SYLLABUS

Name of course	**INFORMATION AND COMMUNICATION TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT (ICT4SD)**
Code of course	**XXX**
University	**UNIVERSITIES WITHIN THE CONSORTIUM OF ERASMUS+ MASUDEM**
Faculty	**XXX**

GENERAL INFORMATION				
Degree level	Master			
Year of Study	1	**Semester:**		1
Subject of study	The role of information and communication technology in various aspects of sustainable development.			
Language required for the course	English			
List of degree programs	The course can be beneficial for students pursuing various master's programs on sustainability, business, public administration, and information technology.			

ACTIVITIES					
Number of credits, ECTS	3 Credits or 6 ECTS				
Lectures, hours	28	**Practices (workshop), hours**	-	**Seminar, hours**	
Per week		1/1	**Per course**		14/14

COURSE DESCRIPTION

This course delves into the transformative potential of Information and Communication Technology (ICT) in driving and supporting sustainable development. Development is viewed as the expansion of human freedom and capabilities, as suggested by Amartya Sen (1999), that involves enhancing people's choices, opportunities, and agency to achieve their well-being. The capabilities include the ability to lead to a healthy life, to acquire education, to participate in political processes, to have economic opportunities, and more. Sustainability issues and considerations are to ensure that the actions and choices made for the development do not compromise the ability of future generation to meet their own needs and the health of the planet.

ICT emerges as a powerful tool in sustainable development by enhancing accessibility, efficiency, and inclusivity across various sectors. ICT facilitates actions execution and plays a crucial role in informed decision-making. By fostering innovation, ICT stimulates economic growth, reduces barriers to services, and promote collaboration. While leveraging those benefits, it is essential to address associated challenges such as digital divide and cyber threats.

This course consists of three main parts: theoretical frameworks (to strengthen the foundations of ICT4SD), real-world case studies (to widen the horizon in ICT4SD), and a mini research project (to dive into the practical cases of ICT4SD). In this course, sustainability issues include, but are not limited to, Sustainability Development Goals (SDGs).

AIM OF THE COURSE

1. To introduce students to the foundational concepts of ICT4SD.
2. To develop students' skill in analyzing the role of ICT in accelerating the realization of SDGs.
3. To equip students with skills to design, implement, and evaluate a research project on ICT4SD.

CONTENTS

1. Understanding ICT4SD
2. Theoretical frameworks for ICT4SD
3. ICT for human and welfare development (including SDG 1, 2, 3, 4)
4. ICT for economic development (SDG 8, 9, 17)
5. ICT for society development (SDG 5, 10, 16)

6. ICT for environmental development (SDG, 6, 7, 11, 12,13, 14, 15)
7. ICT4SD challenges
8. Research in ICT4SD

	EVALUATIONS *(add lines as needed)*	
1	Learning activities (case study analysis, mini research project)	40%
2	Midterm exam	30%
3	Final exam	30%

ASSESSMENT CRITERIA
● Obligatory activities: engagement in classes, weekly assignments (article reviews, presentations, research project).   ● Midterm exam: covering materials from week #1 to #7 (the form of exam TBC)   ● Final term exam: covering materials from week #8 to #14 (project report)   ● Plagiarism is strongly prohibited and may lead to dismissal from the class.

PRE-REQUIREMENTS FOR STUDENTS
None

LEARNING OUTCOMES
Competencies: Upon the completion of the course, students are expected to understand the relationship between ICTs and sustainable development, its related underlying concepts, theories, and confirmed cases.
Skills: Upon the completion of the course, students will gain the capacity to: ● understand the variety of technologies related to the management of information on sustainable development,   ● understand the application of ICT in the operation of sustainable development,   ● critically analyze the role of ICT in accelerating the realization of SDGs,   ● conduct research on ICT4SD.

LEARNING STRATEGIES
● Lectures through interactive presentations.   ● Case studies, which highlight the application of ICT in sustainable development.   ● Group discussions and debates to allow the exchange of ideas and to foster critical thinking.   ● Guest speakers from the industry and entities related to the practice of ICT in sustainable development.   ● Research project to study the application of ICT4SD in local areas.   ● Assignments to assess individual learning achievement.

RECOMMENDED SOURCES
Compulsory literature: 1. Sen, A. (1999). Development as freedom. New York: Oxford University Press.   2. Marolla, C. (2018). Information and Communication Technology for Sustainable Development. CRC Press.   3. Ragnedda, M. and Muschert, G.W. (eds) (2013). The Digital Divide: The Internet and Social Inequality in International Perspective. Routledge.
Suggested reading: 1. Choudrie, J. et al. (eds) (2017). *Information and Communication Technologies for Development*. Proceedings of the 14th IFIP WG 9.4 International Conference on Social Implications of Computers in Developing Countries. Springer.   2. Tuba, M., Akashe, S., and Joshi, A. (eds) (2023). *ICT Systems and Sustainability*. Proceedings of ICT4SD

2023. Springer.

Selected internet sources:

1. Information and Communication Technology for Sustainable Development: Defining a Global Research Agenda. https://www.cs.cmu.edu/~rtongia/ICT4SD_Full_Book.pdf
2. ICTs for a Sustainable World. https://www.un.org/sustainabledevelopment/blog/2015/10/icts-for-a-sustainable-world/

GROUP OF COURSE DEVELOPERS

Course Leader:
- Dr. Teduh Dirgahayu (UII)

Board:
- Dr. Jaruwat North Patmanee (NU)
- Prof. Fathul Wahid (UII)

Date of approval of the course

Comments:

No.	Date	Comment	Who
1.			
2.			
3.			
4.			