



Faculty of Agricultural Engineering

Outcome Based Education (OBE) System

Vision of the Faculty

The vision of the faculty is to take leading role in the promotion of technological changes and their management for sustainable agricultural development.

Mission Statement of the Program

The mission of the Faculty is to strive for excellence in education, research, and outreach in the agricultural sector for sustainable development. We expand students' knowledge and skills in Agricultural Engineering by giving professional and academic training in the areas of Irrigation & Drainage Engineering, Land & Water Management, Mechanization & Farm Machinery, Post-Harvest Technology, Farm Structures and Environmental Engineering.

Program Educational Objectives (PEOs):

The PEOs of B.E (Agriculture) program are as under.

1. Explain knowledge of Agricultural Engineering based on analytical and scientific approach to address engineering problems.
2. Present knowledge of technical and management integrated with critical thinking, problems solving and effective communication.
3. Application of knowledge on social, financial, and environmental problems and contribute in ethical and responsible manner.
4. Demonstrate skills in graduates to work independently as well as in diverse teams for continual professional growth.

Program Learning Outcomes (PLOs)

The twelve graduate attributes provided by the PEC as per Manual of Accreditation 2014 have been adopted by the Faculty of Agricultural Engineering, SAU Tandojam as the PLOs for its Bachelor in Agricultural Engineering Program.

Following are the twelve program learning outcomes for the graduates of Bachelor of Engineering in Agriculture.

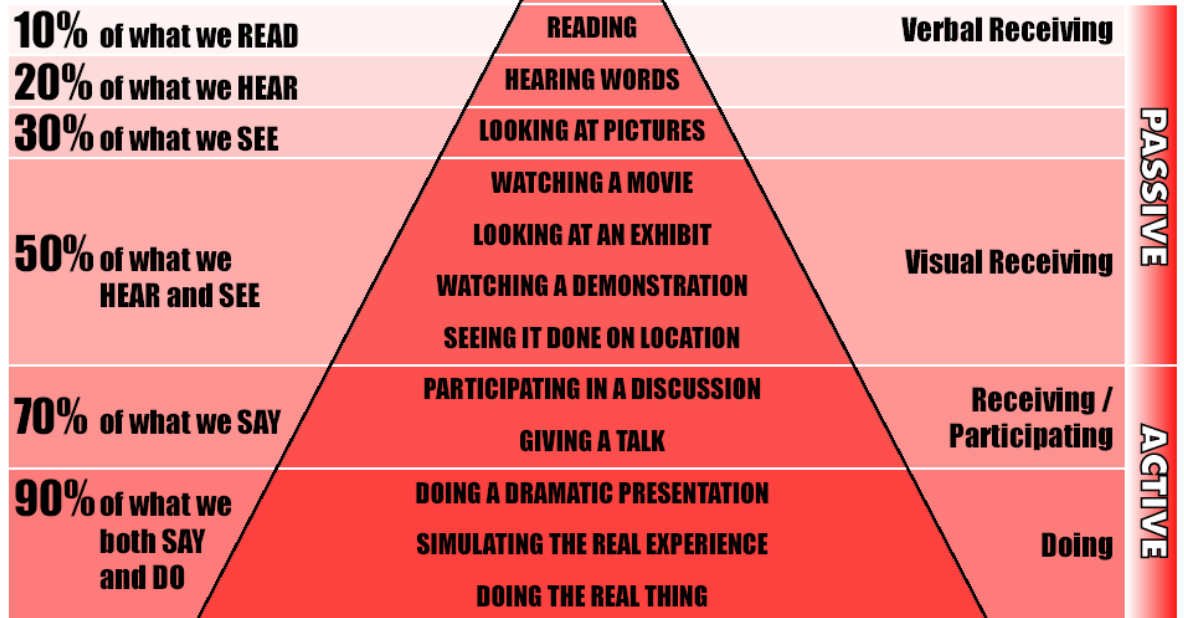
1. **Engineering Knowledge:** An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** An ability to identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. **Design/Development of Solutions:** An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. **Investigation:** An ability to investigate complex engineering problems in a methodical way including literature feedback, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.
5. **Modern Tool Usage:** An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.
6. **The Engineer and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.
7. **Environment and Sustainability:** An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

9. **Individual and Teamwork:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.
10. **Communication:** An ability to communicate effectively, orally as well as in writing, on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project Management:** An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.
12. **Lifelong Learning:** An ability to recognize importance of and pursue lifelong learning in the broader context of innovation and technological developments.

Cone of Learning (Edgar Dale)

**After 2 weeks
we tend to remember...**

**Nature of
Involvement**



BLOOM'S TEXANOMY

Cognitive Domain

(thinking, knowledge)

<p>Knowledge</p> <p>Definition: Remembers previously learned material.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • define • identify • label • list • name • recall • state 	<p>Comprehension</p> <p>Definition: Grasps the meaning of material (lowest level of understanding).</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • describe • discuss • explain • locate • paraphrase • give example • translate 	<p>Application</p> <p>Definition: Uses learning in new and concrete situations (higher level of understanding).</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • apply • carry out • demonstrate • illustrate • prepare • solve • use 	<p>Analysis</p> <p>Definition: Understands both the content and structure of material.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • analyze • categorize • compare • contrast • differentiate • discriminate • outline 	<p>Synthesis</p> <p>Definition: Formulates new structures from existing knowledge and skills.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • combine • construct • design • develop • generate • plan • propose 	<p>Evaluation</p> <p>Definition: Judges the value of material for a given purpose.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • assess • conclude • evaluate • interpret • justify • select • support
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Based on "Taxonomy of Educational Objectives", B.S. Bloom Editor, 1956



Psychomotor Domain

(doing, skills)

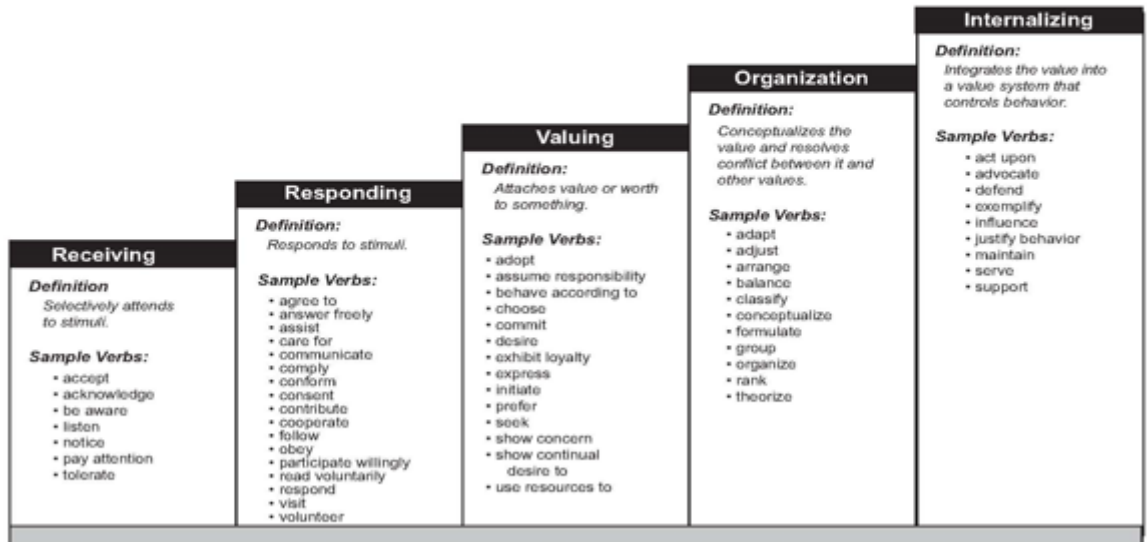
<p>Perception</p> <p>Definition: Senses cues that guide motor activity.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • detect • hear • listen • observe • perceive • recognize • see • sense • smell • taste • view • watch 	<p>Set</p> <p>Definition: Is mentally, emotionally, and physically ready to act.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • achieve a posture • assume a body stance • establish a body position • place hands, arms, etc. • position the body • sit • stand • station 	<p>Guided Response</p> <p>Definition: Imitates and practices skills, often in discrete steps.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • copy • duplicate • imitate • manipulate with guidance • operate under supervision • practice • repeat • try 	<p>Mechanism</p> <p>Definition: Performs acts with increasing efficiency, confidence, and proficiency.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • complete with confidence • conduct • demonstrate • execute • improve efficiency • increase speed • make • pace • produce • show dexterity 	<p>Complete Overt Response</p> <p>Definition: Performs automatically.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • act habitually • advance with assurance • control • direct • excel • guide • maintain efficiency • manage • master • organize • perfect • perform automatically • proceed 	<p>Adaption</p> <p>Definition: Adapts skill sets to meet a problem situation.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • adapts • reorganizes • alters • revises • changes 	<p>Organization</p> <p>Definition: Creates new patterns for specific situations.</p> <p>Sample Verbs:</p> <ul style="list-style-type: none"> • designs • originates • combines • composes • constructs
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Based on "Taxonomy of Educational Objectives", B.S. Bloom Editor, 1956



Affective Domain

(feeling, attitudes)



Based on "Taxonomy of Educational Objectives", B.S. Bloom Editor: 1956

Student-Centered Learning

Getting students to do anything active (individually or in groups)

Getting students to work in pairs or group

Getting students to work together in a structured group activity that meets specified criteria

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Inductive learning : Start with problems, then teach solution methods (PBL, inquiry, E)

