Republic of the Philippines
SULTAN KUDARAT STATE UNIVERSITY
Isulan, Sultan Kudarat
College of Computer Studies
S.Y. 2024-2025

UNIVERSITY VISION

A trailblazer in arts, science and technology in the region.

UNIVERSITY MISSION

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

UNIVERSITY GOAL

To produce graduates with excellence and dignity in arts, science and technology.

UNIVERSITY OBJECTIVES

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 Objectives and its relationship to University Objectives:

PROGRAM OBJECTIVES (PO)	UNIVERSITY OBJECTIVES						
A graduate of BS in Information Technology can:	a	b	c	d	e	f	g
1. innovate technological concepts and ideas underpinning desired IT solutions;	/	/		/	/	/	/
2. administer competently the computer networks, system development, software applications operations, hardware servicing and maintenance;	/	/	/	/	/	/	/
3. design industry-based applications, infrastructures and technologies that will promote the advancement and development of the community;	/	/	/	/	/	/	/
4. demonstrate the code of conduct as well as the social and legal aspects of information technology.	/	/	/	/	/	/	/

1. Course Code : CC116
2. Course Title : Application Development and Emerging Technologies
3. Prerequisite :
4. Credits : 3 UNITS

5. Course Description:
This course introduces students to modern application development practices and emerging technologies. It covers the full software development lifecycle, from design to deployment, while exploring contemporary tools, frameworks, and technologies such as artificial intelligence, cloud computing, and IoT. Bloom's taxonomy guidesthe progression of learning objectives and assessments.

6. Course Learning Outcomes and Relationships to Program Objectives

Course Learning Outcomes	Program Objectives			
At the end of the semester, the students can:	a	b	c	d
a. Understand the principles of modern application development.	/	/		/
b. Apply development tools and frameworks for building robust applications.	/	/	/	
c. Analyze emerging technologies and their impact on application design.	/	/	/	
d. Evaluate different development methodologies and deployment strategies.	/	/	/	/
e. Create scalable and innovative solutions using cutting-edge technologies.	/	/	/	/

7. Course Content

Course Objectives, Topics, Time Allotment	Desired Student Learning Outcomes	Outcomes-Based Assessment (OBA) Activities	Evidence of Outcomes	Course Learning Outcomes	Program Objectives	Values Integration
1. Topic: SKSU VMGO, Classroom Policies, Course Overview, Course Requirements, Grading System (1 hour)						
1. Discuss the VMGO of the university, classroom policies, scope of the course, course requirements and grading system	1.1 Student can be aware of and appreciate of the university's VMGO, classroom policies, course overview, requirements and grading system.	Individual participation in class discussion and group presentation	Group and individual discussions	a,i	e	Value of appreciation
2. Introduction to Application Development *(2 Weeks)*						
1. Software Development Life Cycle (SDLC), Agile, DevOps	1. Describe the phases of SDLC and methodologies like Agile and DevOps.	Quiz, Class Discussion	Quiz Scores, Discussion Notes	a,b,c,d,e	a,b,c,d,e	Value of appreciation
3. Types of Applications (1 Week)						
1. Web, Mobile, Desktop Applications	1. Compare different types of applications and their use cases.	Assignment, Presentation	Assignment Results, Presentation Decks	a,b,c,d,e	a,b,c,d,e	Value of appreciation
4. Frontend Technologies (2 Weeks)						
1. HTML, CSS, JavaScript, React/Angular	1. Develop user interfaces using modern frontend frameworks. 2.	Lab Exercises	Functional UIs	a,b,c,d,e	a,b,c,d,e	Value of appreciation

5. Backend Development (2 Weeks)						
1. Node.js, PHP, Python, Java	1. Build and analyze backend services using server-side technologies. 2.	Lab Exercises, Practical Exam	Backend Implementation Reports	a,b,c,d,e	a,b,c,d,e	Value of appreciation
6. Mobile App Development (2 Weeks)						
1. Flutter, React Native, Kotlin	1. Create cross-platform mobile applications.	Lab Exercises, Project	Mobile App Prototypes	a,b,c,d,e	a,b,c,d,e	Value of appreciation
7. Emerging Technologies (3 Weeks)						
1. AI/ML, IoT, Blockchain	1. Analyze the potential of emerging technologies in modern applications. 2.	Research Paper, Case Study	Research Paper Results, Case Study Reports	a,b,c,d,e	a,b,c,d,e	Value of appreciation
8. Cloud Computing and Serverless (2 Weeks)						
1. AWS, Azure, Google Cloud, Serverless Architecture	1. Deploy applications using cloud services and serverless architecture.	Lab Exercises, Practical Exam	Cloud Deployment Reports, Exam Results	a,b,c,d,e	a,b,c,d,e	Value of appreciation
9. Microservices and CI/CD (2 Weeks)						
1. Microservices Architecture, Continuous Integration/Delivery	1. Implement microservices and automate deployment pipelines.	Final Project, Lab Exercises	Functional Microservices, Automated Pipelines	a,b,c,d,e	a,b,c,d,e	Value of appreciation
Database Software: Any open-source software						
Contact Hours **:** 94 Hours (Lab: 54, Lecture: 36, Examination: 4)						

8. Course Evaluation

Course Requirements **:** Develop a full-stack application leveraging emerging technologies (e.g., AI-powered mobile app with cloud integration).

Grading System:

MIDTERM and **FINAL-TERM**

Attendance	10%
Quiz/Participation/Assignment/Labwork	40%
Written Examination	50%

MTG+FTG/2=FG

Schedule of Examination:

Midterm **Final Term** **-**

References:

Textbooks:

1. **Clean Code: A Handbook of Agile Software Craftsmanship** by Robert C. Martin
2. **Design Patterns: Elements of Reusable Object-Oriented Software** by Erich Gamma et al.
3. **You Don't Know JS (Book Series)** by Kyle Simpson
4. **Node.js Design Patterns** by Mario Casciaro and Luciano Mammino
5. **Learning React** by Alex Banks and Eve Porcello
6. **Flutter Complete Reference** by Alberto Miola
7. **Machine Learning Yearning** by Andrew Ng
8. **Cloud Computing: Concepts, Technology & Architecture** by Thomas Erl 9. **Microservices Patterns** by Chris Richardson 10.**The DevOps Handbook** by Gene Kim et al.

Supplemental:

1. Mozilla Developer Network (MDN)
2. Google Developers Training
3. AWS Training and Certification
4. Microsoft Learn – Application Development
5. Coursera – Emerging Technologies and Application Development
6. Pluralsight – Application Development Tracks
7. GeeksforGeeks – Application Development
8. FreeCodeCamp – Frontend and Backend Development
9. IBM Developer – Emerging Technologies
10. YouTube – Academind Channel

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