

# **IARE**

**INSTITUTE OF  
AERONAUTICAL ENGINEERING**

## **Outcome Based Education (OBE) Manual (PG21)**



**Department of Master of Business Administration**

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## OVERVIEW

**Outcome Based Education (OBE)** is an educational model that forms the base of a quality education system. There is no single specified style of teaching or assessment in OBE. All educational activities carried out in OBE should help the students to achieve the set goals. The faculty may adapt the role of instructor, trainer, facilitator, and/or mentor, based on the outcomes targeted.

OBE enhances the traditional methods and focuses on what the Institute provides to students. It shows the success by making or demonstrating outcomes using statements "able to do" in favour of students. OBE provides clear standards for observable and measurable outcomes.

National Board of Accreditation (NBA) is an authorised body for the accreditation of higher education institutions in India. NBA is also a full member of the Washington Accord. NBA accredits programmes and not the institutions.

### **Higher Education Institutions are classified into two categories by NBA**

**Tier – 1:** Institutions consists of all IITs, NITs, Central Universities, State Universities and Autonomous Institutions. Tier - 1 institution can also claim the benefits as per the Washington Accord.

**Tier - 2** Institutions consists of affiliated colleges of universities.

### **What is Outcome Based Education (OBE)?**

Institutions adopting OBE try to bring changes to the curriculum by dynamically adapting to the requirements of the different stakeholders like Students, Parents, Industry Personnel and Recruiters. OBE is all about feedback and outcomes.

### **Four levels of outcomes from OBE are:**

1. Program Educational Objectives (PEOs)
2. Program Outcomes (POs)
3. Course Outcomes (COs)

### **Why OBE?**

1. International recognition and global employment opportunities.
2. More employable and innovative graduates with professional and soft skills, social responsibility and ethics.
3. Better visibility and reputation of the technical institution among stakeholders.
4. Improving the commitment and involvement of all the stakeholders.
5. Enabling graduates to excel in their profession and accomplish greater heights in their careers.

6. Preparing graduates for the leadership positions and challenging them and making them aware of the opportunities in the technology development.

### **Benefits of OBE**

**Clarity:** The focus on outcome creates a clear expectation of what needs to be accomplished by the end of the course.

**Flexibility:** With a clear sense of what needs to be accomplished, instructors will be able to structure their lessons around the students' needs.

**Comparison:** OBE can be compared across the individual, class, batch, program and institute levels.

**Involvement:** Students are expected to do their own learning. Increased student's involvement allows them to feel responsible for their own learning, and they should learn more through this individual learning.

- Teaching will become a far more creative and innovative career
- Faculty members will no longer feel the pressure of having to be the “source of all knowledge”.
- Faculty members shape the thinking and vision of students towards a course.

### **India, OBE and Accreditation:**

From 13 June 2014, India has become the permanent signatory member of the Washington Accord. Implementation of OBE in higher technical education also started in India. The National Assessment and Accreditation Council (NAAC) and National Board of Accreditation (NBA) are the autonomous bodies for promoting global quality standards for technical education in India. NBA has started accrediting only the programs running with OBE from 2013.

The National Board of Accreditation mandates establishing a culture of outcome-based education in institutions that offer Engineering, Pharmacy, Management program. Reports of outcome analysis help to find gaps and carryout continuous improvements in the education system of an Institute, which is very essential.

# 1 Vision, Mission, Quality Policy, Philosophy & Core Values

## Vision

To bring forth professionally competent and socially sensible engineers, capable of working across cultures meeting the global standards ethically.

## Mission

To provide students with an extensive and exceptional education that prepares them to excel in their profession, guided by dynamic intellectual community and be able to face the technically complex world with creative leadership qualities.

Further, be instrumental in emanating new knowledge through innovative research that emboldens entrepreneurship and economic development for the benefit of wide spread community.

## Quality Policy

Our policy is to nurture and build diligent and dedicated community of engineers providing a professional and unprejudiced environment, thus justifying the purpose of teaching and satisfying the stake holders.

A team of well qualified and experienced professionals ensure quality education with its practical application in all areas of the Institute.

## Philosophy

The essence of learning lies in pursuing the truth that liberates one from the darkness of ignorance and Institute of Aeronautical Engineering firmly believes that education is for liberation.

Contained therein is the notion that management education includes all fields of administration that plays a pivotal role in the development of world-wide community contributing to the progress of civilization. This institute, adhering to the above understanding, is committed to the development of science and technology in congruence with the natural environs. It lays great emphasis on intensive research and education that blends professional skills and high moral standards with a sense of individuality and humanity. We thus promote ties with local communities and encourage transnational interactions in order to be socially accountable. This accelerates the process of transfiguring the students into complete human beings making the learning process relevant to life, instilling in them a sense of courtesy and responsibility.

## Core Values

**Excellence:** All activities are conducted according to the highest international standards.

**Integrity:** Adheres to the principles of honesty, trustworthiness, reliability, transparency and accountability.

**Inclusiveness:** To show respect for ethics, cultural and religious diversity and freedom of thought.

**Social Responsibility:** Promotes community engagement, environmental sustainability, and global citizenship. It also promotes awareness of, and support for, the needs and challenges of the local and global communities.

**Innovation:** Supports creative activities that approach challenges and issues from multiple perspectives in order to find solutions and advance knowledge.

## **2 Program Educational Objectives (PEOs)**

Program Educational Objectives (PEOs) should be defined by the Head of the Department in consultation with the faculty members. PEOs are a promise by the department to the aspiring students about what they will achieve once they join the programme. PEO assessment is not made compulsory by NBA as it is quite difficult to measure in Indian context. NBA assessors usually do not ask for PEO assessment. PEOs are about professional and career accomplishment after 4 to 5 years of graduation. PEOs can be written from different perspectives like Career, Professional Competency and Behaviour. While writing the PEOs do not use the technical terms as it will be read by prospective students who want to join the programme. Three to five PEOs are recommended.

### **Program Educational Objective – I: Managerial Skills:**

To impart adequate knowledge of management theories and concepts to enhance research and learning for continuous growth and development.

### **Program Educational Objective – II: Professional Effectiveness and Contribution to Society:**

To provide the learners with exposure to solve business situations using management tools, to analyze and create newer opportunities in industry.

### **Program Educational Objective – III: Professional Education:**

To achieve appropriate communication skills and higher levels of proficiency for successful career in Industry, Business and Entrepreneurship.

### **Program Educational Objective – IV: Exercising Leadership:**

To demonstrate the ability to maintain knowledge of emerging technologies to address the critical needs of the seamless strategic business operations.

With a view to challenge ourselves and to nurture diverse capabilities for professional and intellectual growth for our students it is important for the department to define departmental objectives in generalized and broad format. Adherence to these objectives is proposed to be demonstrated through actions or achievements.

The department of Master of Business Administration periodically reviews these objectives and as part of this review process, encourages comments from all interested parties including current students, alumni, prospective students, faculty, teaching assistants and members of related professional organizations, and colleagues from other educational institutions.

## 2.1 Mapping of program educational objectives to program outcomes:

The following Figure 1 shows the correlation between the PEOs and the POs

PEO-I	PEO-II	PEO-III	PEO-IV
PO1 and PO3	PO2 and PO5	PO4 and PO6	PO7 and PO8

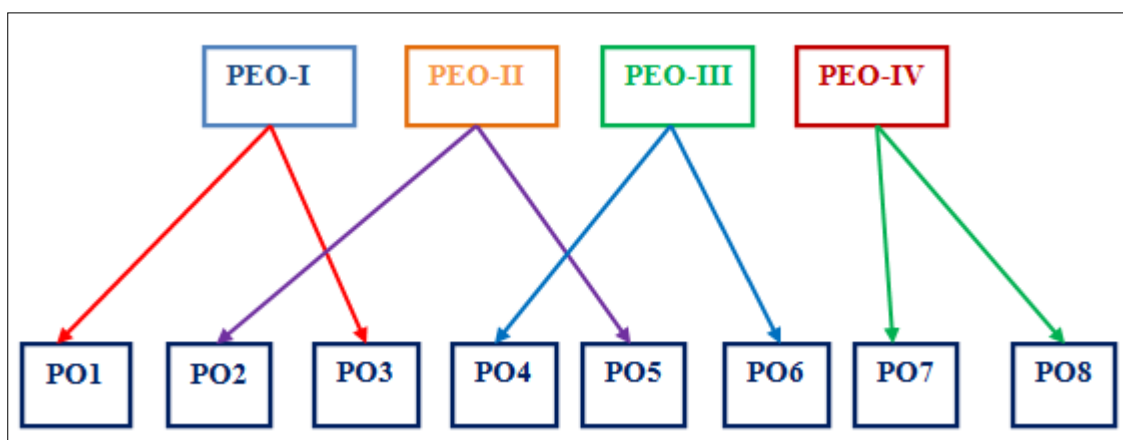


FIGURE 1: Correlation between the PEOs and the POs

## 3 Program Outcomes (POs)

A Program Outcome is broad in scope and be able to do at the end of the programme. POs are to be in line with the post graduate attributes as specified in the Washington Accord. POs are to be specific, measurable and achievable. NBA has defined 5 POs which is common for all the institutions in India and department added 3 additional POs. In the syllabus book given to students, there should be clear mention of course objectives and course outcomes for all the courses.

MBA - PROGRAM OUTCOMES (PO's)	
A post graduate of the Master of Business Administration Program will demonstrate:	
<b>PO1</b>	<b>Managerial Skills:</b> Apply knowledge of management theories and practices to solve business problems
<b>PO2</b>	<b>Decision-making Skills:</b> Foster Analytical and critical thinking abilities for data-based decision making
<b>PO3</b>	<b>Ethics:</b> Ability to develop Value based Leadership ability
<b>PO4</b>	<b>Communication Skills:</b> Ability to understand, analyze and communicate global, economic, legal, and ethical aspects of business
<b>PO5</b>	<b>Leadership Skills:</b> Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to team environment

<b>PO6</b>	<b>Entrepreneurial Skills:</b> Ability to demonstrate the skills and evaluate issues related to entrepreneurship and to develop as entrepreneurs
<b>PO7</b>	<b>Strategic analysis:</b> Ability to conduct strategic analysis using theoretical and practical applications
<b>PO8</b>	<b>Technology Skills:</b> Inculcate and develop technical skills to face the competitive world successfully career paths, to be an entrepreneur, and a zest for higher studies.

#### 4 Relation between the Program Educational Objectives and the POs

Broad relationship between the program objectives and the program outcomes is given in the following Table below:

		(1)	(2)	(3)	(4)
<b>PEO's→</b> <b>↓ PO's</b>		<b>Managerial Skills</b>	<b>Professional Effectiveness And Contribution to Society</b>	<b>Professional Education</b>	<b>Exercising Leadership</b>
<b>PO1</b>	<b>Managerial Skills:</b> Apply knowledge of management theories and practices to solve business problems	3			
<b>PO2</b>	<b>Decision-making Skills:</b> Foster Analytical and critical thinking abilities for data-based decision making		3		
<b>PO3</b>	<b>Ethics:</b> Ability to develop Value based Leadership ability	2			
<b>PO4</b>	<b>Communication Skills:</b> Ability to understand, analyze and communicate global, economic, legal, and ethical aspects of business			3	



<b>PO5</b>	<b>Leadership Skills:</b> Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to team environment		3		
<b>PO6</b>	<b>Entrepreneurial Skills:</b> Ability to demonstrate the skills and evaluate issues related to entrepreneurship and to develop as entrepreneurs			3	
<b>PO7</b>	<b>Strategic analysis:</b> Ability to conduct strategic analysis using theoretical and practical applications				3
<b>PO8</b>	<b>Technology Skills:</b> Inculcate and develop technical skills to face the competitive world successfully career paths, to be an entrepreneur, and a zest for higher studies.				3

#### **Relationship between Program Outcomes and Program Educational Objectives**

**Key: 3 = High; 2 = Medium; 1= Low**

**Note:**

- The assessment process of POs can be direct or indirect.
- The direct assessment will be done through interim assessment by conducting continuous internal exam and semester end exams.
- The indirect assessment on the other hand could be done through student’s programme exit questionnaire, alumni survey and employment survey.

## **5 Blooms Taxonomy**

Bloom’s taxonomy is considered as the global language for education. Bloom’s Taxonomy is frequently used by teachers in writing the course outcomes as it provides a readymade structure and list of action verbs. The stages ascend in complexity and what they demand of students. First

students need to simply remember information provided to them — but reciting something doesn't demonstrate having learned it, only memorization. With understanding comes the ability to explain the ideas and concepts to others. The students are then challenged to apply the information and use it in new ways, helping to gain a deeper understanding of previously covered material and demonstrating it moving forward. Questioning information is a vital part of learning, and both analysis and evaluation do just this. Analysing asks a student to examine the information in a new way, and evaluation demands the student appraise the material in a way that lets them defend or argue against it as they determine. The final step in the revised taxonomy is creating, which entails a developing new product or point of view. How does this learned information impact your world? How can it be used to impact not just your education but the way you interact with your surroundings? By utilizing Bloom's Taxonomy, students are not going to forget the information as soon as the class ends - rather, they retain and apply the information as they continue to grow as a student and in their careers, staying one step ahead of the competition.

### 5.1 Incorporating Critical Thinking Skills into Course Outcome Statements

Many faculty members choose to incorporate words that reflect critical or higher-order thinking into their learning outcome statements. Bloom (1956) developed a taxonomy outlining the different types of thinking skills people use in the learning process. Bloom argued that people use different levels of thinking skills to process different types of information and situations. Some of these are basic cognitive skills (such as memorization) while others are complex skills (such as creating new ways to apply information). These skills are often referred to as critical thinkingskills or higher-order thinking skills.

Bloom proposed the following taxonomy of thinking skills. All levels of Bloom's taxonomy of thinking skills can be incorporated into expected learning outcome statements. Recently, Anderson and Krathwohl (2001) adapted Bloom's model to include language that is oriented towards the language used in expected learning outcome statements. A summary of Anderson and Krathwohl's revised version of Bloom's taxonomy of critical thinking is provided in Figure 2.



FIGURE 2: Revised version of Bloom's taxonomy

## 5.2 Definitions of the different levels of thinking skills in Bloom’s taxonomy:

1. **Remember** –recalling relevant terminology, specific facts, or different procedures related to information and/or course topics. At this level, a student can remember something, but may not really understand it.
2. **Understand** –the ability to grasp the meaning of information (facts, definitions, concepts, etc.) that has been presented.
3. **Apply** –being able to use previously learned information in different situations or in problem solving.
4. **Analyze** –the ability to break information down into its component parts. Analysis also refers to the process of examining information in order to make conclusions regarding cause and effect, interpreting motives, making inferences, or finding evidence to support statements/arguments.
5. **Evaluate** –being able to judge the value of information and/or sources of information based on personal values or opinions.
6. **Create** –the ability to creatively or uniquely apply prior knowledge and/or skills to produce new and original thoughts, ideas, processes, etc. At this level, students are involved in creating their own thoughts and ideas.

## 5.3 List of Action Words Related to Critical Thinking Skills

Here is a list of action words that can be used when creating the expected student learning outcomes related to critical thinking skills in a course. These terms are organized according to the different levels of higher-order thinking skills contained in Anderson and Krathwohl’s (2001) revised version of Bloom’s taxonomy.

Here is the revised Bloom’s document with action verbs, which we frequently refer to while writing COs for our courses.

### The cognitive process dimensions- categories:

Lower Order of Thinking (LOT)			Higher Order of Thinking (HOT)		
Remember	Understand	Apply	Analyse	Evaluate	Create
Interpreting	Recognizing	Executing	Differentiating	Checking	Planning
Illustrating	(identifying)	Implementing	Organizing	(coordinating,	Generating
Classifying	Recalling		Attributing	detecting,	Producing
Summarizing	(retrieving)			testing,	(constructing)
Inferring				monitoring)	
(concluding)				Critiquing	
comparing				(judging)	
explaining					

<b>The Knowledge Dimension</b>			
<b>Concrete Knowledge→Abstract knowledge</b>			
<b>Factual</b>	<b>Conceptual</b>	<b>Procedural</b>	<b>Metacognitive</b>
<ul style="list-style-type: none"> <li>• Knowledge of terminologies</li> <li>• Knowledge of specific details and elements</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of classifications and categories</li> <li>• Knowledge of principles and generalizations</li> <li>• Knowledge of theories, models and structures</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of subject specific skills and algorithms</li> <li>• Knowledge of subject specific techniques and methods</li> <li>• Knowledge of criteria for determining when to use appropriate procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic Knowledge</li> <li>• Knowledge about cognitive task, including appropriate contextual and conditional Knowledge</li> <li>• Self- Knowledge</li> </ul>

### Action Verbs for Course Outcomes

Lower Order of Thinking (LOT)				Higher Order of Thinking (HOT)		
Definitions	Remember	Understand	Apply	Analyse	Evaluate	Create
<b>Bloom's Definition</b>	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solution.
<b>Verbs</b>	<ul style="list-style-type: none"> <li>• Choose</li> <li>• Define</li> <li>• Find</li> <li>• How</li> <li>• Label</li> <li>• List</li> <li>• Match</li> <li>• Extend</li> </ul>	<ul style="list-style-type: none"> <li>• Classify</li> <li>• Compare</li> <li>• Contrast</li> <li>• Demonstrate</li> <li>• Explain</li> <li>• Illustrate</li> <li>• Infer</li> <li>• Interpret</li> </ul>	<ul style="list-style-type: none"> <li>• Apply</li> <li>• Build</li> <li>• Choose</li> <li>• Construct</li> <li>• Develop</li> <li>• Interview</li> <li>• Make use of</li> <li>• Model</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze</li> <li>• Assume</li> <li>• Categorize</li> <li>• Classify</li> <li>• Compare</li> <li>• Discover</li> <li>• Dissect</li> <li>• Distinguish</li> </ul>	<ul style="list-style-type: none"> <li>• Agree</li> <li>• Appraise</li> <li>• Assess</li> <li>• Award</li> <li>• Choose</li> <li>• Criticize</li> <li>• Decide</li> <li>• Deduct</li> <li>• Importance</li> </ul>	<ul style="list-style-type: none"> <li>• Adapt</li> <li>• Build</li> <li>• Solve</li> <li>• Choose</li> <li>• Combine</li> <li>• Invent</li> <li>• Compile</li> <li>• Compose</li> <li>• Construct</li> </ul>

### Action Verbs for Course Outcomes

Lower Order of Thinking (LOT)				Higher Order of Thinking (HOT)		
Definitions	Remember	Understand	Apply	Analyse	Evaluate	Create
<b>Verbs</b>	<ul style="list-style-type: none"> <li>• Name</li> <li>• Omit</li> <li>• Recall</li> <li>• Relate</li> <li>• Select</li> <li>• Show</li> <li>• Spell</li> <li>• Tell</li> <li>• What</li> <li>• When</li> <li>• Where</li> <li>• Which</li> <li>• Who</li> <li>• Why</li> </ul>	<ul style="list-style-type: none"> <li>• Outline</li> <li>• Relate</li> <li>• Rephrase</li> <li>• Show</li> <li>• Summarize</li> <li>• Translate</li> <li>• Experiment with</li> <li>• Illustrate</li> <li>• Infer</li> <li>• Interpret</li> <li>• Outline</li> <li>• Relate</li> <li>• Rephrase</li> <li>• Show</li> <li>• Summarize</li> <li>• Translate</li> <li>• Experiment with</li> </ul>	<ul style="list-style-type: none"> <li>• Organize</li> <li>• Plan</li> <li>• Select</li> <li>• Solve</li> <li>• Utilize</li> <li>• Identify</li> <li>• Interview</li> <li>• Make use of</li> <li>• Model</li> <li>• Organize</li> <li>• Plan</li> <li>• Select</li> <li>• Solve</li> <li>• Utilize</li> <li>• Identify</li> </ul>	<ul style="list-style-type: none"> <li>• Divide</li> <li>• Examine</li> <li>• Function</li> <li>• Inference</li> <li>• Inspect</li> <li>• List Motive</li> <li>• Simplify</li> <li>• Survey</li> <li>• Take part in</li> <li>• Test for Theme</li> <li>• Conclusion</li> <li>• Contrast</li> </ul>	<ul style="list-style-type: none"> <li>• Defend</li> <li>• Determine</li> <li>• Disprove</li> <li>• Estimate</li> <li>• Evaluate</li> <li>• Influence</li> <li>• Interpret</li> <li>• Judge</li> <li>• Justify Mark</li> <li>• Measure</li> <li>• Opinion</li> <li>• Perceive</li> <li>• Prioritize</li> <li>• Prove</li> <li>• Criteria</li> <li>• Criticize</li> <li>• Compare</li> <li>• Conclude</li> </ul>	<ul style="list-style-type: none"> <li>• Create</li> <li>• Design</li> <li>• Develop</li> <li>• Estimate</li> <li>• Formulate</li> <li>• Happen</li> <li>• Imagine</li> <li>• Improve</li> <li>• Make up</li> <li>• Maximize</li> <li>• Minimize</li> <li>• Modify</li> <li>• Original</li> <li>• Originate</li> <li>• Plan</li> <li>• Predict</li> <li>• Propose</li> <li>• Solution</li> </ul>

## 6 Guidelines for writing Course Outcome Statements:

*Well-written course outcomes involve the following parts:*

1. Action verb
2. Subject content
3. Level of achievement as per BTL
4. Modes of performing task (if applicable)

### 6.1 Course Outcomes (COs)

A Course Outcome is a formal statement of what students are expected to learn in a course. When creating Course Outcomes remember that the outcomes should clearly state what students will do or produce to determine and/or demonstrate their learning. Course learning outcome statements refer to specific knowledge, practical skills, areas of professional development, attitudes, higher-order thinking skills, etc. that faculty members expect students to develop, learn, or master during a course.

A well-formulated set of Course Outcomes will describe what a faculty member hopes to successfully accomplish in offering their particular course(s) to prospective students, or what specific skills, competencies, and knowledge the faculty member believes that students will have attained once the course is completed. The learning outcomes need to be concise descriptions of what learning is expected to take place by course completion.

### 6.2 Developing Course Outcomes

When creating course outcomes consider the following guidelines will help to develop either individually or as part of a multi-section group:

- Limit the course outcomes to 6 statements for the entire course [more detailed outcomes can be developed for individual units, assignments, chapters, etc. if the instructor(s) wish(es)].
- Focus on overarching knowledge and/or skills rather than small or trivial details
- Focus on knowledge and skills that are central to the course topic and/or discipline.
- Create statements that have a student focus rather than an instructor centric approach (basic e.g., “upon completion of this course students will be able to list the names of the 28 states and 8 union territories” versus “one objective of this course is to teach the names of the 28 states and 8 union territories”).
- Focus on the learning that results from the course rather than describing activities or lessons that are in the course.
- Incorporate and/or reflect the institutional and departmental missions.
- Include various ways for students to show success (outlining, describing, modelling,

depicting, etc.) rather than using a single statement such as “at the end of the course, students will know” as the stem for each expected outcome statement.

**When developing learning outcomes, here are the core questions to satisfy:**

- What do we want students in the course to learn?
- What do we want the students to be able to do?
- Are the outcomes observable, measurable and are they able to be performed by the students?

**Course outcome statements on the course level describe:**

- What faculty members want students to know at the end of the course AND
- What faculty members want students to be able to do at the end of the course?

**Course outcomes have three major characteristics**

- They specify an action by the students/learners that is observable
- They specify an action by the students/learners that is measurable
- They specify an action that is done by the students/learners rather than the faculty members

Effectively developed expected learning outcome statements should possess all three of these characteristics. When this is done, the expected learning outcomes for a course are designed so that they can be assessed. When stating expected learning outcomes, it is important to use verbs that describe exactly what the student(s) / learner(s) will be able to do upon completion of the course.

### 6.3 Relationship of Course Outcome to Program Outcome

The Course Outcomes need to link to the Program Outcomes.

**Learning outcomes formula:**

STUDENTS SHOULD BE ABLE TO + BEHAVIOR + RESULTING EVIDENCE

For example, instructor can use the following template to write an appropriate course level learning outcome.

*“Upon completion of this course students will be able to (knowledge, concept, rule or skill you expect them to acquire) by (how will they apply the knowledge or skill/how will the instructor assess the learning).”*

### 6.4 Characteristics of Effective Course Outcomes

Well written course outcomes:

- Describe what instructor wants from students to learn in the course.
- Are aligned with program goals and objectives.



- Tell how to know an instructional goal has been achieved.
- Use action words that specify definite, observable behaviours.
- Are assessable through one or more indicators (papers, quizzes, projects, presentations, journals, portfolios, etc.)
- Are realistic and achievable.
- Use simple language

## 6.5 Examples of Effective Course Outcomes

After successful completion of the course, Students will be able to:

- Demonstrate the basic concepts and levels of management to make better organizational decisions.
- Illustrate the significance of pre and final accounts and causes of depreciation on fixed assets to measure its impact on business accounting.
- Discuss various forms of production functions to know its affects in the cost of production.
- Discuss about company and companies acts that helps to initiate enterprises.
- Facilitate a group to achieve agreed-upon goals.
- Determine and apply the appropriate statistical procedures to analyze the results of simple experiments.
- Recognize the significance, limitations, origin and different branches of statistics for better managerial analysis.
- Produce a strategic plan for a small manufacturing business.
- Analyse a character's motivation and portray that character before an audience.
- Differentiate among five major approaches to literary analysis
- List the major ethical issues one must consider when planning a human-subjects study.
- Locate and critically evaluate information on current political issues on the Web.
- List and describe the functions of the major components of the human nervous system.
- Correctly classify rock samples found in...
- Conduct a systems analysis of a group interaction.
- Demonstrate active listening skills when interviewing clients.
- Apply social psychological principles to suggest solutions to contemporary social problems.

A more detailed model for stating learning objectives requires that objectives have three parts: a condition, an observable behaviour, and a standard. The table below provides three examples.

S No	Condition	Observable Behaviour	Standard
1	Given a list of management decisions	the student will be able to classify each statement as event or case study	with at least 70% accuracy

S No	Condition	Observable Behaviour	Standard
2	Immediately following a fifteen-minute discussion on a topic.	The student will be able to summarize in writing the major issues being discussed.	Mentioning at least three of the five major topics.
3	Given an algebraic equation with one unknown.	the student will be able to correctly solve a simple linear equation	Within a period of five minutes.

The following examples describe a course outcome that is not measurable as written, an explanation for why the course outcome is not considered measurable, and a suggested edit that improves the course outcome

Original course outcome	Evaluation of language used in this course outcome	Improved course outcome
Explore in depth the literature on an aspect of teaching strategies.	Exploration is not a measurable activity but the quality of the product of exploration would be measurable with a suitable rubric.	Upon completion of this course the students will be able to: write a paper based on an in-depth exploration of the literature on an aspect of teaching strategies.

### Examples that is TOO general and VERY HARD to measure...

- ... Will appreciate the benefits of learning a foreign language.
- ... Will be able to access resources at the Institute library.
- ... Will develop problem-solving skills.
- ... Will have more confidence in their knowledge of the subject matter. Examples that are still general and HARD to measure...
- ... Will value knowing a second language as a communication tool.
- ... Will develop and apply effective problem-solving skills that will enable one to adequately navigate through the proper resources within the institute library.
- ... Will demonstrate the ability to resolve problems that occur in the field.
- ... Will demonstrate critical thinking skills, such as problem solving as it relates to social issues.

### Examples that is SPECIFIC and relatively EASY to measure...

- ... Will be able to read and demonstrate good comprehension of text in areas of the student's interest or professional field.

- ... Will demonstrate the ability to apply basic research methods in psychology, including research design, data analysis, and interpretation.
- ... Will be able to identify environmental problems, evaluate problem-solving strategies, and develop science-based solutions.
- ... Will demonstrate the ability to evaluate, integrate, and apply appropriate information from various sources to create cohesive, persuasive arguments, and to propose design concepts.

### **An Introspection - Examine Your Own Course Outcomes**

- If you have written statements of broad course goals, take a look at them. If you do not have a written list of course goals, reflect on your course and list the four to six most important student outcomes you want your course to produce.
- Look over your list and check the one most important student outcome. If you could only achieve one outcome, which one would it be?
- Look for your outcome on the list of key competencies or outcomes society is asking us to produce. Is it there? If not, is the reason a compelling one?
- Check each of your other "most important" outcomes against the list of outcomes. How many are on the list of key competencies?
- Take stock. What can you learn from this exercise about what you are trying to accomplish as a teacher? How clear and how important are your statements of outcomes for your use and for your students'? Are they very specifically worded to avoid misunderstanding? Are they supporting important needs on the part of the students?

### **Write Your Course Outcomes!**

One of the first steps you take in identifying the expected learning outcomes for your course is identifying the purpose of teaching the course. By clarifying and specifying the purpose of the course, you will be able to discover the main topics or themes related to students' learning. Once discovered, these themes will help you to outline the expected learning outcomes for the course. Ask yourself:

- What role does this course play within the program?
- How is the course unique or different from other courses?
- Why should/do students take this course? What essential knowledge or skills should they gain from this experience?
- What knowledge or skills from this course will students need to have mastered to perform well in future classes or jobs?
- Why is this course important for students to take?

## **6.6 CO-PO Course Articulation Matrix (CAM) Mapping**

Course Articulation Matrix shows the educational relationship (Level of Learning achieved) be-

tween course outcomes and program outcomes for a course. This matrix strongly indicates whether the students are able to achieve the course learning objectives. The matrix can be used for any course and is a good way to evaluate a course syllabus.

The below table gives information about the action verbs used in the POs and the nature of POs, stating whether the POs are technical or non-technical. Instructor need to understand the intention of each POs and the Bloom's level to which each of these action verbs in the POs correlates to. Once it has understood the POs then can write the COs for a course and see to what extent each of those CO's correlate with the POs.

TABLE: Process for mapping the values for CO-PO Matrix

Type	POs	Action Verb(s) in POs	Bloom's level(s) for POs	Bloom's level(s) for COs
Professional	PO 1	Apply	L3	<ul style="list-style-type: none"> <li>Bloom's L1 to L4 for Theory Courses.</li> <li>Bloom's L1 to L5 for Laboratory Courses.</li> <li>Bloom's L1 to L6 for Mini Project and Main Project.</li> </ul>
	PO 2	Identify	L2	
		Formulate	L6	
		Review	L2	
	PO 3	Design	L6	
		Develop	L3, L6	
	PO 4	Analyze	L4	
		Interpret	L2, L3	
		Design	L6	
	PO 5	Create	L6	
		Select	L1, L2, L6	
		Apply	L3	
	PO 6	Interpret	L2, L3	
Select		L1, L2, L6		
PO 7	Create	L6		
Non-Professional	PO 8	<p style="text-align: center;"><b>THUMB RULE</b></p> <ul style="list-style-type: none"> <li>If Bloom's L1 Action Verbs of a CO: Correlates with any of PO8, then assign 1.</li> <li>If Bloom's L2 to L3 Action Verbs of a CO: Correlates with any of PO8, then assign 2.</li> <li>If Bloom's L4 to L6 Action Verbs of a CO: Correlates with any of PO8, then assign 3.</li> </ul>		

At the end, the POs can be calculated using various descriptors that you may define. The mapping of CO towards a PO is evaluated using descriptors such as High, Medium, Low etc. . .

### **Observations:**

1. The PO1, PO2 and PO5 are purely of knowledge based aspects required for effective managerial decisions.
2. The PO3 and PO4 are about the behavioral aspects for sustainable management implications.
3. PO6 and PO7 are relates to the explorative actions for the knowledge gained through the program.
4. The PO8 is about the skills to develop and succeed in the competitive world.
5. The core subjects while writing the Course Outcomes (CO) the Blooms Level 1 to Level4 is suggestible, where as if it is the professional elective, seminar or the laboratory the Blooms Level1 to Level 5 is most preferable.
6. In the case of Project work almost all six levels of Blooms can appropriate based on the need and importance of the work.
7. For a given course, the course in-charge has to involve all the other course coordinators who taught that course and ask for suggestions in the CO-PO mapping. The course in-charge has to take the average value of all of these CO-PO mappings and finalize the values or the course in-charge can go with what the majority of the faculty members prefer for.
8. While mapping the CO with respective PO, the action verbs used in the CO has to correlate with intention of PO based on the thumb rule given in the table and map the values along with justification. (Applies only for mapping COs to non-technical POs).

### **6.7 Tips for Assigning the values while mapping COs to POs.**

1. Select action verbs for a CO from different Bloom's levels based on the importance of the particular CO for the given course.
2. Stick on to single action verbs while composing COs but you may go for multiple action verbs if the need arises.
3. You need to justify for marking of the values in CO-PO articulation matrix. Use a combination of words found in the COs, POs and your course syllabus for writing the justification. Restrict yourself to one or two lines.
4. Values to CO-PO (technical POs in particular) matrix can be assigned by
  - (a) Judging the importance of the particular CO in relation to the POs. If the CO matches strongly with a particular PO criterion then assign 3, if it matches moderately then assign 2 or if the match is low then assign 1 else mark with “ - ” symbol.
  - (b) If an action verb used in a CO is repeated at multiple Bloom's levels, then you need to judge which Bloom's level is the best fit for that action verb.

### **6.8 Method for Articulation**

1. Identify the key competencies of POs to each CO and make a corresponding mappingtable with assigning mark at the corresponding cell. One observation to be noted is that the first five POs are purely of professional in nature, while the other POs are nonprofessional.
2. Justify each CO - PO mapping with a justification statement and recognize the number of vital features mentioned in the justification statement that are matching with the given Key Attributes for Assessing Program Outcomes. Use a combination of words found in the COs, POs and your course syllabus for writing the justification.
3. Make a table with number of key competencies for CO – PO mapping with reference to

the maximum given Key Attributes for Assessing Program Outcomes.

4. Make a table with percentage of key competencies for CO – PO mapping with reference to the maximum given Key Attributes for Assessing Program Outcomes.
5. Finally, Course Articulation Matrix (CO - PO Mapping) is prepared with COs and POs on the scale of 0 to 3, 0 being no correlation (marked with “ -”), 1 being the low/slight correlation, 2 being medium/moderate correlation and 3 being substantial/high correlation based on the following strategy

$0-0 \leq C \leq 5\%$  - No correlation.

$1-5 < C \leq 40\%$  - Low / Slight.

$2-40\% < C < 60\%$  - Moderate

$3-60\% \leq C < 100\%$  - Substantial / High

## 7 Key Competencies for Assessing Program Outcomes:

PO	NBA statement / Vital features	No. of vital features
PO1	<p><b>Managerial Skills: Apply knowledge of management theories and practices to solve business problems</b>            Knowledge, understanding and application of</p> <ol style="list-style-type: none"> <li>1. Managerial theories which may be used to achieve managerial objectives within that context</li> <li>2. Management practices and techniques used to solve the business problems</li> </ol>	2
PO2	<p><b>Decision making Skills: Foster Analytical and critical thinking abilities for data-based decision making</b></p> <ol style="list-style-type: none"> <li>1. Strategies and tools used to solve the identified problem</li> <li>2. Analytical Solutions that are applied or implemented</li> <li>3. Design processes and Approaches for the complex problems decision making</li> </ol>	3
PO3	<p><b>Ethics: Ability to develop value based Leadership ability</b></p> <ol style="list-style-type: none"> <li>1. Comprises four components: ability to make informed ethical choices, knowledge of professional codes of ethics, evaluates the ethical dimensions of professional practice, and demonstrates ethical behavior.</li> <li>2. Stood up for what they believed in identifying the ethical dilemmas</li> <li>3. High degree of trust and integrity to solve ethical problems in management work and to make decisions</li> </ol>	3
PO4	<p><b>Communication Skills: Ability to understand, analyze and communicate global, economic, legal and ethical aspects of business</b>            "Students should demonstrate the ability to communicate effectively in writing / Orally."</p> <ol style="list-style-type: none"> <li>1. Communication using in the Organization &amp; Structure (Oral/Writing)</li> <li>2. Communication in content delivery, written communication&amp; Speaking Skills</li> <li>3. Communication through personal appearance &amp; rapport with audience</li> </ol>	3

<b>PO5</b>	<b>Leadership Skills: Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment</b> <ol style="list-style-type: none"> <li>1. Take Responsibility and Independence in the activities</li> <li>2. Contribution to Team Effort , Work and Maturity – requiring only the achievement of goals to drive their performance</li> <li>3. Respect, Civility, Communication and self-direction</li> <li>4. Ability to work with all levels of people in an organization</li> <li>5. Demonstrated ability to work well with a team</li> </ol>	<b>5</b>
<b>PO6</b>	<b>Entrepreneurial Skills: Ability to demonstrate the skills and evaluate issues related to entrepreneurship and to develop as entrepreneurs</b> <ol style="list-style-type: none"> <li>1. Knowledge of Job Market</li> <li>2. Planning Budget, Insurance, &amp; Investment</li> <li>3. Ability to Engage in Conversation about Political, Economic, National, Regional, and international events</li> </ol>	<b>3</b>
<b>PO7</b>	<b>Strategic Analysis: Ability to conduct strategic analysis using theoretical and practical applications</b> <ol style="list-style-type: none"> <li>1. Understanding of Impact of management Solutions in Global and Societal Context</li> <li>2. Familiarity with Applications of management Tools, Methods &amp; Techniques in Global and Societal Context</li> <li>3. Breadth and Depth of the Impact of Management Solutions in Global and Societal Context</li> <li>4. Understanding of management principles and the ability to apply them to analyze key professional processes</li> </ol>	<b>4</b>
<b>PO8</b>	<b>Technology Skills: Inculcate and develop technical skills to face the competitive world successfully</b> <ol style="list-style-type: none"> <li>1. Adoption and usage level of technology in classroom</li> <li>2. Technology scope and sequence in place to fulfill Educational Technology Standards</li> </ol>	<b>2</b>

## 8 Program Outcomes Attained through course modules:

Courses offered in Master of Business Administration Curriculum (IARE-R18) and POs attained through course modules for I, II, III, and IV semesters.

Code	Subject	PO							
		1	2	3	4	5	6	7	8
CMBC01	Management and Organizational Behavior	✓		✓		✓	✓	✓	
CMBC02	Accounting for Management	✓	✓	✓	✓			✓	
CMBC03	Managerial Economics	✓	✓	✓	✓	✓			
CMBC04	Business Law		✓	✓	✓	✓			✓
CMBC05	Statistics for Management	✓	✓		✓		✓		
CMBC06	Business Environment	✓			✓			✓	✓

CMBC07	Intellectual Property Rights	✓			✓			✓	✓
CMBC13	Technical Skills for Business Management Laboratory				✓	✓			✓
CMBC14	Business Communication and Soft Skills Seminar				✓	✓			
CMBC15	Human Resource Management	✓	✓	✓	✓	✓		✓	
CMBC16	Financial Management	✓	✓		✓		✓	✓	
CMBC17	Marketing Management	✓	✓		✓		✓	✓	
CMBC18	Entrepreneurship Development	✓	✓			✓			✓
CMBC19	Management Information Systems		✓	✓		✓	✓	✓	
CMBC20	Quantitative Analysis for Business Decisions	✓	✓		✓			✓	
CMBC24	Disaster Management	✓	✓	✓		✓			
CMBC27	Industry Analysis and Report Presentation - Seminar				✓	✓			✓
CMBC28	Personal Effectiveness - Seminar	✓	✓	✓	✓	✓	✓	✓	
CMBC29	Business Research Methods	✓	✓				✓	✓	
CMBC30	Production and Operation Management	✓	✓				✓	✓	
CMBC31	Business Analytics	✓	✓		✓			✓	
CMBC35	Security Analysis and Portfolio Management	✓	✓		✓			✓	
CMBC36	Strategic Management Accounting	✓			✓			✓	✓
CMBC37	Financial Institutions , Markets and Services	✓	✓		✓	✓			
CMBC38	Training and Development	✓	✓		✓	✓	✓	✓	
CMBC39	HR Metrics and Analysis	✓	✓			✓		✓	
CMBC40	Strategic Human Resource Management	✓	✓		✓	✓			
CMBC47	Summer Internship (Field work)	✓	✓	✓	✓	✓	✓	✓	
CMBC48	Strategic Management	✓	✓	✓	✓	✓	✓	✓	
CMBC52	Financial Derivatives	✓	✓				✓	✓	
CMBC53	Banking, Insurance and Risk Management	✓	✓					✓	✓
CMBC54	International Financial Management	✓	✓		✓		✓	✓	



CMBC55	Compensation and Reward Management	✓	✓		✓			✓	✓
CMBC56	Management of Industrial Relations	✓	✓		✓				✓
CMBC57	International Human Resource Management	✓	✓		✓				
CMBC64	Project Work and Viva Voce	✓	✓		✓				✓

## 9 Methods for measuring Learning Outcomes and Value Addition:

There are many different ways to assess student learning. In this section, we present the different types of assessment approaches available and the different frame works to interpret the results.

- i) Continuous Internal Assessment (CIA)
- ii) Alternate Assessment Tools (AAT)
- iii) Semester end examination (SEE)
- iv) Laboratory and project work
- v) Course exit survey
- vi) Program exit survey
- vii) Alumni survey
- viii) Employer survey
- ix) Course expert committee
- x) Program Assessment and Quality Improvement Committee (PAQIC)
- xi) Department Advisory Board (DAB)
- xii) Faculty meetings
- xiii) Professional societies

**The above assessment indicators are detailed below.**

### 9.1 Continuous Internal Assessment (CIA)

Two Continuous Internal Examinations (CIEs) assessments are conducted for all courses by the department. All students must participate in this evaluation process. These evaluations are critically reviewed by HOD and senior faculty and the essence is communicated to the faculty concerned to analyze, improve and practice so as to improve the performance of the student.

### 9.2 Assignment and Alternate Assessment Tools (AAT)

#### Assignment:

To improve the writing skills in the course an assignment will be evaluated for 05 marks. One assignment has to submit at the end of the CIE2 for the questions provided by the each course coordinator in that semester. Assignments to be handed in as loose paper collection stapled together at the top left corner. The assignment should be presented as a professional report. It must consist of a

cover sheet, content page, and should have an introduction, a body, a conclusion or recommendation, and a reference page.

### **Alternative Assessment Tool (AAT):**

This AAT enables faculty to design own assessment patterns during the CIA. The AAT converts the classroom into an effective learning center. **The AAT may include, concept videos, course related term paper, management talks, paper presentations conducted by reputed organizations relevant to the course etc.**

### **9.3 Semester End Examination (SEE)**

The semester end examination assessment is conducted for all the courses in the department. Before the Semester end examinations course reviews are conducted, feedback taken from students and remedial measures will be taken up such that the student gets benefited before going for end exams. The positive and negative comments made by the students about the course are recorded and submitted to the departmental academic board (DAB) and to the principal for taking necessary actions to better the course for subsequent semesters.

### **9.4 Laboratory, seminars and Project Works**

The laboratory and seminars works are continuously monitored and assessed to suit the present demands of the industry. Students are advised and guided to do project works giving solutions to research / industrial problems to the extent possible by the capabilities and limitations of the student. The results of the assessment of the individual projects and laboratory work can easily be conflated in order to provide the students with periodic reviews of their overall progress and to produce terminal marks and grading.

### **9.5 Course Exit Surveys**

Students are encouraged to fill-out a brief survey on the fulfillment of course objectives. The data is reviewed by the concerned course faculty and the results are kept open for the entire faculty. Based on this, alterations or changes to the course objectives are undertaken by thorough discussions in faculty and DAB meetings.

### **9.6 Programme Exit Survey**

The programme exit questionnaire form is to be filled by all the students leaving the institution. The questionnaire is designed in such a way to gather information from the students regarding the program educational objectives, solicit about program experiences, carrier choices, as well as any suggestions and comments for the improvement of the program. The opinions expressed in exit interview forms are reviewed by the DAB for implementation purposes.

### **9.7 Alumni Survey**

The survey asks former students of the department about the status of their employment and further education, perceptions of institutional emphasis, estimated gains in knowledge and skills, involvement a sunder graduate student, and continuing involvement with Institute of Aeronautical Engineering. This survey is administered every three years. The data obtained will be analyzed

and used in continuous improvement.

### **9.8 Employer Survey**

The main purpose of this employer questionnaire is to know employer's views about the skills they require of employees compared to the skills actually possessed by them. The purpose is also to identify gaps in technical and vocational skills, need for required training practices to fill these gaps and criteria for hiring new employees. These employer surveys are reviewed by the College Academic Council (CAC) to affect the present curriculum to suit the requirement so the employer.

### **9.9 Course Expert Committee**

The course expert team is responsible in exercising the central domain of expertise in developing and renewing the curriculum and assessing its quality and effectiveness to the highest of professional standards. Inform the Academic Committee the 'day-to-day' matters as are relevant to the offered courses. This committee will consider the student and staff feedback on the efficient and effective development of the relevant courses. The committee also review the course full stack content developed by the respective course coordinator.

**9.10 Programme Assessment Committee (PAC)** PAC Monitors the achievements of Program Outcomes (POs) and Program Educational Objectives (PEOs). It will evaluate the program effectiveness and proposes the necessary changes. It also prepares the periodic reports on program activities, progress, status or other special reports for management. It also motivates the faculty and students towards attending workshops, developing projects, working models, paper publications and engaging in research activities.

### **9.11 Department Advisory Board (DAB)**

Departmental Advisory Board plays an important role in the development of the department. Department level Advisory Board will be established for providing guidance and direction for qualitative growth of the department. The Board interacts and maintains liaison with key stakeholders. DAB will Monitor the progress of the program and develop or recommend the new or revised goals and objectives for the program. Also, the DAB will review and analyze the gaps between curriculum and Industry requirement and gives necessary feedback or advices to be taken to improve the curriculum.

### **9.12 Faculty Meetings**

The DAB meets bi-annually for every academic year to review the strategic planning and modification of PEOs. Faculty meetings are conducted at least once in fortnight for ensuring the implementation of DAB's suggestions and guidelines. All these proceedings are recorded and kept for the availability of all faculties.

### **9.13 Professional Societies**

The importance of professional societies like HMA, ISTD, IMA etc., are explained to the students and they are encouraged to become members of the above to carry out their continuous

search for knowledge. Student and faculty chapters of the above societies are constituted for a better technical and entrepreneurial environment. These professional societies promote excellence in instruction, research, public service and practice.

## 10 CO - Assessment processes and tools:

Course outcomes are evaluated based on two approaches namely direct and indirect assessment methods. The direct assessment methods are based on the Continuous Internal Assessment (CIA) and Semester End Examination (SEE) whereas the indirect assessment methods are based on the course end survey and program exit survey provided by the students, Alumni and Employer. The weightage in CO attainment of Direct and Indirect assessments are illustrated in Table.

Assessment Method	Assessment Tool	Weightage in CO attainment
Direct Assessment	Continuous Internal Assessment (CIE & AAT)	80%
	Semester End Examination	
Indirect Assessment	Course End Survey	20%

### 10.1 Direct Assessment:

Direct assessment methods are based on the student's knowledge and performance in the various assessments and examinations. These assessment methods provide evidence that a student has command over a specific course, content, or skill, or that the students work demonstrates a specific quality such as creativity, analysis, or synthesis.

The various direct assessment tools used to assess the impact of delivery of course content is listed in Table.

- Continuous internal examination, semester end examinations, AAT (includes assignment, 5 minutes videos, seminars etc.) are used for CO calculation.
- The attainment values are calculated for individual courses and are formulated and summed for assessing the POs.
- Performance in AAT is indicative of the student's communication skills.

S No	Courses	Components	Frequency	Max. Marks	Evidence
1	Core / Elective	Continuous Internal Examination	Twice in a semester	10+10	Answer script

		Alternative Assessment Tools (AAT)	Once in a semester	5	Video / Quiz / assignment
		Assignment	Twice in a semester	5	Work sheets
		Semester End Examination	Once in a semester	70	Answer script
2	Laboratory/Seminar	Conduction of activity	Once in a week	4	Work sheets
		Observation	Once in a week	4	Work sheets
		Record	Once in a week	4	Work sheets
		Viva	Once in a week	4	Work sheets
		Internal laboratory assessment	Once in a semester	10	Answer script
		Semester End Examination	Once in a semester	70	Answer script
3	Project Work	Presentation	Twice in a semester	30	Presentation
		Semester End Examination	Once in a semester	70	Thesis report
4	Comprehensive Examination	Written examination (objective type)	Once in a semester	100	Online assessment

## 10.2 Indirect Assessment:

Course End Survey - In this survey, questionnaires are prepared based on the level of understanding of the course and the questions are mapped to Course Outcomes. The tools and processes used in indirect assessment are shown in Table.

TABLE: Tools used in Indirect assessment

Tools	Process	Frequency
Course end survey	<ul style="list-style-type: none"> <li>• Taken for every course at the end of the semester</li> <li>• Gives an overall view that helps to assess the extent of coverage/ compliance of COs</li> <li>• Helps the faculty to improve upon the various teaching methodologies</li> </ul>	Once in a semester

**Direct Tools:** (Measurable in terms of marks and w.r.t. CO) Assessment done by faculty at department level

**Indirect Tools:** (Non measurable (surveys) in terms of marks and w.r.t. CO) Assessment done at institute level.

## 11 PO - Assessment tools and Processes

The institute has the following methods for assessing attainment of POs.

1. Direct method
2. Indirect method

The attainment levels of course outcomes help in computing the PO based upon the mapping done.

TABLE 16: Attainment of PO

	Assessment	Tools	Weight
<b>POs Attainment</b>	Direct Assessment	CO attainment of courses	80%
	Indirect Assessment	Student exit survey	20%
		Alumni survey	
		Employer survey	

The CO values of both theory and laboratory courses with appropriate weightage as per CO-PO mapping, as per Program Articulation Matrix are considered for calculation of direct attainment of PO.

### 11.1 PO Direct Attainment is calculated using the following rubric:

PO Direct Attainment = (Strength of CO-PO)\*CO attainment / Sum of CO-PO strength.

The below figure represents the evaluation process of POs attainment through course outcomes attainment

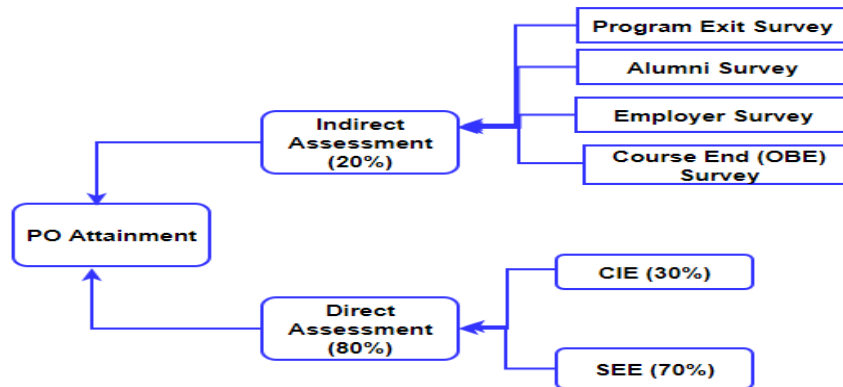


FIGURE 3: Evaluation process of POs attainment

## 12 Course Description:

The “Course Description” provides general information regarding the topics and content addressed in the course. A sample course description is given in Annexure – A for the reference.

**The “Course Description” contains the following contents:**

- Course Overview
- Prerequisite(s)
- Marks Distribution
- Content delivery / Instructional methodologies
- Evaluation Methodology
- Course Objectives
- Course Outcomes
- Program Outcomes
- How Program Outcomes are assessed
- Mapping of each CO with PO(s)
- Justification for CO – PO mapping- direct
- Total count of key competencies for CO – PO mapping
- Percentage of key competencies for CO – PO
- Course articulation matrix (PO mapping)
- Assessment methodology-direct
- Assessment methodology-indirect
- Syllabus
- List of Text Books / References / Websites
- Course Plan



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

## MASTER OF BUSINESS ADMINISTRATION

### COURSE DESCRIPTOR

Course Title	ENTREPRENEURSHIP DEVELOPMENT				
Course Code	CMBC18				
Program	MBA				
Semester	II				
Course Type	CORE				
Regulation	IARE - R18				
Course Structure	Theory			Practical	
	Lectures	Tutorials	Credits	Laboratory	Credits
	3	1	4	-	-
Course Coordinator	Dr. T Vara Lakshmi, Professor				

#### I. COURSE OVERVIEW:

The purpose of the course is to acquire necessary knowledge and skills required for organizing and carrying out entrepreneurial activities, for analysing and understanding business situations in entrepreneurs act and to master the knowledge necessary to plan entrepreneurial activities. The objective of the course is, further on, to develop the ability of analysing various aspects of entrepreneurship– especially of taking over the risk, and the specificities as well as the pattern of entrepreneurship development and, finally, to contribute to their entrepreneurial and managerial potentials.

#### II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites
-	-	-	-

#### III. MARKSDISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks



Entrepreneurship Development	70 Marks	30 Marks	100
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#### IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✓	Chalk & Talk	✗	Quiz	✓	Assignments	✗	MOOCs
✓	LCD / PPT	✓	Seminars	✗	Mini Project	✓	Videos
✗	Open Ended Experiments						

#### V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

##### Semester End Examination (SEE):

The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into FIVE modules and each module carries equal weightage in terms of marks distribution. The question paper pattern is as follows. Two full questions with “either” or “choice” will be drawn from each module. Each question carries 14 marks. **There could be a maximum of two sub divisions in a question.**

The expected percentage of cognitive level of the questions is broadly based on the criteria given in Table: 1.

Table 1: The expected percentage of cognitive level of questions in SEE.

Percentage of Cognitive Level	Blooms Taxonomy Level
10 %	Remember
30 %	Understand
20 %	Apply
20 %	Analyze
10 %	Evaluate
10 %	Create

##### Continuous Internal Assessment (CIA):

CIA is conducted for a total of 30 marks (Table 2), with 25 marks for Continuous Internal Examination (CIE), 05 marks for Alternative Assessment Tool (AAT).

Table 2: Assessment pattern for CIA

Component		Marks	Total Marks
CIA	Continuous Internal Examination – 1 (Mid-term)	10	30
	Continuous Internal Examination – 2 (End-term)	10	
	Assignments	5	
	Alternative Assessment Tool (AAT)	5	
SEE	Semester End Examination (SEE)	70	70
<b>Total Marks</b>			<b>100</b>

### Continuous Internal Examination (CIE):

Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively for 10 marks each of 2 hours duration consisting of five descriptive type questions out of which four questions have to be answered. The valuation and verification of answer scripts of CIE exams shall be completed within a week after the conduct of the Examination.

### Assignment:

To improve the writing skills in the course an assignment will be evaluated for 05 marks. One assignment has to submit at the end of the CIE2 for the questions provided by the each course coordinator in that semester. Assignments to be handed in as loose paper collection stapled together at the top left corner. The assignment should be presented as a professional report. It must consist of a cover sheet, content page, and should have an introduction, a body, a conclusion or recommendation, and a reference page.

### Alternative Assessment Tool (AAT):

In order to encourage innovative methods while delivering a course, the faculty members are encouraged to use the Alternative Assessment Tool (AAT). This AAT enables faculty to design own assessment patterns during the CIA. The AAT enhances the autonomy (freedom and flexibility) of individual faculty and enables them to create innovative pedagogical practices. If properly applied, the AAT converts the classroom into an effective learning center. The AAT may include, concept videos, course related term paper, management talks, paper presentations conducted by reputed organizations relevant to the course etc.

## VI. COURSE OBJECTIVES:

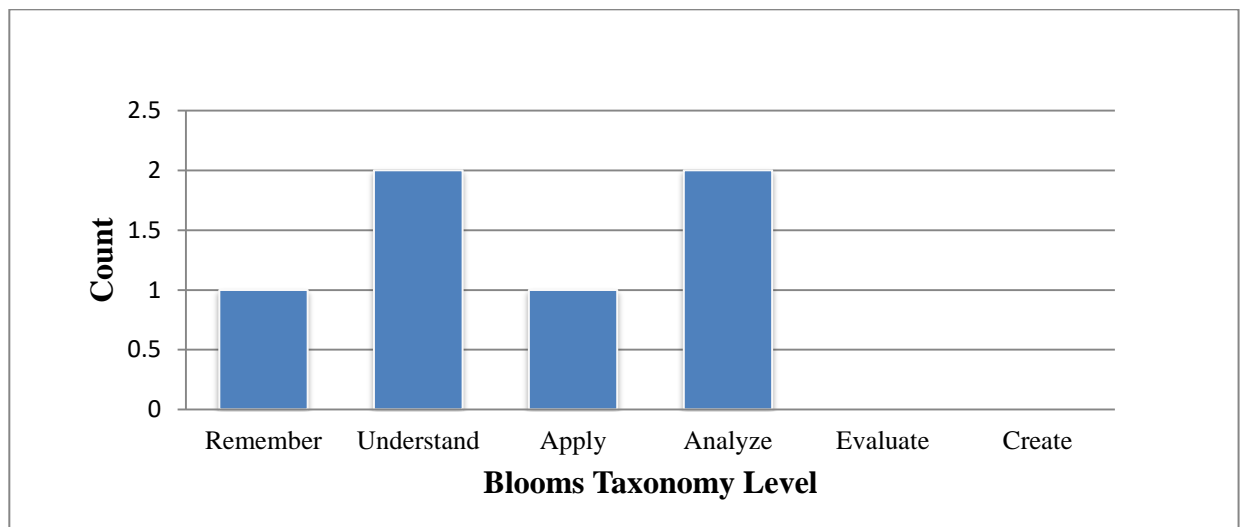
The students will try to learn:	
I	The concept of entrepreneurship, types, functions and approaches of entrepreneur.
II	The aspects of entrepreneurial mindset and personality.
III	The business opportunities and to equip the learners with process of project formulation and appraisal.
IV	The role of venture capitalists and the legal challenges in entrepreneurship development.
V	Strategic perspectives in entrepreneurship.

## VII. COURSE OUTCOMES:

After successful completion of the course, students will be able to:

N Course Outcomes		Knowledge Level (Bloom's Taxonomy)
CO 1	Explore new vistas of entrepreneurship in the twenty-first century environment to establish new business opportunities.	Understand
CO 2	Evaluate entrepreneurial mindset and personality of each individual helping to detect difficulties and propose a timely solution.	Analyze
CO 3	Recognize the entrepreneurial mindset for giving value to the company.	Remember
CO 4	Develop entrepreneurial imagination and creativity to develop the value of the company.	Analyze
CO 5	Identify and establish new venture prospects based on new technology to evaluate the feasibility of a new business concept.	Apply
CO 6	Investigate strategic entrepreneurial perspectives that aid in the development of a competitive mindset.	Understand

### COURSE KNOWLEDGE COMPETENCY LEVELS



### VIII. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes		Strength	Proficiency Assessed by
PO1	<b>Managerial Skills:</b> Apply knowledge of management theories and practices to solve business problems.	2.25	Assignments
PO2	<b>Decision making Skills:</b> Foster analytical and critical thinking abilities for data-based decision making.	3	Seminars
PO4	<b>Ethics:</b> An ability to understand professional and ethical responsibility.	3	Assignments
PO5	<b>Leadership Skills:</b> Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to team environment.	3	Assignments

Program Outcomes		Strength	Proficiency Assessed by
PO6	<b>Entrepreneurial Skills:</b> Ability to demonstrate the skills and evaluate issues related to entrepreneurship and to develop as entrepreneurs.	3	Seminars
PO7	<b>Strategic analysis:</b> Ability to conduct strategic analysis using theoretical and practical applications.	2.5	Seminars

3 = High; 2 = Medium; 1 = Low

#### IX. MAPPING OF EACH CO WITH PO(s):

Course Outcomes	Program Outcomes							
	1	2	3	4	5	6	7	8
CO 1	√	√	-	√	√	√	-	-
CO 2	-	√	-	-	√	√	-	-
CO 3	√	√	-	-	√	√	-	-
CO 4	√	-	-	√	-	√	-	-
CO 5	√	√	-	-	-	√	√	-
CO 6	-	-	-	-	-	√	√	-

#### X. JUSTIFICATIONS FOR CO – (PO) MAPPING –DIRECT

Course Outcomes	POs / PSOs	Justification for mapping (Students will be able to)	No. of key competencies
CO 1	PO 1	<b>Recollect (knowledge)</b> the basic concept of entrepreneurship concepts and to an extent appreciate (understand) the importance of <b>entrepreneurial mind set to promote the organized economy system and solve the business problems.</b>	1
	PO 2	<b>Describe (knowledge)</b> the importance of approaches for <b>business developments in the context of risk return decisions.</b>	3
	PO 4	<b>Interpret (knowledge)</b> about the evolution of entrepreneurship <b>to the development of the global economic aspects of business.</b>	2
	PO 5	<b>Enumerate (market trends)</b> the twenty first century trends in entrepreneurship to <b>lead themselves and others in the competition world.</b>	4
	PO 6	<b>Enhance (Skills)</b> entrepreneurial mind set and behaviour to <b>demonstrate the skills and issues related to entrepreneurs</b>	3

		to develop as entrepreneur.	
CO 2	PO 2	<b>Comprehend</b> and achieve entrepreneurial personality by developing good <b>communicational aspects with stakeholders.</b>	3
	PO 5	<b>Recognize (knowledge)</b> the contribution of ethical aspects by its functional <b>strategic principles and methodology</b>	3
	PO 6	<b>Explore (Creativity and Innovation)</b> the entrepreneurial ventures by <b>identifying the entrepreneurial skills.</b>	3
CO 3	PO 1	<b>Apply (knowledge)</b> the identified opportunities to <b>the technical analysis of the launching entrepreneurial ventures.</b>	2
	PO 2	<b>Recognize</b> the importance of imagination and creativity in implementing <b>strategies of the venture maintenance.</b>	3
	PO 5	<b>Develop (Skills)</b> the ideas generation by finding market gaps to <b>achieve the organizational goals.</b>	3
	PO 6	<b>Stabilize (strategies)</b> the corporate entrepreneurship to <b>take competitive advantage of entrepreneurship.</b>	3
CO 4	PO 1	<b>Construct</b> the managerial models in the franchising activities to <b>communicate with the investors.</b>	1
	PO 4	<b>Examine</b> the significance of new ventures to <b>understand the business activities.</b>	3
	PO 6	<b>Ability (Skills)</b> to improve innovative ventures to <b>establish an enterprise.</b>	3
CO 5	PO 1	<b>Derive</b> the existence possibility of legal decisions in <b>meeting the practical solutions of the organization.</b>	1
	PO 2	<b>Promote the</b> intellectual property protections for <b>entrepreneurial establishment decisions.</b>	3
	PO 6	<b>Differentiate</b> the entrepreneurial plans for industry and competitors declaration to analyze the <b>managerial strategies in the funding business environment.</b>	3
	PO 7	<b>Outline</b> the contribution of sources of finance to meet the <b>funding activities of the enterprises.</b>	2
CO 6	PO 6	<b>Explain</b> the strategic perspectives with <b>appropriate implementable strategies.</b>	3
	PO 7	<b>Examine</b> the strategies in building, growth and venture management while implementing the managerial decisions of businesses.	3

#### XI. TOTAL COUNT OF KEY COMPETENCIES FOR CO – (PO) MAPPING

Course	Program Outcomes / No. of Key Competencies Matched
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Outcomes	1	2	3	4	5	6	7	8
		2	3	3	3	5	3	4
CO 1	1	3	-	2	4	3	-	-
CO 2	-	3	-	-	3	3	-	-
CO 3	2	3	-	-	3	3	-	-
CO 4	1	-	-	3	-	3	-	-
CO 5	1	3	-	-	-	3	2	-
CO 6	-	-	-	-	-	3	3	-

## XII. PERCENTAGE OF KEY COMPETENCIES FOR CO – (PO):

Course Outcomes	Program Outcomes / No. of key competencies							
	1	2	3	4	5	6	7	8
		2	3	3	3	5	3	4
CO 1	50.00	100.00	-	66.66	80.00	100.00	-	-
CO 2	-	100.00	-	-	60.00	100.00	-	-
CO 3	100.00	100.00	-	-	60.00	100.00	-	-
CO 4	50.00	-	-	100.00	-	100.00	-	-
CO 5	50.00	100.00	-	-	-	100.00	50.00	-
CO 6	-	-	-	-	-	100.00	75.00	-

## XIII. COURSE ARTICULATION MATRIX (PO MAPPING)

COs and POs and COs and PSOs on the scale of 0 to 3, **0** being **no correlation**, **1** being the **low correlation**, **2** being **medium correlation** and **3** being **high correlation**.

**0** –  $0 \leq C \leq 5\%$  – No correlation;

**2** –  $40\% < C < 60\%$  – Moderate.

**1** –  $5 < C \leq 40\%$  – Low/ Slight;

**3** –  $60\% \leq C < 100\%$  – Substantial /High

Course Outcomes	Program Outcomes							
		2	3	3	3	5	3	4
CO 1	2	3	-	3	3	3	-	-
CO 2	-	3	-	-	3	3	-	-

CO 3	3	3	-	-	3	3	-	-
CO 4	2	-	-	3	-	3	-	-
CO 5	2	3	-	-	-	3	2	-
CO 6	-	-	-	-	-	3	3	-
<b>TOTAL</b>	9	12	-	6	9	18	5	-
<b>AVERAGE</b>	2.25	3	-	3	3	3	2.5	-

#### XIV. ASSESSMENT METHODOLOGY - DIRECT

CIE Exams	PO1, PO2, PO4, PO5, PO6, PO7	SEE Exams	PO1, PO2, PO4, PO5, PO6, PO7.	Assignments	PO1, PO4, PO5	Seminars	PO 2, PO 6, PO 7.
Laboratory Practices	-	Student Viva	-	Mini Project	-	Certification	-
Term Paper	-						

#### XV. ASSESSMENT METHODOLOGY - INDIRECT

✓	Early Semester Feedback	✓	End Semester OBE Feedback
✗	Assessment of Mini Projects by Experts		

#### XVI. SYLLABUS

<b>UNIT-I</b>	<b>UNDERSTANDING ENTREPRENEURIAL MIND-SET</b>
The revolution impact of entrepreneurship - The evolution of entrepreneurship - Functions of Entrepreneurs – types of entrepreneurs - Approaches to entrepreneurship - Process approach - Role of entrepreneurship in economic development - Twenty first century trends in entrepreneurship.	
<b>UNIT-II</b>	<b>ENTREPRENEURIAL PERSONALITY</b>
The individual entrepreneurial mind-set and Personality- The entrepreneurial journey - Stress and the entrepreneur - the entrepreneurial ego – Entrepreneurial motivations- Motivational cycle – Entrepreneurial motivational behavior, Entrepreneurial competencies.	
<b>UNIT-III</b>	<b>LAUNCHING ENTREPRENEURIAL VENTURES</b>
Corporate Entrepreneurial Mind-set, the nature of corporate entrepreneur- conceptualization of corporate entrepreneurship Strategy-sustaining corporate entrepreneurship Opportunities identification- Finding gaps in the market place – techniques for generating ideas.	

Entrepreneurial Imagination and Creativity- the nature of the creativity process - Innovation and entrepreneurship. Methods to initiate Ventures - Creating new ventures - Acquiring an Established entrepreneurial venture – Franchising - advantage and disadvantages of Franchising.

**UNIT-IV**

**LEGAL CHALLENGES&FEASIBILITY ANALYSIS**

Intellectual property protection - Patents, Copyrights - Trademarks and Trade secrets - Avoiding trademark pitfalls. Feasibility Analysis - Industry and competitor analysis - Formulation of the entrepreneurial Plan- The challenges of new venture start-ups, developing an effective business model – Sources of finance - Critical factors for new venture development - The Evaluation process.

**UNIT-V**

**STRATEGIC PERSPECTIVES IN ENTREPRENEURSHIP**

Strategic planning - Strategic actions- strategic positioning- Business stabilization - Building the adaptive firms - Understanding the growth stage – Internal growth strategies and external growth strategies, Unique managerial concern of growing ventures. Initiatives by the Government of India to promote entrepreneurship, Social and women entrepreneurship.

**Textbooks:**

1. Sharma, Sangeeta. "Entrepreneurship development", PHI Learning Pvt. Ltd., 7<sup>th</sup> Edition, 2021.
2. Akino, Susan. "SMEs and Entrepreneurship Development Determinants in Practice: Case of Uganda." Handbook of Research on Sustaining SMEs and Entrepreneurial Innovation in the Post-COVID-19 Era", IGI Global, 5<sup>th</sup> Edition, 2021.
3. S.S.Khanka, "Entrepreneurship Development", S. Chand Publications, 5<sup>th</sup> Edition, 2015.
4. Bruce R. Barringer/ R.Duane Ireland. "Entrepreneurship Successfully launching new ventures", Pearson, 4<sup>th</sup> Edition, 2015.
5. S.S. Khanka "Entrepreneurial Development" S. Chand Company Ltd, 4<sup>th</sup> Edition, 2012
6. D F Kuratko and T V Rao, "Entrepreneurship- A South-Asian Perspective", Cengage Learning, 2012.

**Reference Books:**

1. Sangeeth Sharama, "Entrepreneurship Development". PHI learning private limited, 2<sup>nd</sup> Edition, 2013.
2. Poornima M Charantimath, "Entrepreneurship Development and Small Business Enterprises ", Pearson Publications, 2<sup>nd</sup> Edition, 2012.

**XVII. COURSE PLAN:**

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topics to be Covered	COs	Reference
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<b>Lecture No</b>	<b>Topics to be Covered</b>	<b>COs</b>	<b>Reference</b>
1	The revolution impact of entrepreneurship	CO1	T-1, R-2
2	The evolution of entrepreneurship	CO1	T-2, R-2
3	Functions of Entrepreneurs	CO1	T-1, R-2
4	Types of entrepreneurs	CO1	T-1, R-2
5	Approaches to entrepreneurship	CO1	T-2, R-2
6	Process approach	CO1	T-1, R-1
7	Role of entrepreneurship in economic development	CO1	T-2, R-2
8	Twenty first century trends in entrepreneurship	CO1	T-1, R-2
9	The individual entrepreneurial mind-set and Personality	CO2	T-2, R-2
10	The entrepreneurial journey	CO2	T-1, R-2
11	Stress and the entrepreneur	CO2	T-1, R-2
12	The entrepreneurial ego	CO2	T-2, R-2
13	Entrepreneurial motivations	CO2	T-1, R-2
14	Motivational cycle	CO2	T-2, R-2
15	Entrepreneurial motivational behavior	CO2	T-1, R-1
16	Entrepreneurial competencies	CO2	T-2, R-2
17	Corporate Entrepreneurial Mind-set	CO3	T-1, R-2
18	The nature of corporate entrepreneur	CO3	T-2, R-2
19	Conceptualization of corporate entrepreneurship Strategy	CO3	T-2, R-1
20	Sustaining corporate entrepreneurship	CO3	T-2, R-2
21	Opportunities identification	CO3	T-1, R-1
22	Finding gaps in the market place	CO3	T-2, R-2
23	Techniques for generating ideas	CO3	T-1, R-2
24	Entrepreneurial Imagination and Creativity	CO4	T-1, R-1
25	The nature of the creativity process	CO4	T-1, R-1
26	Innovation and entrepreneurship	CO4	T-2, R-1
27	Methods to initiate Ventures	CO4	T-1, R-1
28	Creating new ventures	CO4	T-1, R-2

<b>Lecture No</b>	<b>Topics to be Covered</b>	<b>COs</b>	<b>Reference</b>
29-30	Acquiring an Established entrepreneurial venture	CO4	T-1, R-1
31	Franchising	CO4	T-1, R-1
32	Advantage and disadvantages of Franchising	CO4	T-1, R-1
33	Intellectual property protection	CO5	T-2, R-1
34	Patents, Copyrights	CO5	T-1, R-1
35	Trademarks and Trade secrets	CO5	T-1, R-1
36	Avoiding trademark pitfalls	CO5	T-1, R-1
37	Feasibility Analysis	CO5	T-1, R-2
38	Industry and competitor analysis	CO5	T-1, R-1
39	Formulation of the entrepreneurial Plan	CO5	T-1, R-1
40	The challenges of new venture start-ups	CO5	T-1, R-1
41	Developing an effective business model	CO5	T-1, R-1
42-44	Sources of finance	CO5	T-1, R-2
45-47	Critical factors for new venture development	CO5	T-1, R-1
48	The Evaluation process	CO5	T-2, R-1
49-50	Strategic planning - Strategic actions	CO6	T-1, R-1
51-52	Strategic positioning- Business stabilization	CO6	T-1, R-1
53-54	Building the adaptive firms	CO6	T-2, R-1
55	Understanding the growth stage	CO6	T-2, R-1
56	Internal growth strategies and external growth strategies	CO6	T-1, R-1
57	Unique managerial concern of growing ventures	CO6	T-2, R-1
58	Initiatives by the Government of India to promote entrepreneurship	CO6	T-1, R-1
59	Social and women entrepreneurship	CO6	T-1, R-1

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