



## TR 1– TECHNOLOGY RESEARCH 1

### UNIVERSITY VISION

A leading University in advancing scholarly innovation, multi-cultural convergence, and responsive public service in a borderless Region.

### UNIVERSITY MISSION

The University shall primarily provide advanced instruction and professional training in science and technology, agriculture, fisheries, education and other related fields of study. It shall also undertake research and extension services, and provide progressive leadership in its areas of specialization.

### UNIVERSITY STRATEGIC GOALS

- a. Deliver quality service to stakeholders to address current and future needs in instruction, research, extension, and production
- b. Observe strict implementation of the laws as well as the policies and regulations of the University
- c. Acquire with urgency state-of-the-art resources for its service areas
- d. Bolster the relationship of the University with its local and international customers and partners
- e. Leverage the qualifications and competences in personnel action and staffing
- f. Evaluate the efficiency and responsiveness of the University systems and processes

### INSTITUTIONAL OUTCOMES (IO)

- a. Enhance competency development, commitment, professionalism, unity and true spirit of service for public accountability, transparency and delivery of quality services
- b. Provide relevant programs and professional trainings that will respond to the development needs of the region
- c. Strengthen local and international collaborations and partnerships for borderless programs
- d. Develop a research culture among faculty and students
- e. Develop and promote environmentally-sound and market-driven knowledge and technologies at par with international standards
- f. Promote research-based information and technologies for sustainable development
- g. Enhance resource generation and mobilization to sustain financial viability of the university

### PROGRAM OUTCOMES (PO) COMMON TO ALL PROGRAMS AND ITS RELATIONSHIPS TO INSTITUTIONAL OUTCOMES

A graduate of the BlndTech program can:	INSTITUTIONAL OUTCOMES (IO)						
	a	b	c	d	e	f	g
a. Analyze broadly defined industrial technology processes by using analytical tools that enhance creativity, innovativeness, and intellectual curiosity to improve methods, processes, and systems that meet the industry standards;	✓	✓				✓	
b. Design and implement broadly defined industrial systems, components, products, or processes to meet specific industry needs with proficiency and flexibility in the area of specialization in accordance with global standards;	✓	✓		✓		✓	

c. Apply appropriate techniques, resources, and state-of-the-art industrial technology tools to meet current industry needs and use these modern tools and processes to improve and increase entrepreneurial activities upholding the safety and health standards of business and industry;	✓		✓	✓	✓		
d. Communicate with diverse groups of clientele the appropriate cultural language with clarity and persuasion, in both oral and written forms, including understanding and giving of clear instructions, high comprehension level, effectiveness in delivering presentations and writing documents, and articulating technological innovation outputs;	✓	✓	✓	✓	✓		
e. Develop leadership and management skills in a team-based environment by making informed decisions, keeping the team motivated, acting and delegating responsibility, and inspiring positive changes in the organization by exercising responsibility with integrity and accountability in the practice of one's profession;	✓	✓	✓	✓	✓		
f. Practice the moral responsibilities of an industrial technologist to manage and balance wider public interest and uphold the norms and safety standards of the industrial technology profession;				✓	✓	✓	✓
g. Demonstrate enthusiasm and passion for continuous personal and professional development in broadly defined industrial technology and effecting positive changes in the entrepreneurial and industrial endeavor; and	✓	✓	✓	✓	✓	✓	✓
h. Recognize the need for, and an ability to engage in lifelong learning.	✓	✓	✓	✓	✓	✓	✓

1 COURSE CODE TR 1

2 COURSE TITLE Technology Research 1

3 PREREQUISITE Third year standing

4 CREDITS 3 units

### 5 COURSE DESCRIPTION

This course introduces students in the Bachelor of Technical Vocational Teacher Education (BTVTEd) program to the foundational processes of conducting scholarly research in technical-vocational contexts. This course covers both qualitative and quantitative research approaches, emphasizing the identification and formulation of research problems, critical review and synthesis of related literature, and the construction of conceptual and theoretical frameworks. Students learn to design appropriate methodologies, develop data-gathering instruments, and draft a coherent research proposal. Course activities include lectures, workshops, collaborative brainstorming, manuscript drafting, and outline defense presentations. Upon completion, students will be able to justify methodological choices, demonstrate academic writing proficiency, and present their research plans professionally—preparing them for advanced inquiry and full-scale research implementation in subsequent courses.

6 COURSE LEARNING OUTCOMES (CLO) AND ITS RELATIONSHIPS TO PROGRAM OUTCOMES		Program Outcomes							
Course Learning Outcomes (CLO)		a	b	c	d	e	f	g	h
At the end of the course, a student can:									
a. Understand SKSU-VGMO, Classroom Policies, Course Overview, Course Requirements and Grading System;		✓	✓	✓	✓	✓	✓	✓	✓
b. Implement the research methodology, conduct data collection, and analyze results to generate meaningful insights for food product development.;		✓	✓	✓	✓	✓	✓	✓	✓
c. Develop a standardized and market-ready food product by applying food safety, quality control, and regulatory		✓	✓	✓	✓	✓	✓	✓	✓

standards;

d. Integrate intellectual property principles into product branding, packaging, and commercialization strategies;	✓	✓	✓	✓	✓	✓	✓	✓
e. Assess the feasibility and market potential of the developed product through business model analysis and industry validation; and	✓	✓	✓	✓	✓	✓	✓	✓
f. Communicate research findings and product innovations effectively through a formal research defense and product presentation.	✓	✓	✓	✓	✓	✓	✓	✓

## 7 COURSE CONTENTS

WEEK	CONTENT	INTENDED LEARNING OUTCOMES (ILOs)	TEACHING AND LEARNING ACTIVITIES (TLA)	OUTCOMES-BASED ASSESSMENT (OBA)	COURSE LEARNING OUTCOME S (CLOS)
1	<b>Course Orientation</b> SKSU VMGO, Classroom Policies, Course Overview, Course Requirements, Grading System	At the end of the week, the student can: a. Discuss the University's VMGO, classroom policies, course overview, requirements and grading system	Discuss the VMGO of the University, the classroom policies, scope of the course, course requirements and grading system	a. Participation in discussions	a, b, c, d, e, f
2-4	<b>Chapter I: Fundamentals of Research</b>	At the end of the week, the students can: a- Explain various types of research in technical education b. Identify and formulate research problems relevant to TVET	a. Lecture - Small group brainstorming and problem identification - Writing research questions.	a. Written research problem statement and rationale.	a
5-7	<b>Chapter II: Literature Review &amp; Conceptual Framework</b>	At the end of the week, the students can: a. Locate, review, and synthesize related literature b. Construct a conceptual/theoretical framework	a- Library/internet research - Discussion on reviewing literature - Writing framework drafts	a. Submission of literature review and framework draft	a
8-10	<b>Chapter III: Research Design &amp; Methodology</b>	At the end of the week, the students can: a. - Differentiate research designs - Select appropriate methods for TVET research - Develop a research instrument	a. Lecture - Workshop on instrument development - Peer critique sessions - Drafting survey/interview guide	a. Research design proposal - Draft instrument	b

11-12	<b>Outline Defense</b>	At the end of the week, the students can:  Present and justify research proposal outline (Chapters I-III) in front of a panel	a. - Preparation of outline presentation - Defense workshop - Q&A and feedback session	a- Outline oral defense before a panel - Panel feedback	b, c
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Total No. of Hours : 30

## 8 COURSE REQUIREMENTS AND COURSE POLICIES

### COURSE REQUIREMENTS

1. Submit a Complete Draft of Chapters I-III
2. Prepare and submit a written manuscript containing:
3. Chapter I: Introduction to Research (Background, Rationale, Statement of the Problem, Objectives, Significance, Scope and Delimitation)
4. Chapter II: Review of Related Literature and Conceptual/Theoretical Framework
5. Chapter III: Research Design and Methodology (Design, Sampling, Instrumentation, Procedures, Data Analysis Plan)
6. Participate in Chapter-based Consultations and Peer Reviews
7. Attend scheduled consultations with the instructor/adviser for feedback and revision, and actively engage in peer critique sessions of classmates' work.
8. Prepare and Defend an Outline Presentation
9. Present Chapters I-III before a panel for Outline Defense, clearly discussing the research problem, literature support, and chosen methodology.
10. Develop Research Instruments
11. Create and submit at least one valid and reliable data-gathering tool (e.g., survey questionnaire, interview guide) aligned with the approved research design.

### COURSE POLICIES

#### Attendance and Participation

- Regular attendance is expected in all lectures, workshops, and consultations.
- Active participation in brainstorming, literature searches, and instrument development workshops will be graded.

#### Submission of Requirements

- All manuscripts, instruments, and presentations must be submitted on or before the announced deadlines.

- Late submissions will incur a penalty unless supported by valid documentation (medical/emergency) and approved by the instructor.

#### Academic Honesty

- Plagiarism, falsifying sources, and fabricating data are prohibited.
- Proper citation of all references is mandatory following the approved citation style.
- Offenses will result in sanctions according to university academic integrity policies.

#### Use of Artificial Intelligence (AI)

- AI tools may be used only for grammar checking and improving writing clarity.
- Generating literature summaries, methodology write-ups, or original research content via AI is not permitted.
- Any AI misuse will be subject to academic investigation.

#### Collaborative Work

- Group activities (if applicable for topic selection or peer-review tasks) must involve fair contributions from all members.
- Each member's role must be documented in group submissions.

#### Consultation and Revisions

- Students must attend all scheduled consultations to refine their manuscripts based on adviser or panel feedback.
- Revisions from outline defense must be incorporated before proceeding to the next stage of the course.

#### Outline Defense

- Formal attire is required during the presentation.
- The defense will focus on Chapters I-III only. Students must be prepared to justify the research problem, related literature, conceptual framework, and research methodology.
- Professional conduct and prompt submission of revised manuscripts post-defense are mandatory.

## 9 GRADING SYSTEM AND RUBRICS FOR GRADING

### GRADING SYSTEM

Assessment Task	Weight (%)
Clarity & Organization of Content	20%
Research Problem & Objectives Justification	20%
Review of Related Literature & Framework	15%
Appropriateness of Research Design & Methodology	20%
Communication Skills & Presentation Delivery	10%
Ability to Answer Questions & Defend Study	15%
TOTAL	100%

aterials used: Laptop, Powerpoint presentations,  
Books, Online slides, Teacher-made slides and module

References:

1. Creswell, J.W. (2012). Educational research: planning, conducting, and evaluating quantitative and qualitative research. Pearson Education, Inc.4th Edition.
2. Polit, D.F. & Beck, C.T. (2004). Nursing research: principles and methods. Lippincott- Raven Publishers. 7th Edition. ISBN10: 0781737338

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