DIPLOMA OF BASIC STUDIES

Site-Adapted Transformation Technologies in the Global South

at the Center for International Studies (CIS) Kassel

UNIKASSEL VERSITÄT

UNIKIMS

SITE-ADAPTED TRANSFORMATION TECHNOLOGIES IN THE GLOBAL SOUTH

The program offers students worldwide the chance to acquire technical expertise as generalist engineers, equipping them to tackle challenges in the Global South more effectively and sustainably. With a modular educational approach, it supports countries in the Global South in navigating technological transitions. Core focus areas include wind and solar energy, water and wastewater management, agriculture, biogas, and energy storage.

Upon completing 30 credits – equivalent to 900 hours of study – students will earn a Diploma of Basic Studies from the University of Kassel. Designed as a part-time program, it primarily targets development aid workers, equipping them with technological insights to enhance the sustainability of development initiatives.

Students can choose to take individual modules or complete the full program, allowing for a personalized learning experience. The courses are delivered entirely online, ensuring flexible access for all students. In addition to live lectures, students will have access to recorded sessions, discussion forums, an online library with relevant literature, digital learning platforms, and personal online consultation hours. This approach ensures both accessibility and interactivity.

Prof. Dr. Detlef Kuhl
Academic Director of the Center for
International Studies (CIS) Kassel

PROGRAM OVERVIEW

Type of program	Part-time online Diploma of Basic Studies (DBS)
Language	English
Standard period of study	2 semesters
Total credits	30 credits
Program start	Winter semester & Summer semester
Application deadline	Winter semester: September 1st Summer semester: March 1st
Tuition fees	3900,- EUR* (independent from study duration) Can be paid in installments of 1950,- EUR each semester, non-refundable
Payment method	Bank transfer
Program management	University of Kassel & UNIKIMS, the Management School of the University of Kassel
Eligibility	+ University entrance qualification *or* professionally qualified / professional experience + English certificate – B2

*Participation only in specific modules is possible.
A 6-credits module costs 780,- EUR.

MODULES OF THE DIPLOMA COURSE

SOLID WASTE ENGINEERING FOR DEVELOPING ECONOMIES

Solid waste management is a major issue in developing countries, due to its contamination potential, if mismanaged, of the natural environment along with the rapid growth in its generation in the foreseeable future. The course deals with appropriate engineering and management concepts for treatment and utilization of solid waste in developing economies. The course will equip students with basic knowledge and methodological skills to understand waste generation and collection, relevant waste properties and key processes (biological, thermal, mechanical), and analytical tools to design appropriate waste treatment processes and management systems.

A landfill site near Kasungu, Malawi. There are no waste treatment or recycling facilities, the dump is the only option for waste disposal

INTRODUCTION TO URBAN WATER MANAGEMENT

Access to clean water for sustenance and the treatment of greywater are ongoing sustainability challenges in Global South countries. Ensuring a sufficient supply of drinking water is an essential aspect of proper nutrition. Equally important is the management of process water and its treatment in sewage treatment plants. This course offers fundamental knowledge on the technical aspects of drinking water supply. It covers decentralized wells, pumping systems, filtration systems for drinking water, and distribution networks for rural areas. Additionally, it addresses a key challenge in urban water management, which is the treatment of greywater, with a strong emphasis on decentralized technologies.

A typical scene in remote areas: Hand-operated water pumps. Photo taken in Malawi, Africa

Agricultural test fields near Kasungu, Malawi

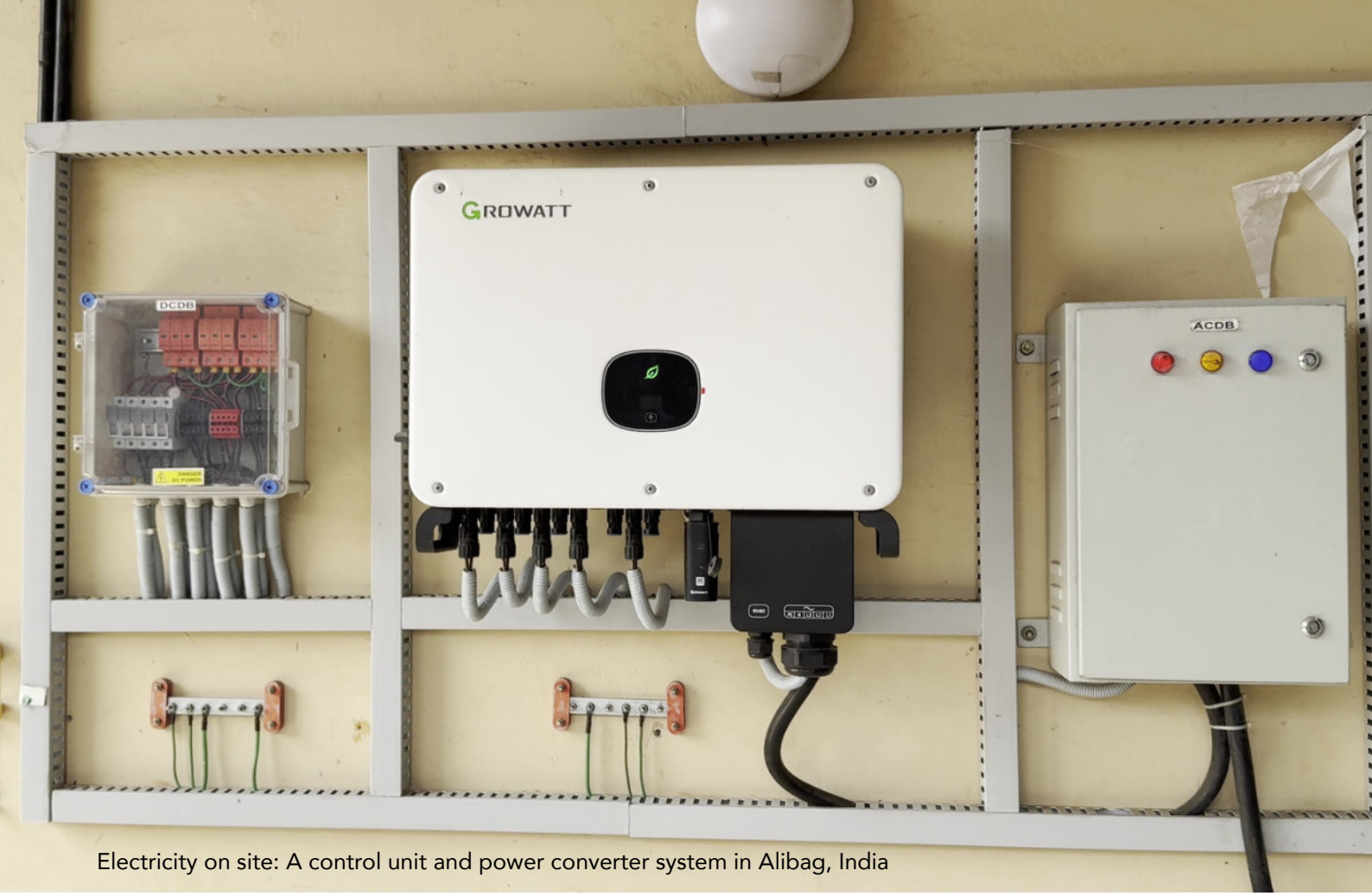
ORGANIC AGRICULTURE ENGINEERING

SITE-ADAPTED IRRIGATION TECHNIQUE AND CROPS

Providing an adequate and balanced food supply within the constraints of local climate and soil conditions is a significant challenge in the Global South. In the Organic Agriculture Engineering module, students explore strategies for optimizing irrigation, utilizing climate data more effectively, identifying nutrientrich crops, and combining different plant varieties. The last aspect is particularly focused on enhancing pest resistance and maintaining a continuous production of essential plant nutrients.

CONCEPTS OF WIND AND SOLAR ENERGY UTILIZATION

The foundation of a fulfilling life with access to light, information, education and machinery is a reliable supply of electrical energy, preferably generated from renewable sources. The main natural energy resources that can be activated with little effort are wind and sun, which can be harnessed with simple energy converters on both a small and large scale. The course describes the physical phenomena of solar radiation and wind generation and basic technical concepts for converting solar energy into electricity and heat and wind energy into electrical energy. Technical concepts such as photovoltaic panels, vertical axis wind generators and horizontal axis wind turbines are explained and calculated in terms of loads, performance and total yield.



Electricity on site: A control unit and power converter system in Alibag, India

BASICS OF ELECTRICAL ENGINEERING AND ENERGY STORAGE

The continuous use of green energy from the sun and wind, with the characteristic of fluctuating energy yields and energy gaps, requires reliable and efficient storage of electrical energy. Only the joint electrotechnical function of wind and solar systems in conjunction with at least a local grid infrastructure and energy storage can ensure a reliable supply of electrical energy to the population in the Global South.

The course teaches the electrical engineering fundamentals of electrical circuits, generators, photovoltaics, and storage technologies. The aim is to equip students with the skills to plan, operate, and control local electricity grids, including generation systems and storage.

ALWAYS UP TO DATE

For the exact contents of the modules, dates, and current information, please view our website at **www.cis-kassel.de**.

A FULLY ONLINE PROGRAM FIT FOR WORKING PROFESSIONALS

Working students have unique needs when it comes to organizing their studies and knowledge transfer, and this program is designed to meet those demands. With fully online teaching, students can manage their studies with great flexibility, regardless of time or location. Virtual seminar rooms on the eCampus are accessible at any time for seminars, presentations, project work, and informal meetings. Additionally, documents, deadlines, and organizational updates can easily be shared and exchanged via the eCampus platform.

BENEFITS OF THE PROGRAM

+ Study online anytime, anywhere, with flexible course loads
+ Learn in small, interactive classes and take exams online
+ Network with fellow students, lecturers, and industry experts from leading institutions
+ Access support for any study-related issues and guidance
+ All credits can be fully recognized for a subsequent Bachelor's degree course with equivalent content

Receive personalized assistance throughout the application process, along with one-on-one consultations with the course management team. Upon completion, you will earn a certificate or a diploma from the University of Kassel and the Management School of the University of Kassel, unlocking exciting career opportunities in the green energy and sustainability sectors. Stay connected with your professional network and continue your educational journey by pursuing advanced qualifications, such as a Bachelor's or Master's degree.

WE WOULD BE DELIGHTED TO ADVISE YOU.

CONTACT US

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About the Center for International Studies (CIS)

Leveraging its extensive experience in providing university education through online seminars, UNIKIMS, the Management School of the University of Kassel, is dedicated to making this opportunity accessible to individuals with fewer privileges. UNIKIMS seeks to foster sustainable development through education by establishing the newly founded 'Center for International Studies' (CIS). Founded in 2025, the center offers students worldwide the opportunity to acquire technical expertise as generalist engineers to address challenges in the Global South more effectively and sustainably. CIS provides part-time studies through Diplomas of Basic Studies for professionals working in NGOs, engineering, development aid programs, and local talent in Global South nations, all of whom are committed to driving change in their communities. Each CIS Diploma is tailored to address the most urgent issues and challenges facing developing countries and their populations.

UNIKIMS is the Management School of the University of Kassel specializing in part-time master's programs, certificates, seminars, and corporate training, blending scientific knowledge with practical application. Since 2005, it has become a key partner in continuing education, serving over 1,200 professionals annually from 300+ companies. Designed for full-time employees, UNIKIMS offers flexible learning through concentrated classroom phases, online seminars, and service-oriented organization.

UNIKIMS is also committed to sustainability, collaborating with NGOs such as Moving Windmills and SOS Children's Villages to develop green energy-focused educational programs for developing countries, covering wind, solar, water, biogas, and ecological agriculture.

University of Kassel

The academic profile of the University of Kassel is shaped by expertise in the fields of nature, technology, culture, and society, with unique potential for interdisciplinary cooperation and innovation. Founded in 1971, the university is a young, modern institution with approximately 25,000 enrolled students. To address the complex challenges of sustainable development, the University of Kassel has been incorporating sustainable transformation into its programs in recent years.