erut Institute of Engineering and Technology, Meerut

ROADMAPS

2025-26 to 2028-29

Department of Electronics & Communication Engineering

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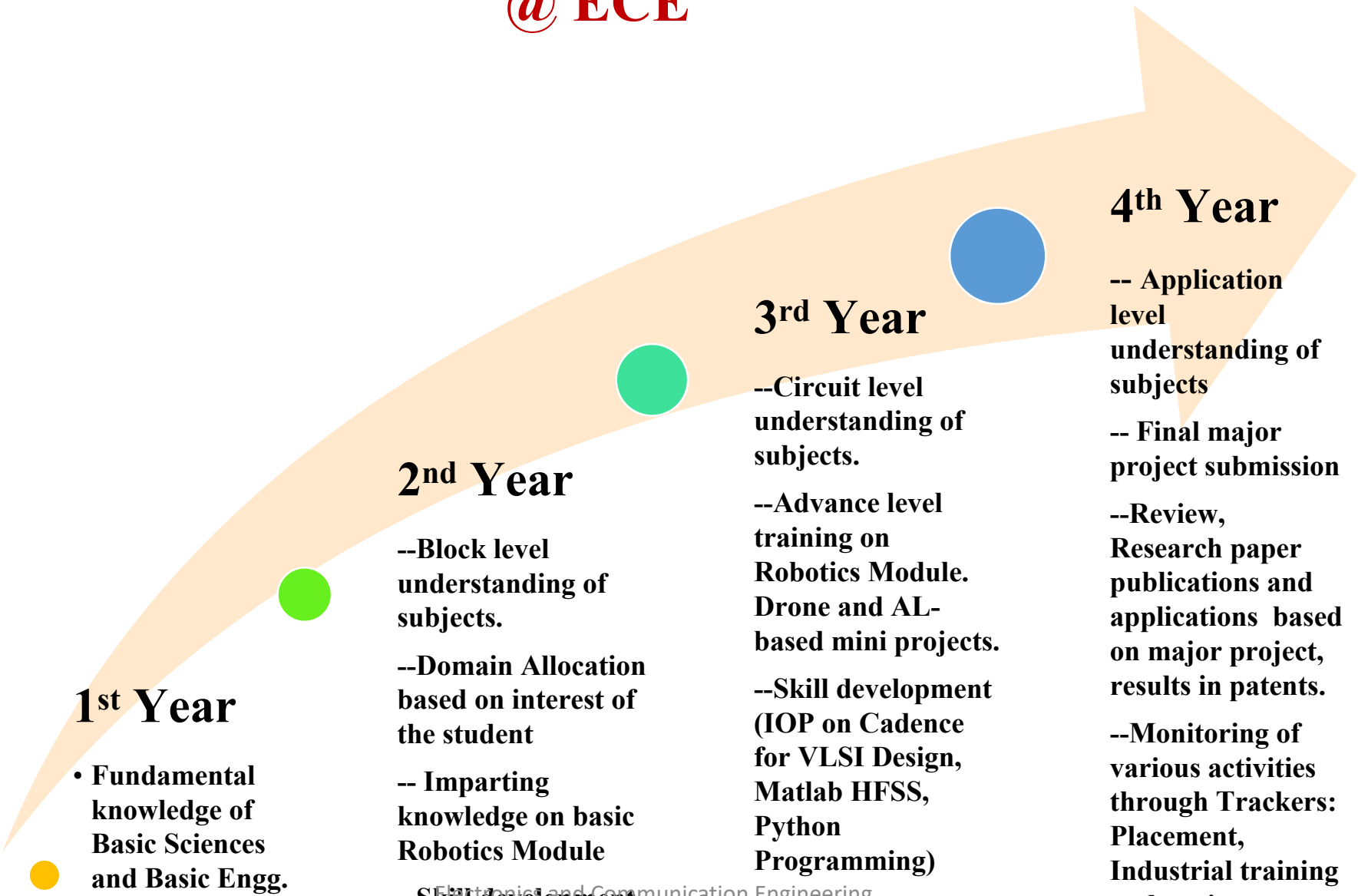
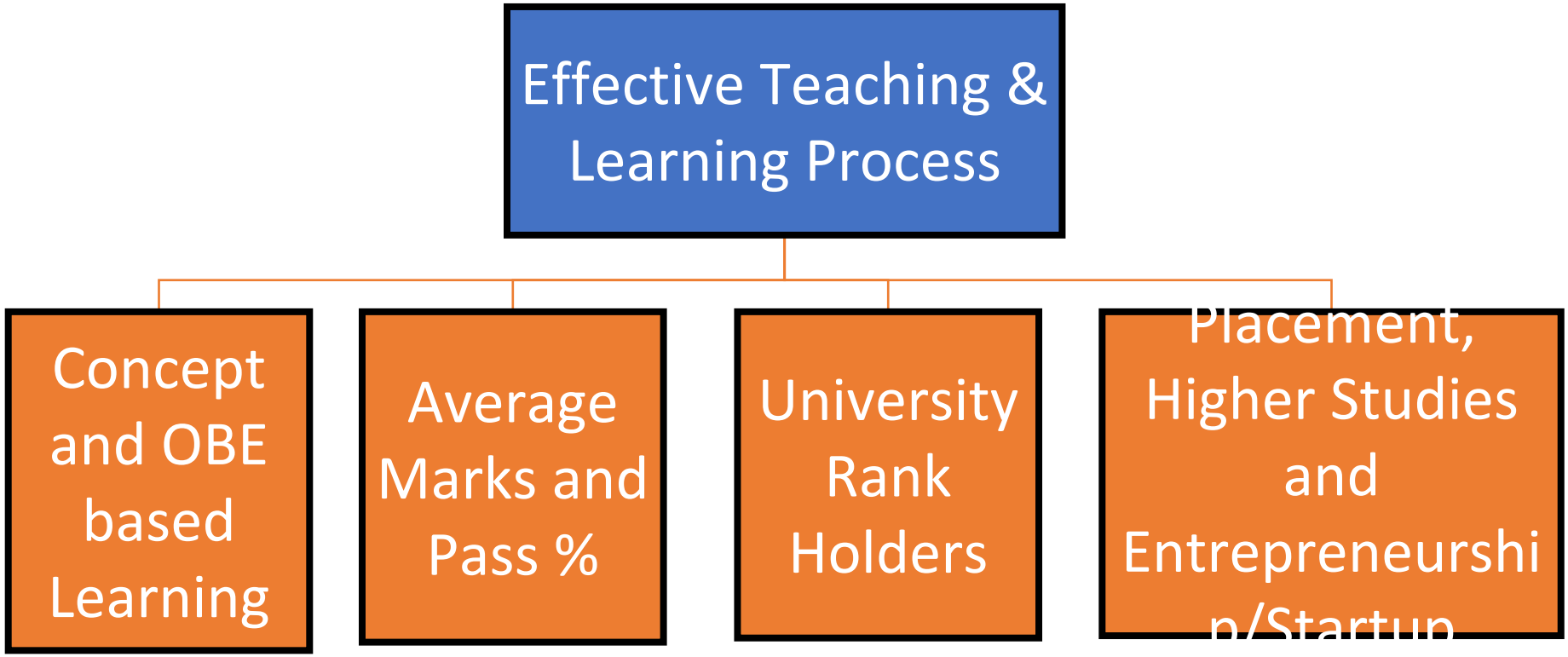
1. Teaching Learning Process & Monitoring

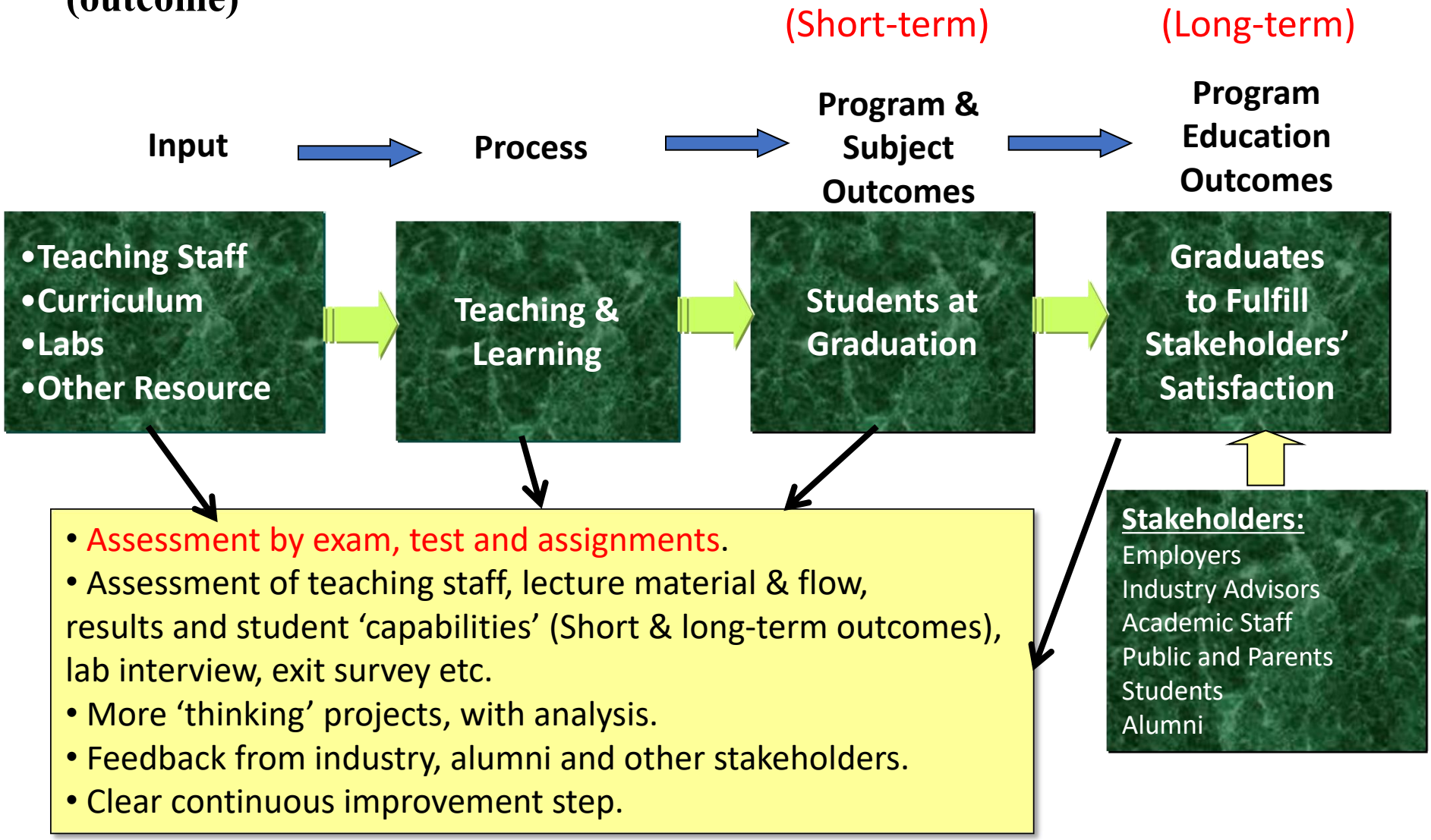
Roadmap for 4 years of Teaching Learning Process @ ECE



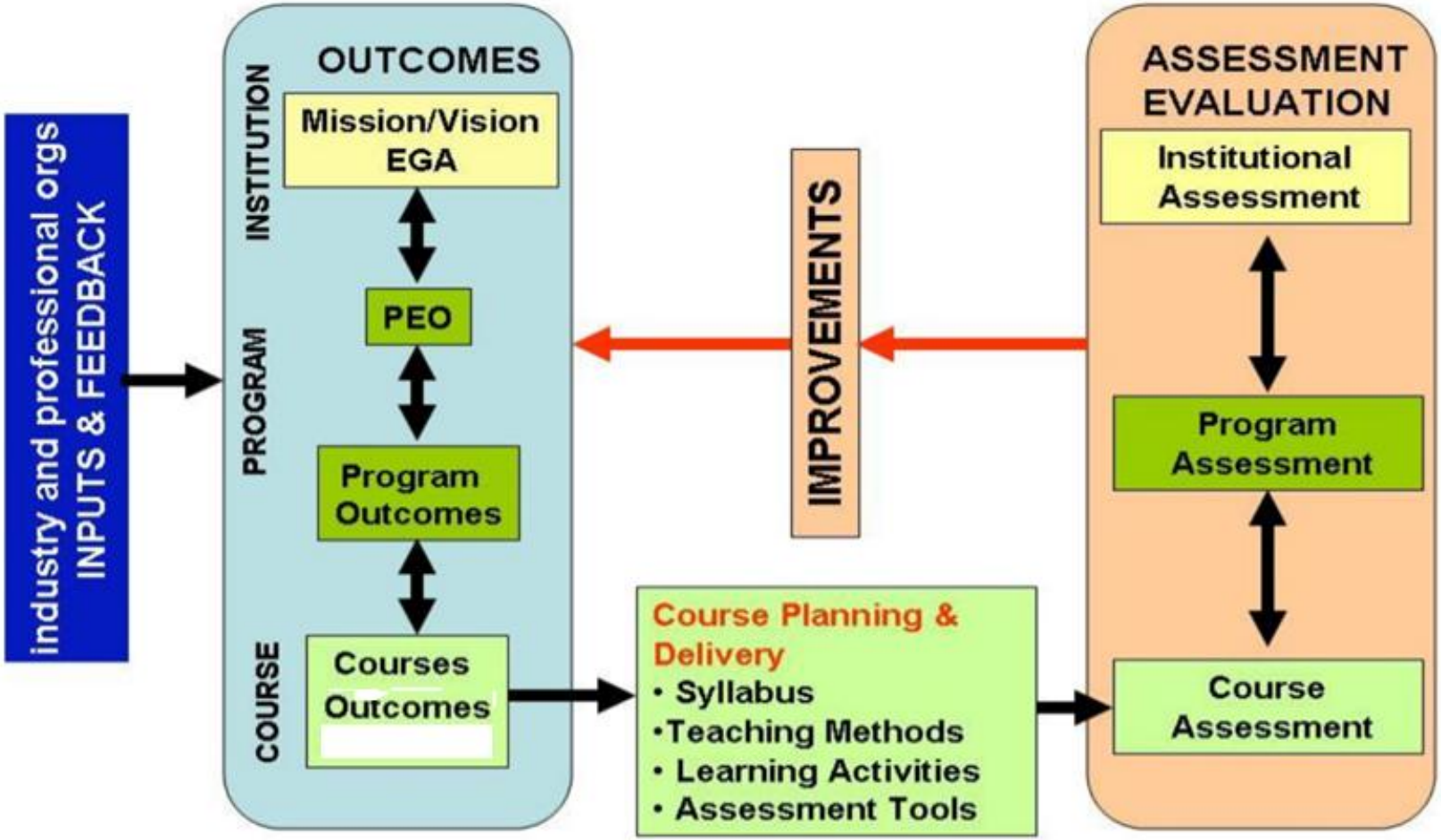

Effective Teaching & Learning Process
Concept and OBE based Learning
Average Marks and Pass %
University Rank Holders
Placement, Higher Studies and Entrepreneurship/Startup

Outcome-Based Education Versus Traditional Education Process

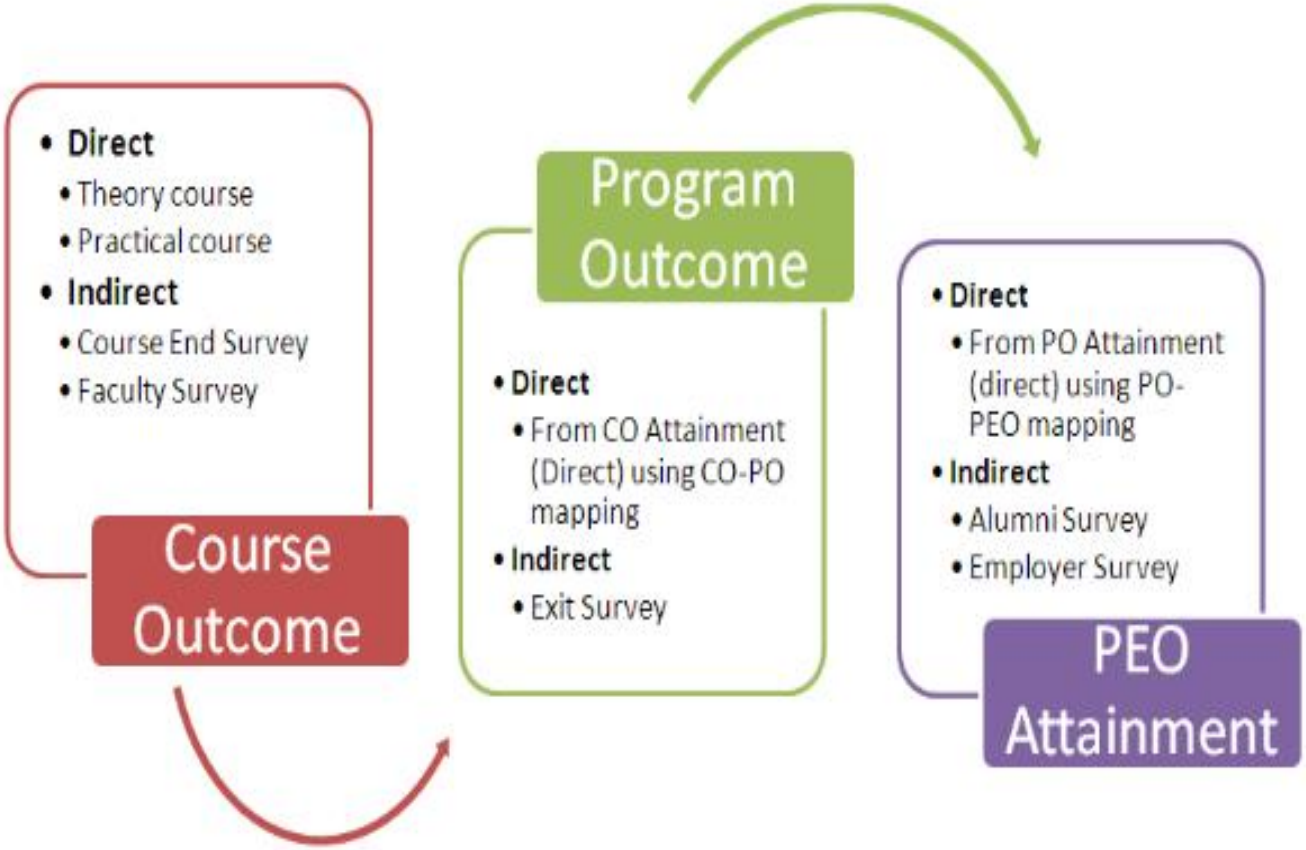
- OBE shifts from measuring input and process to **include measuring the output (outcome)**



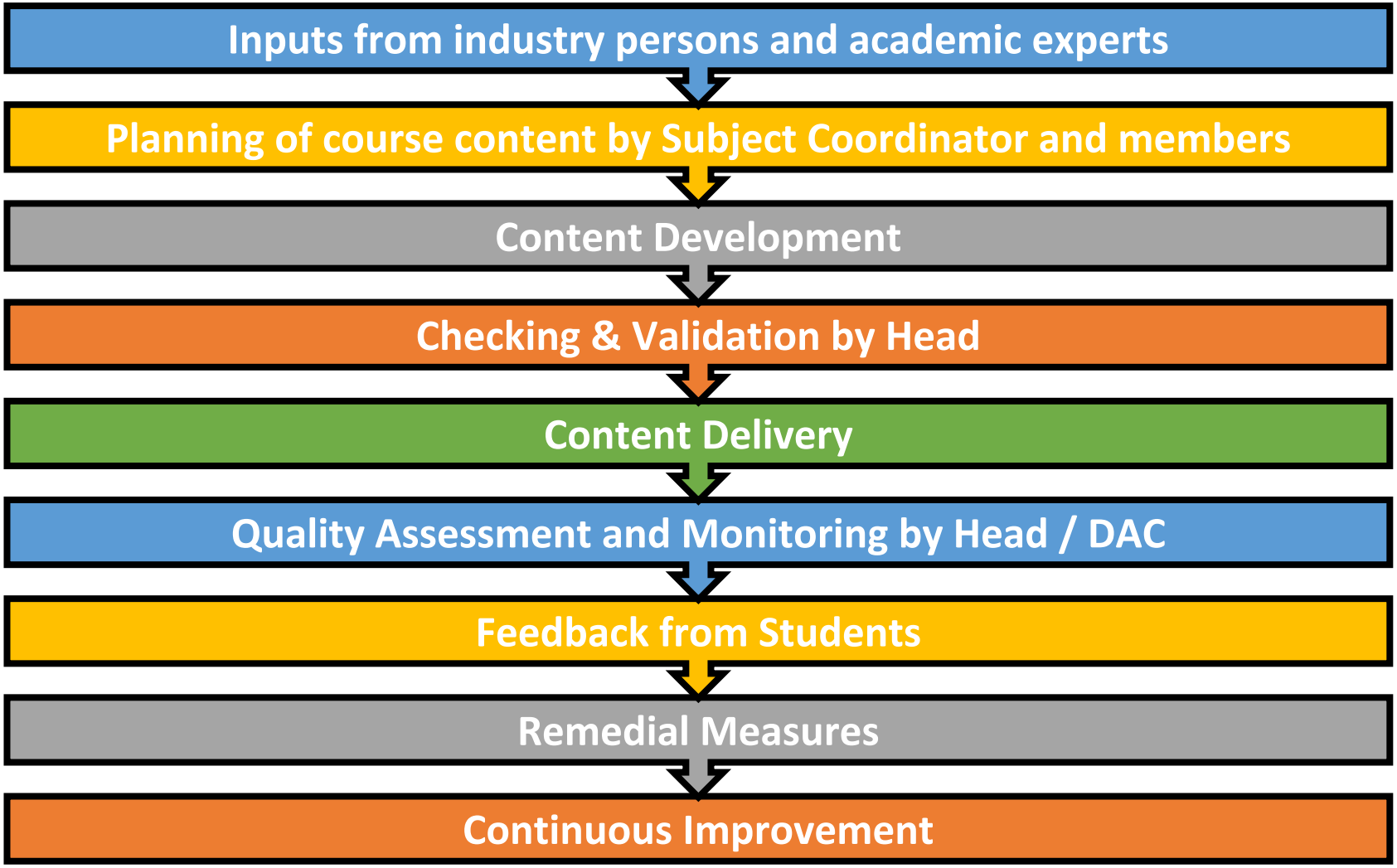
The OBE Framework



Outcome Based Education



Concept based Learning through Content Development, Delivery & Monitoring for Effective Teaching Learning Process



Procedure for Effective Teaching Process Implementation

- Content Development Plan
- Content Delivery Plan
- Content Delivery Monitoring Mechanism
- Remedial Measures
- Mentor Mentee
- Continuous Improvement Plan
- Course Feedback

1. Content Development Plan – Basic Requirements

The content should:

- Clearly define course objective and mapping with POs & PSOs
- Be simple and effective
- Be prepared in own's language
- Have solutions to all numerical problems and previous year University exam questions
- Have additional questions for cracking IES/ GATE etc.
- Include inputs from the industries and academic experts
- Include assignments, quizzes, tutorial sheets etc.

2. Content Development Plan – Steps

The content should have:

- Introduction of the topic (explaining What / Why/ Where / How)
- What is the need of studying the topic?
- Construction details (if it is device)
- Working / Operation of the topic
- Characteristics related to topic
- Advantages & Disadvantages
- Potential applications of the topic taught
- Circuit implementation in industrial applications (if applicable)
- Include relevant case studies
- Most important 20 questions per unit with solutions

3. Content Delivery – Basic Requirements

- Content should be simple in language.
- Starting each class with clear objective
- Effectively managing a classroom
- Engaging students with questioning strategies
- Consolidating the lecture at the end of a period

4. Content Delivery Monitoring Mechanism

- Head should ensure the quality of content delivery.
- DQAC member should take class and faculty should learn how to teach.
- Head /DQAC should ensure the implementation of effective content.
- Subject Coordinator should lead from the front for content development, planning of content delivery and its effective implementation.
- Regular feedback from students.
- Random feedback from students.
- Database for e-content must be maintained and monitored on regular basis.
- The database should have accessibility only for students and faculty members.

5. Mentor Mentee System

- Every student has to follow mentor mentee system
- Every student is allotted one Mentor, if any student does not know his or her mentor name he may contact PL/HOD for the same.
- Student has to be in contact of Mentor
- Any kind of personal or academic problem can be shared with mentor for its solution.
- All students should share his or her achievements with mentors.

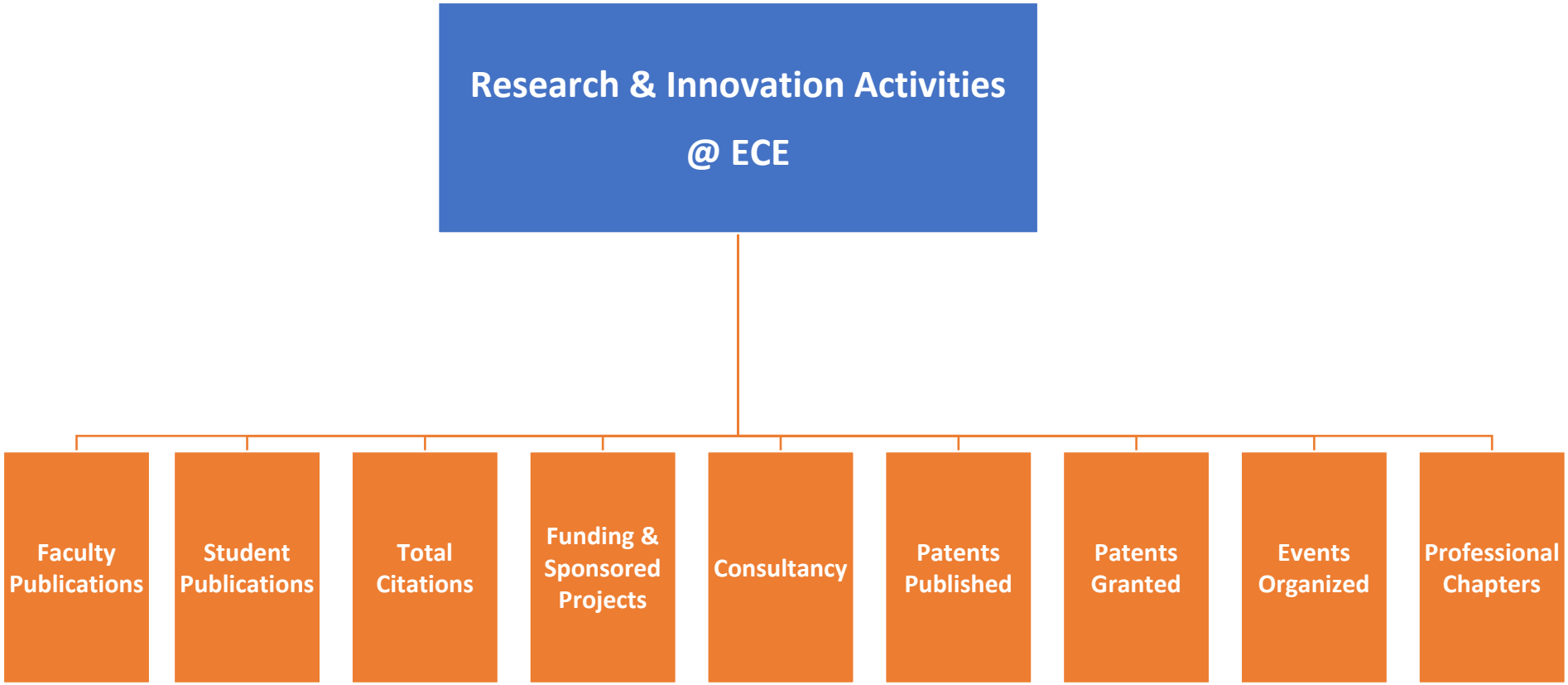
6. Remedial Measures & Continuous Improvement

- As per the feedback received from stakeholders, remedial measures should be adopted for improving the course content.
- The concerned Subject Coordinators must ensure the implementation of remedial measures.
- After measuring the remedial measures, the course content will be updated and improvised for the continuous improvement.

7. Course Feedback

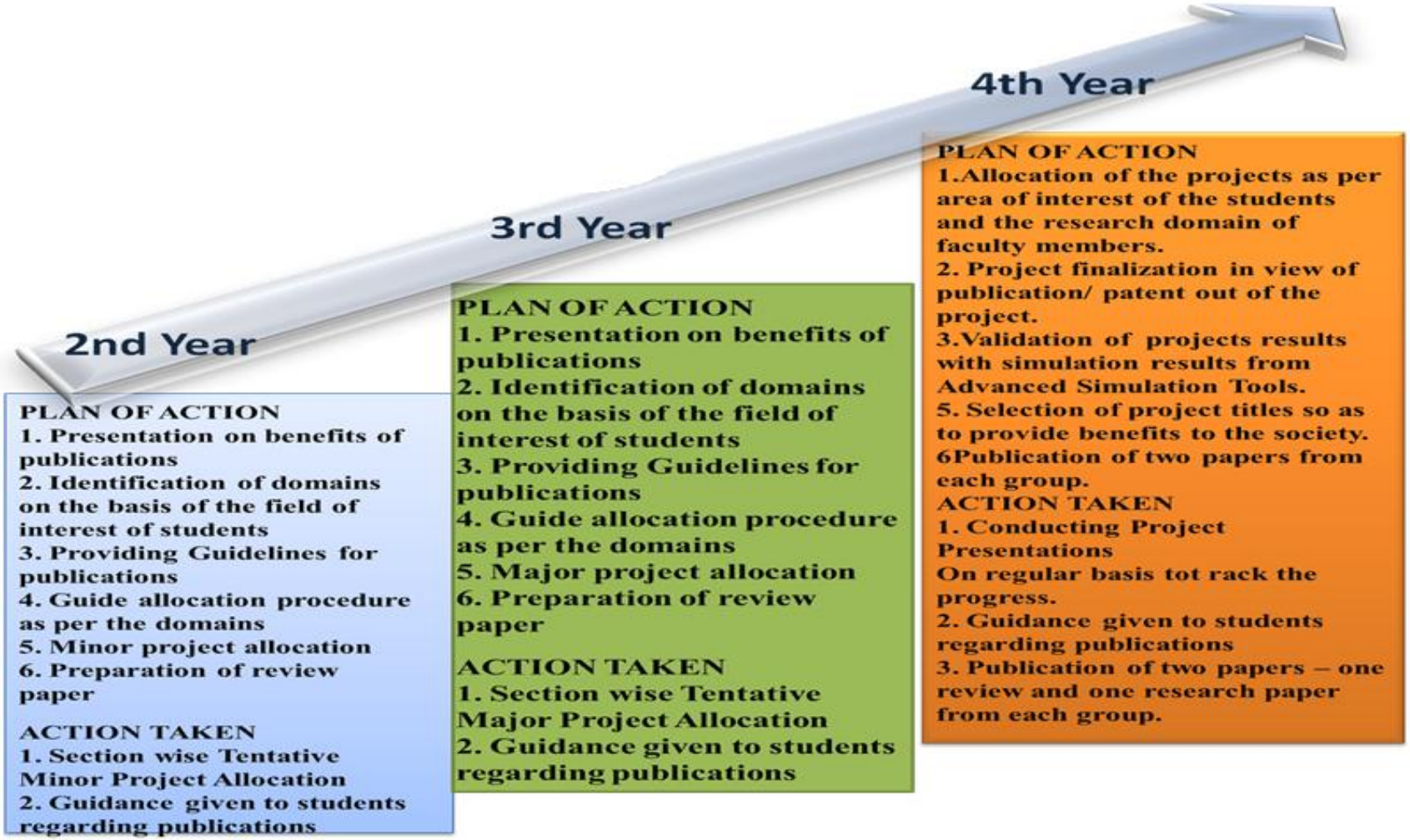
- Course/subjects feedback of all the subjects will be taken twice in a semester.
- In case of any doubt/problem firstly student should contact concern subject teacher for its solution
- In case problem does not resolve he may contact PL/HOD for its solution.

2. Research & Innovation


Research & Innovation Activities @ ECE
Faculty Publications
Student Publications
Total Citations
Funding & Sponsored Projects
Consultancy
Patents Published
Patents Granted
Events Organized
Professional Chapters

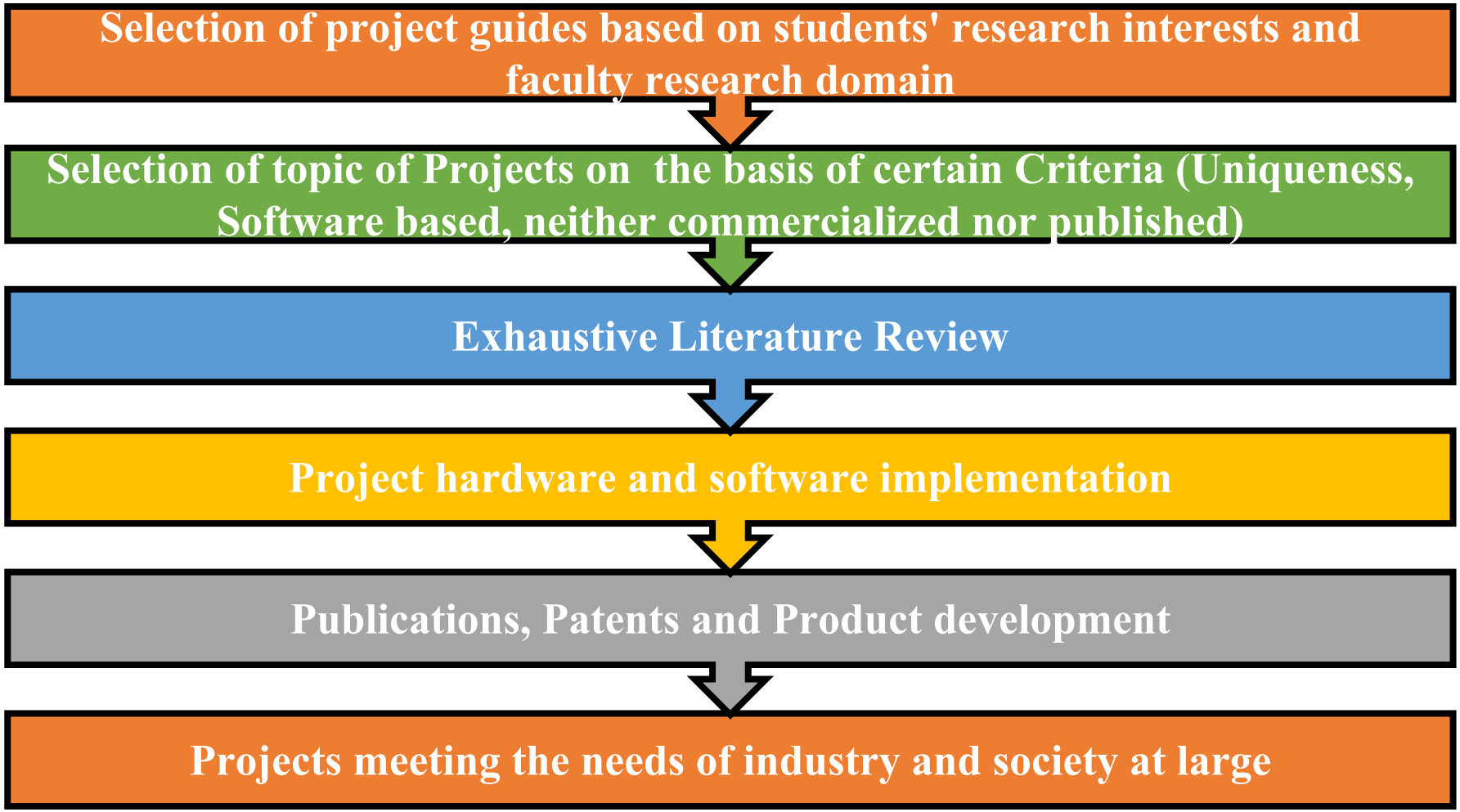
Roadmap for Research & Innovation Activities @ECE

ROADMAP FOR STUDENT PUBLICATIONS @ ECE for Batch 2022-26



Roadmap for Research & Innovation Activities @ECE

PROCEDURE FOLLOWED FOR STUDENT PUBLICATIONS @ ECE for Batch 2022-26



Roadmap for Research & Innovation Activities @ECE

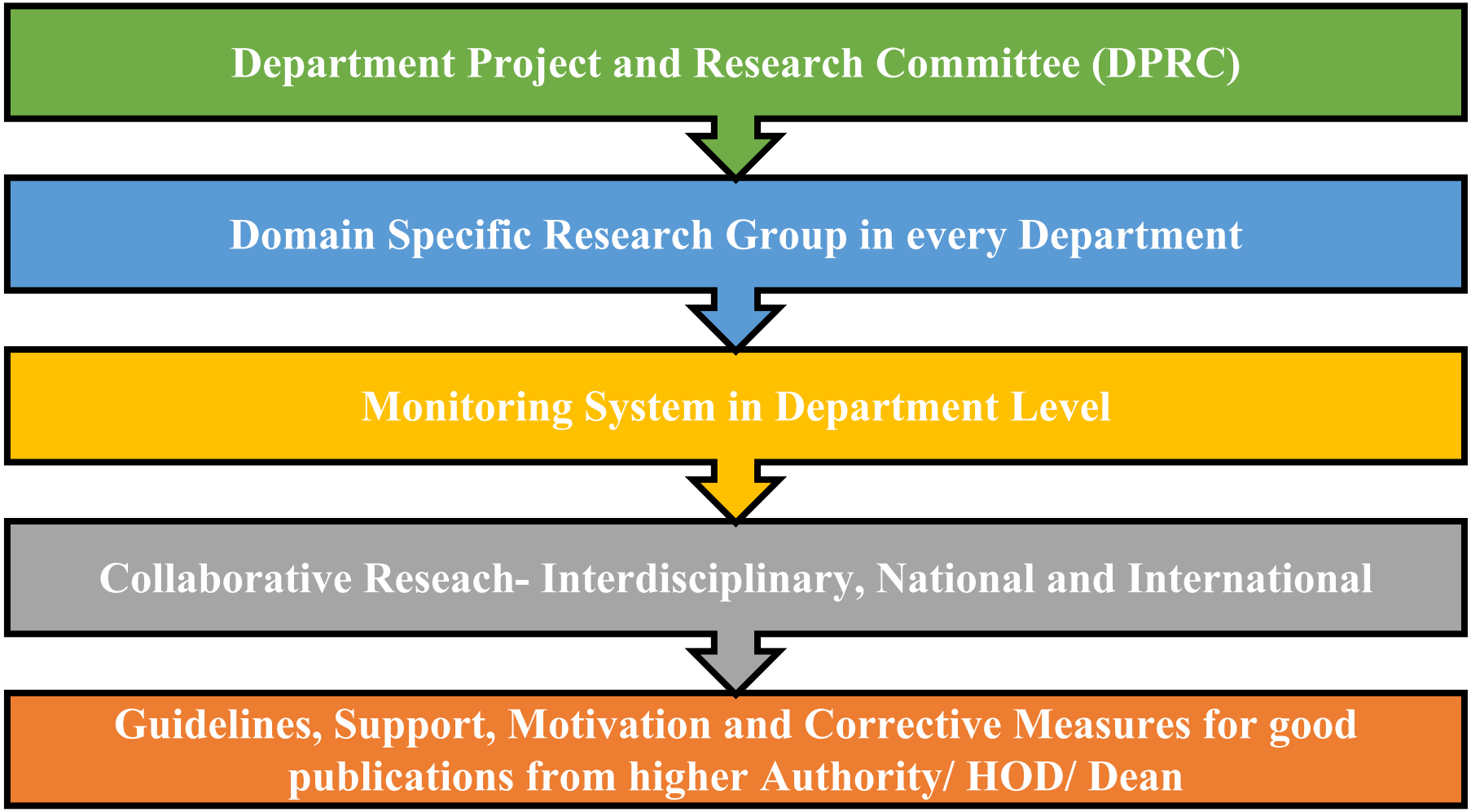
PLAN OF ACTION FOLLOWED FOR FACULTY PUBLICATIONS @ ECE

- Domain Allocation of Faculty members on the basis of their topic of research
- Domain wise research groups should be made
- Student project allocation on the basis of the research topic of faculty members
- The faculty members should be motivated to cite 4 to 5 papers of other faculty ‘s papers working in same domain
- Conference information should be shared by DPRC to all the faculty members of the Department
- If any one of the faculty Chairs Session in any Conference outside then he/she should encourage other faculty members to publish papers in that conference.

- The DPRC should have the list of journals in the relevant field categorized as per their indexing for submitting faculty and student papers. (For Electronics and Communication Engineering the list of journals is attached)
- The R & I team members and faculty members should submit the research papers in SCI/SCIE/ SCOPUS/ UGC Care journals
- The DPRC members should focus on Student Project Paper publications. The students should be motivated to publish papers in Conferences and Journals (SCOPUS/UGC).
- The publications should be submitted to Journals/ Conferences after getting it checked by Project Guide/DPRC members.

Roadmap for Research & Innovation Activities @ECE

PROCEDURE FOLLOWED FOR FACULTY PUBLICATIONS @ ECE



ROADMAP FOR PUBLICATIONS@ECE

- The faculty are motivated to publish at least 2 Research papers in an academic session. They are also motivated to have collaboration with their peers.

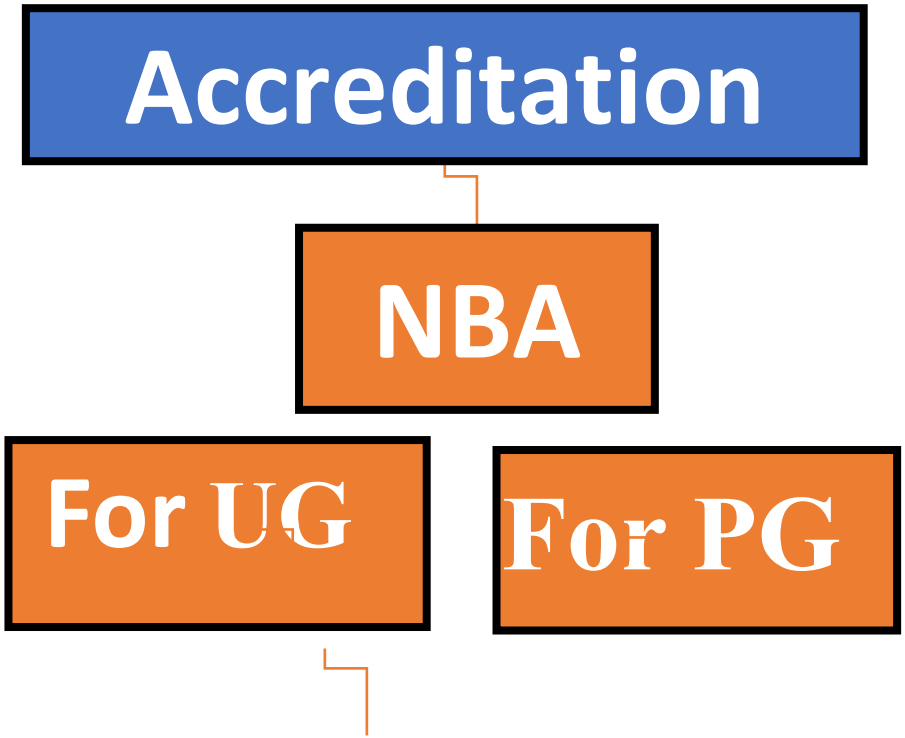
ROADMAP FOR GRANTS/CONSULTANCY @ECE

- Grants to be applied for establishment/ enrichment of labs and sponsored research from Govt. bodies like AICTE, DST, MODROBS, MeitY and SERB etc.
- This will enhance the research facilities (Simulation tools and hardware) in the organization.
- Consultancy from industry.

ROADMAP FOR PATENTS @ECE

- Students and Faculty members should be motivated to publish their research ideas and designs as patents.
- More number of patents should go for evaluation and grant.
- Domain wise faculty for evaluating the quality of patents so that it can be moved for examination and grant.
- Application for international patents should be motivated.
- Students are encouraged to publish patents with Faculty members

3. Accreditation



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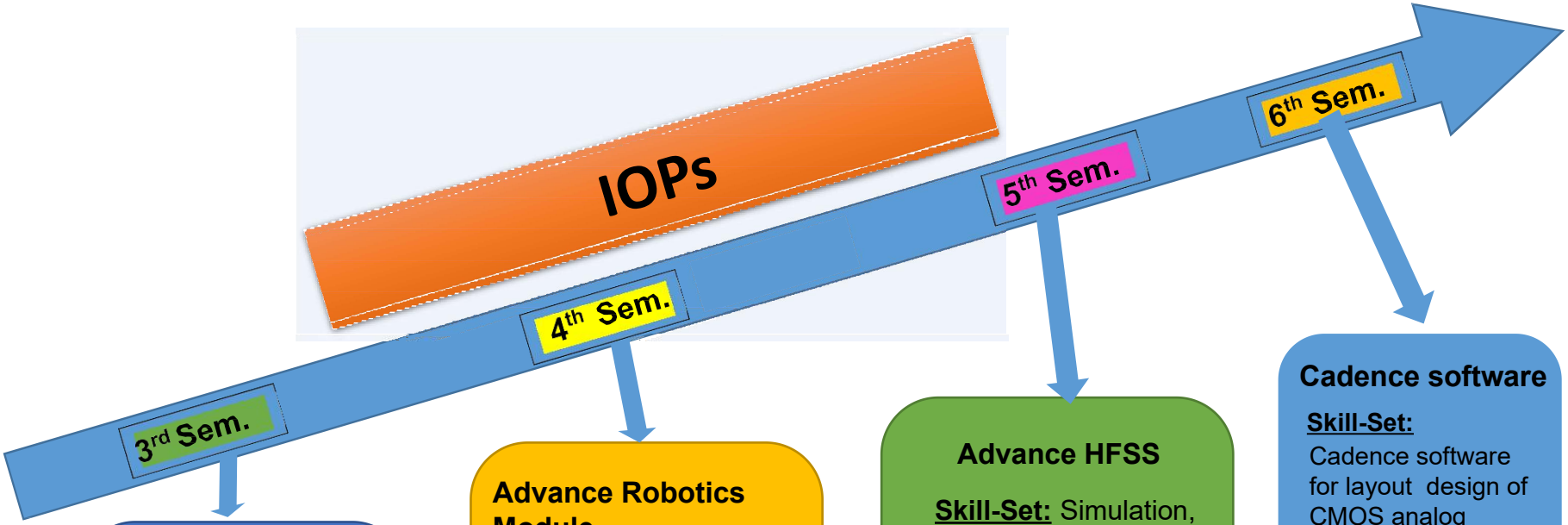
Department has submitted the SAR for PG program and waiting for NBA expert visit.

Department is accredited till 30.06.26 for UG program,will submit prequalifier SAR for the same on or before June 2026

4. Trainings

Industrial Oriented Program (IOP) Training Road Map in the domain for (2023-2027,2024-2028 Batch)



Basic Robotics Module

Skill-Set: Basic Robotics
No. of hours: 40
Outcome: Mini Project

Advance Robotics Module

Skill-Set: Advance Robotics
No. of hours: 40
Outcome: Mini Project

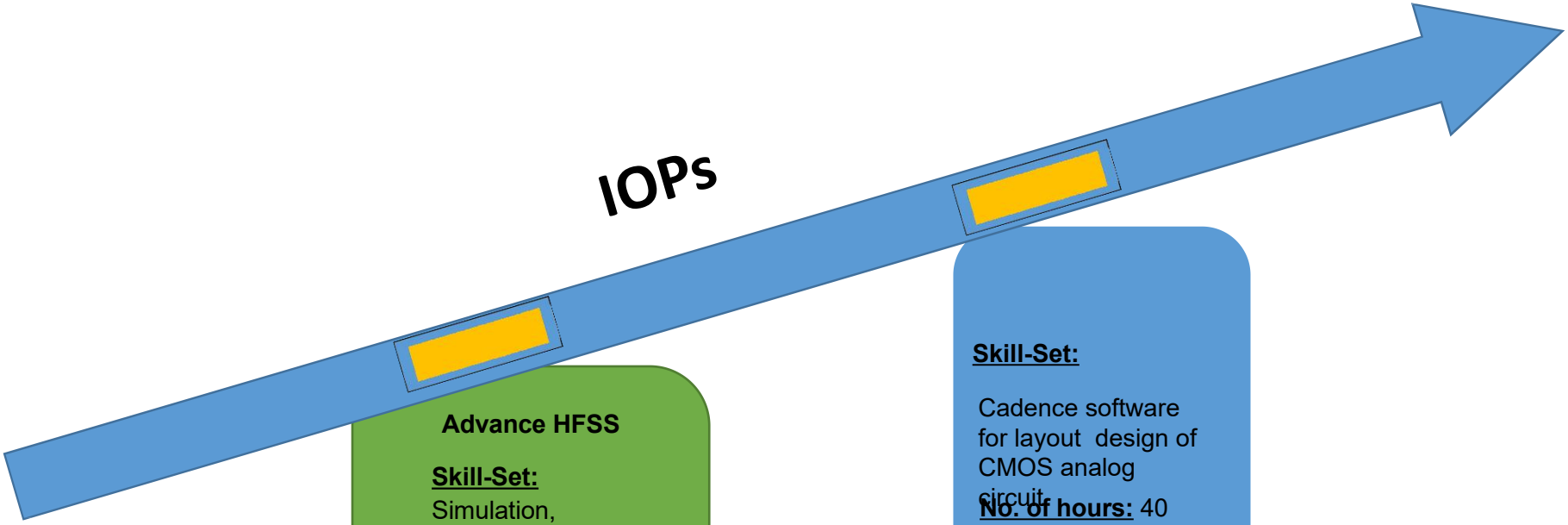
Advance HFSS

Skill-Set: Simulation, Synthesis of antenna
No. of hours: 40
Outcome: Design Project and Certification

Cadence software

Skill-Set: Cadence software for layout design of CMOS analog circuit
No. of hours: 40
Outcome: Design Project, Research Paper and Placement in Core companies.

Industrial Oriented Program (IOP) Training Road Map in the domain for (2024-2028 Batch)



Advance HFSS

Skill-Set:
Simulation, Synthesis of antenna

No. of hours: 40

Outcome: Design Project and Certification

Skill-Set:

Cadence software for layout design of CMOS analog circuit

No. of hours: 40

Outcome: Design Project, Research Paper and Placement in Core companies.

5. Placement, Higher Studies & Entrepreneurship

ECE department has taken following efforts to improve the percentage and salary package Placement of students

1. Domain based categorization of students in second year itself.

2. Motivate the students about recruitment process, skill set and making them aware about the work culture, domain required for such type of companies.

3. Preparing, updating and regularly tracking of students with the help of Placement Tracker, formulated and devised in the department to keep the students on track of placement and getting reviews and feedback about each placement drive.

4. Arranging Mentor-Mentee sessions for final year, third year and second year students to improve the resumes and overcome their technical, verbal and communication skills.

5. Arrangement of company-specific technical and aptitude training for all students.

6. Interaction of pre-final year students with already placed students for motivation and briefing.

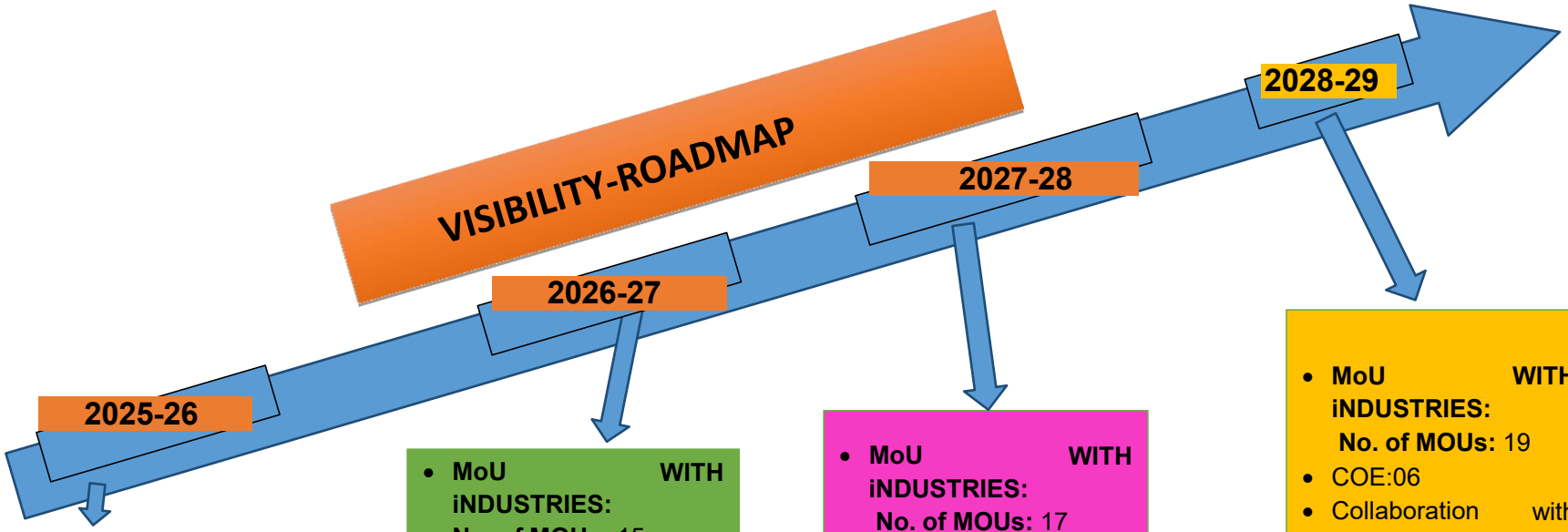
7. In addition to the college level placements, **we are rendering our 100 % placement support to our students.**

6. College Visibility Initiatives

PLAN OF ACTION	REMARKS
1.MOU WITH INDUSTRIES	• To tie-up with renowned electronic companies for Internship and Value added experiments in Labs.
	• Exchange of Technical knowhow
	• Placements, Training etc
	• Research consultancy
2.CENTRE OF EXCELLENCE	• Tie-up with Industries for every Centre of Excellence(COE)
	• To fetch Training Programs from Industries for COE
	• To fetch funding if applicable
	• To fetch Projects through COEs
	• To fetch training modules for COEs from Industries
3.COLLABORATION WITH REPUTED ACADEMIA	To establish collaboration with National & International academia
4.ESTABLISHMENT OF INDUSTRIAL COLLABORATION AND INNOVATION LABS(ICIL)	• To tie-up with Industrial partners for establishing ICIL
	• To fetch experiments beyond syllabus
	• Conduct FDPs

PLAN OF ACTION	REMARKS
5.HIGHLIGHTING ACHIEVEMENTS OF FACULTY & STUDENTS	• Awards received by faculty members
	• Patents published and granted to faculty members and students
	• Patents granted
6.PARTICIPATION OF STUDENTS IN INTERNATIONAL COMPETIONS	• Tie-up with Industries for every Centre of Excellence (COE)
	• To fetch Training Programs from Industries foe COE
	• To fetch funding if applicable
	• To fetch Projects through COEs
	• To fetch training modules for COEs from Industries

[Department VISIBILITY ROAD MAP FOR2025-2029]



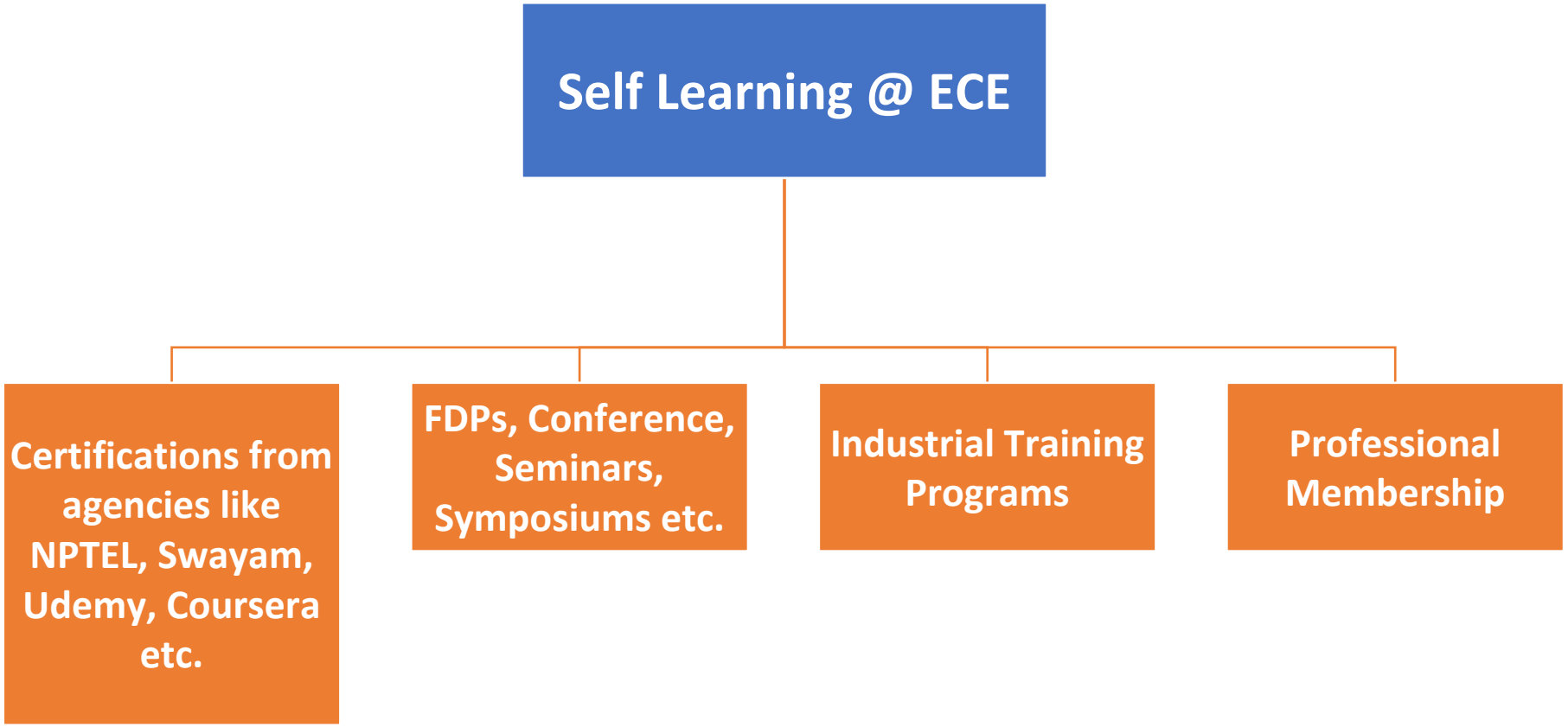
- **MoU WITH iNDUSTRIES: No. of MOUs:** 13
- COE:03
- Collaboration with academia:04
- ICIL:04

- **MoU WITH iNDUSTRIES: No. of MOUs:** 15
- COE:04
- Collaboration with academia:06
- ICIL:06

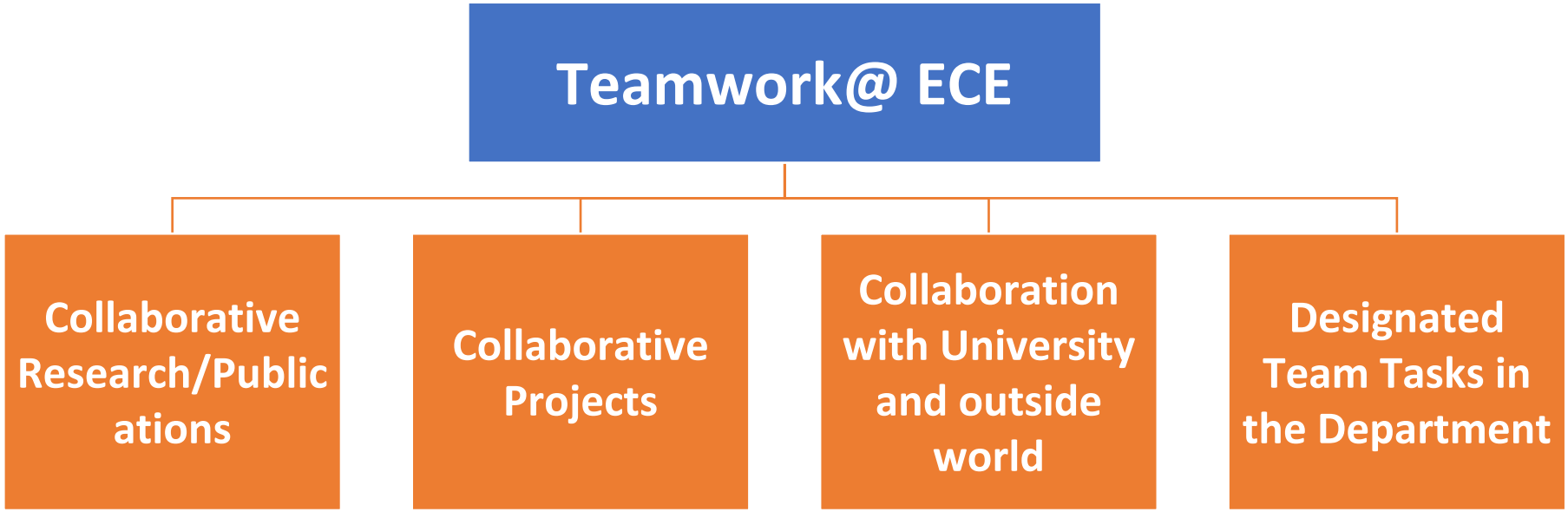
- **MoU WITH iNDUSTRIES: No. of MOUs:** 17
- COE:05
- Collaboration with academia:08
- ICIL:08

- **MoU WITH iNDUSTRIES: No. of MOUs:** 19
- COE:06
- Collaboration with academia:10
- ICIL:10

7. Self Learning


Self Learning @ ECE
Certifications from agencies like NPTEL, Swayam, Udemy, Coursera etc.
FDPs, Conference, Seminars, Symposiums etc.
Industrial Training Programs
Professional Membership

8. Teamwork


Teamwork@ ECE
Collaborative Research/Publications
Collaborative Projects
Collaboration with University and outside world
Designated Team Tasks in the Department

Thank You!!!