department Project Committee). The monitoring process involves the monitoring of allocation of guides, supervision of projects by guides, project reviews etc. All students must be encouraged to complete projects/ internships in every semester as applicable. The details must be shared with the IQAC by the respective departments.

## **EXPECTED OUTCOME**

- Timely conduction of Academic activities
- Timely maintenance of records
- Faculty Dedication
- Improvement in University results
- Improvement in the quality of student graduates.
- Improvement in placements.
- Growth in various research activities like patents, projects, publications, startups etc.
- Awards / rankings of the institute

## FORMATS: All formats of various academic planning and monitoring processes

S. No.	Format	Guidelines
1.	Academic Readiness / Administrative Readiness Audit	Academic Readiness: One to two weeks prior to start of Semester Administrative Readiness Audit: Once in a year 2 weeks prior start of session.
2.	Feedbacks – Student, Teacher and Alumni	Student Feedback is taken twice in a semester (10 days prior of the MST's) Teacher Feedback was taken the 1 <sup>st</sup> week of the semester. Alumni Feedback is taken once a year when alumni meet.
3.	Syllabus Coverage Status	To be taken twice: <ul style="list-style-type: none"> <li>One week prior to start of 1<sup>st</sup> MST</li> <li>One week prior to start of 2<sup>nd</sup> MST</li> </ul> Syllabus Coverage report and action planned/taken to be sent to IQAC within one working day after taking syllabus coverage status
4.	Attendance Monitoring	To be taken twice: <ul style="list-style-type: none"> <li>10 days prior to start of 1<sup>st</sup> MST</li> <li>10 days prior to start of 2<sup>nd</sup> MST</li> </ul> Attendance report and action planned/taken to be sent to IQAC within one working day after taking syllabus coverage status
5.	Assignments	To be given twice: <ul style="list-style-type: none"> <li>Atleast 10 days prior to start of 1<sup>st</sup> MST</li> <li>Atleast 10 days prior to start of 2<sup>nd</sup> MST</li> </ul>
6.	Assignment Sheets Checking	To be checked and returned to students before start of MSTs
7.	MST Question Papers	To be prepared one week prior to start of MSTs
8.	MST Sheets Checking	Within 05 working days after the day of MST
9.	Final Theory and Practical Exams	To be conducted as per the timeline given by University
10.	Internal Assessment	To be prepared and uploaded as per the timeline given by University

11.	Result Analysis	Within 10 days after MST and within 10 days after declaration of University Results
12.	CO, PO, PSO* attainment	To be calculated within 10 days after declaration of University Results *: PSO attainment is to be calculated wherever applicable
13.	Weak and bright students Identification	To be done twice: <ul style="list-style-type: none"> <li>• Within 10 days after MST on the basis of MST Results</li> <li>• Within 10 days after declaration of University Results On the basis of University Results</li> </ul>
14.	Collaborations/Linkages with National/International Universities/Institutions and Industries	To be done for quality enhancement throughout the year whenever possible
15.	C2B Certifications courses	May to July
16.	Add on/Value added Certifications courses	Throughout the year
17.	Academic Audit	In September / October