Adama Science and Technology University

Postgraduate Programs

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ASTU

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1.Vision, Mission, and Core Values

1.1. Vision

ASTU aspires to be the first choice in Ethiopia and the premier center of excellence in applied science and technology in Africa by 2030.

1.2. Mission

1. Produce ethical and internationally competent graduates in applied science and technology through quality education.
2. Conduct problem-solving research.
3. Provide demand driven community service.
4. Serve as center for innovative knowledge and technology transfer

1.3. Core values

- Originality and innovativeness
- Excellence in research and academics
- Transparency and accountability
- Sense of belongingness, ownership and commitment
- Diversity, mutual respect and tolerance
- Academic freedom and institutional autonomy
- Professional Ethics and responsiveness
- Good governance and democratization
- Honesty and integrity

2. Schools and Departments

ASTU has been structured in five different schools and fifteen departments indicated below.

i. School of Applied Natural Science

Departments: Applied Biology

Applied Chemistry

Applied Mathematics

Applied Physics

Applied Geology

ii. School of Civil Engineering and Architecture

Departments: Architecture

Civil Engineering

Water Resource Engineering

iii. School of Electrical Engineering and Computing

Departments: Computer Science and Engineering
Electrical Power and Control Engineering
Electronics and Communication Engineering

iv. School of Mechanical, Chemical and Materials Engineering

Departments: Mechanical Engineering
Chemical Engineering
Materials Science and Engineering

v. School of Humanities and Social Sciences

Department: Technology and Innovation Management

3. Lists of Postgraduate Program with Specializations

Adama Science and Technology University (ASTU) first commenced postgraduate program with PhD by Research in 2008 in few departments. The graduate program has then gradually grown into a fully-fledged graduate studies, offering PhD degrees in thirteen programs and master degrees in eighteen programs each having various fields of specialization. The master's program generally requires two academic years of study, while the Ph.D. program requires four years. Admission to ASTU's postgraduate program is applicable only through the university entrance examination. Listed below are the details of the departments, programs, and fields of specializations that ASTU is offering.

3.1. Ph.D. Programs

3.1.1. Regular Ph.D. Programs

i. School of Applied Natural Sciences (SoANS)

Department	PhD Program	Specializations
Applied Biology	Biotechnology	▪ Animal Biotechnology, ▪ Environmental Biotechnology, ▪ Health Biotechnology, ▪ Plant Biotechnology
Applied Chemistry	Applied Chemistry	▪ Medicinal Chemistry, ▪ Synthetic Organic Chemistry, ▪ Natural Product Chemistry, ▪ Materials Chemistry, ▪ Bioinorganic Chemistry

Applied Mathematics	Applied Mathematics	▪ Mathematical Modeling, ▪ Numerical Analysis, ▪ Applied Differential Equations ▪ Optimization ▪ Combinatorics ▪ Algebra ▪ Computational Fluid Dynamics
Applied Physics	Applied Physics	▪ Material Physics, ▪ Laser Spectroscopy, ▪ Condensed matter physics ▪ Quantum Optics and Information

ii. School of Civil Engineering and Architecture (SoCEA)

Department	PhD Program	Specializations
Water Resources Engineering	Water Resources Engineering	• Water Resources Engineering (Irrigation Engineering)
Architecture	Urban Housing and Development	• Urban Housing and Development

iii. School of Electrical Engineering and Computing (SoEEC)

Department	PhD Program	Specializations
Computer Science and Engineering	Computer Science and Engineering	Computer Science and Engineering(Research areas: Cloud and Distributed computing, Data Science, Computer Vision and Robotics, Smart Software systems and solutions, Artificial Intelligence, Computer network security)

Electrical Power and Control Engineering	Electrical Power and Control Engineering	• Electrical power Engineering
Electronics and Communication Engineering	Electronics and Communication Engineering	• Communication Engineering

iv. School of Mechanical, Chemical and Materials Engineering (SoMCME)

Department	PhD Program	**Specializations**
Mechanical Engineering	Thermal Engineering	• Thermal Engineering
	Manufacturing Engineering	• Manufacturing Engineering
	Mechanical System and Vehicle Engineering	• Automotive Engineering • Agricultural Machinery Engineering
Chemical Engineering	Chemical Engineering	• Chemical Engineering

v. School of Humanities and Social Science (SoHSS)

Department	PhD Program	**Specializations**
Technology and Innovation Management	Technology and Innovation Management	• Technology and Innovation Management

3.1.2. Home-grown Collaborative Ph.D. Programs (HCPP)

In addition to its regular Ph.D. programs, ASTU is hosting and co-hosting Home-grown Collaborative Ph.D. Programs (HCPPs), listed below.

Priority area	No	PhD Program
Integrated with Agricultural Mechanization	**1**	Agricultural Machinery Engineering
	2	Irrigation Engineering
	3	Animal Biotechnology
Integrated with Manufacturing	4	Manufacturing Engineering
	5	Power Engineering
	6	Thermal Engineering
	7	Urban and Regional Planning
	8	Water Supply and Sanitary Engineering
	9	Space Science
Integrated with ICT	10	Computer Science & Engineering
	11	Communication Engineering
	12	Big Data
	13	Technology and Innovation Management

3.2. Masters Programs

i. School of Applied Natural Sciences (SoANS)

Department	MSc Program	**Specializations**
Applied Biology	Applied Biology	• Biotechnology • Microbiology • Entomology • Biodiversity Conservation
Applied Chemistry	Applied Chemistry	• Inorganic Chemistry • Industrial Chemistry • Medicinal Chemistry • Synthetic Organic Chemistry • Physical Chemistry • Polymer Chemistry • Analytical Chemistry • Natural Product Chemistry
Applied Mathematics	Applied Mathematics	• Mathematical Modeling • Numerical Analysis • Applied Differential Equations • Algebra • Analysis • Fluid Mechanics
Applied Physics	Applied Physics	• Material Physics • Astrophysics • Laser Spectroscopy • Quantum Optics • Meteorology • Condensed Matter Physics
Applied Geology	Applied Geology	• Engineering Geology

ii. School of Civil Engineering and Architecture (SoCEA)

Department	MSc Program	Specializations
Civil Engineering	Civil Engineering	• Geotechnical Engineering, • Construction Engineering Management
	Geomatics Engineering	• Geo-informatics
Architecture	Architecture	• Environmental Architecture, • Urban Planning and Design
Water Resources Engineering	Water Resources Engineering	• Water Resources Engineering (Irrigation Engineering), • Hydrology and water resource management, • Water supply and environmental Engineering • Hydraulic Engineering

iii. School of Electrical Engineering and Computing (SoEEC)

Department	MSc Program	Specializations
Computer Science and Engineering	Computer Science and Engineering	• Computer Science and Engineering(Research areas: Cloud and Distributed computing, Data Science, Computer Vision and Robotics, Smart Software systems and solutions, Artificial Intelligence, Computer network security)

Electrical Power and Control Engineering	Electrical Power and Control Engineering	• Control Engineering, • Electrical power Engineering, • Power Electronics and Drive
Electronics and Communication Engineering	Electronics and Communication Engineering	• Communication Engineering • Electronics Engineering

iv. School of Mechanical, Chemical and Materials Engineering (SoMCME)

Department	MSc Program	**Specializations**
Mechanical Engineering	Thermal Engineering	• Thermal Engineering
	Manufacturing Engineering	• Manufacturing Engineering
	Mechanical System and Vehicle Engineering	• Automotive Engineering, • Agricultural Machinery Engineering
Materials Science and Engineering	Material Science and Engineering	• Material Science and Engineering
Chemical Engineering	Chemical Engineering	• Chemical Engineering (Process Engineering)

v. School of Humanities and Social Science (SoHSS)

Department	MSc Program	Specializations
Technology and Innovation Management	Technology and Innovation Management	• Technology and Innovation Management

ASTU Research Park

4. ASTU's Centers of Excellences (CoEs)

ASTU established the following Center of Excellences (CoEs) to strengthen the University-Industry Linkages.

- Space Technology Institute (STI)
- Institute of Pharmaceutical Science (IPS)
- Institute of Water Resource and Irrigation Engineering
- Transport and Vehicle Engineering
- Electrical Systems and Electronics
- Urban Housing and Development
- Advanced Manufacturing Engineering
- Advanced Materials Science and Engineering

5. ASTU-ICT

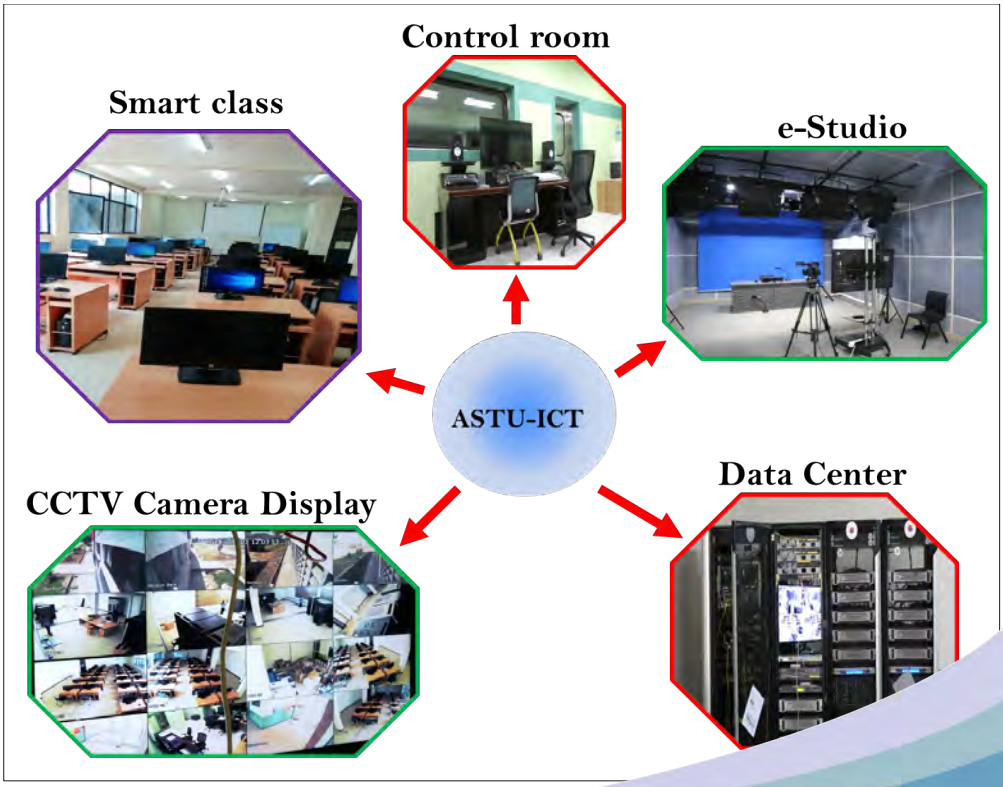
Information Technology Communication (ICT) center and later renamed as ICT directorate of Adama Science and Technology University was established in 2008 G.C with the mission to manage, maintain, upgrade and expand the ICT infrastructure, and automate the business processes in the university. In other words, the directorate focuses on creating conducive working environment which facilitates the teaching-learning, research, community service, and administration services with the ICT support. Providing reliable and adequate network infrastructure through on-time technical support is also among the primary objectives of the directorate. In this regard, the directorate aspires to build a model ICT infrastructure for academic, research and community service in Africa.

So far, ICT directorate has accomplished several activities in its five work units namely Infrastructure and Service (IS), Business Application Development and Administration (BADA), Technical Support and Maintenance (TSM), Technology Teaching and Learning (TTL), and Education and Training (ET).

ASTU network infrastructure has been designed and deployed in three-tier architecture which has made a significant improvement of internet performance throughout the campus. It is delivering fast and reliable Internet and Intranet service on 24/7 for ASTU community. Several open source systems have been customized and implemented in order to improve the services delivery through continuously monitoring and providing maintenance. Accordingly, in-house developed systems are: Human Resource Management System (HRMS), Support Request Management System (SRMS), Employee Attendance Management System (EAMS), Transport Management System (TMS), Procurement and Property Management System (PPMS) and Student Service Management System (SSMS) - Clinic, Cafeteria, and Dormitory Management System.

ASTU has a well-furnished eLearning system which complies with world class standard SMART rooms, control room and e-studio for the purpose of course recording and live transmission. We have adopted and developed various emerging tools and technologies that would simplify the teaching learning tasks. To name few of them, we have a well-designed Learning Management System (LMS) which has a well-defined interface to be scalable and extensible with future tools and technologies.

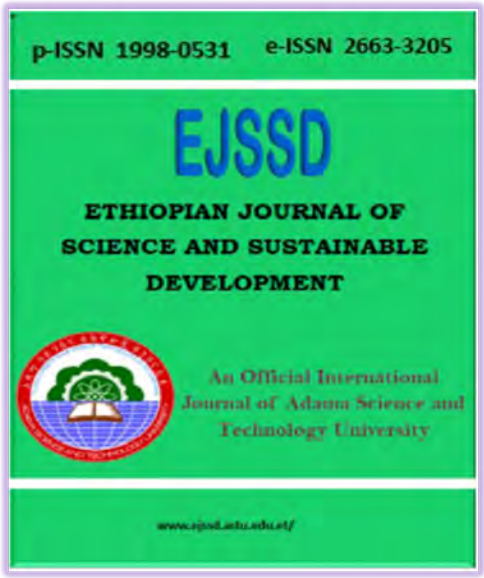
In addition to our LMS, the following globally recognized tools and technologies: Google Suite, Google Meet, Skype, Zoom, Cisco Webex, and Online Examination System Technology have been introduced to the university system. Hence, anyone who needed to use these tools to conduct their teaching and learning tasks are able to use by getting connected to our learning management system. More than 1072 computers that are distributed through the campus laboratories are connected to the internet and dedicated to leverage and support the teaching learning process. Furthermore, ASTU Smart class rooms enhance visually attractive methods of teaching. ICT directorate has committed experts who are actively working towards providing and enhancing all systems developed and implemented by the directorate.



6. EJSSD

Current Issue

Vol 8 No 2 (2021): EJSSD



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Focus and Scope of Journal

The Ethiopian Journal of Sciences and Sustainable Development (EJSSD) is a blind-reviewed official journal of Adama Science and Technology University, Ethiopia. EJSSD is a cross-disciplinary, refereed, open-access bi-annual journal that serves as a platform for academia to exchange scientific information and research results that describe significant advances in the fields of Applied Natural Science, Engineering, Humanities and Social Sciences. Papers from researchers working in different public and private sector, academic institutions, industries, companies, etc., having national/ international interest are accepted for publication.

Abstracting and Indexing

EJSSD is indexed in DOAJ and CiteFactor

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

CiteFactor Academic Scientific Journals

Make a Submission

The manuscripts submission is online using the submission portal (https://ejssd.astu.edu.et/index.php/EJSSD/).

7. Collaborations

ASTU is also working together with several national and international companies and universities on a collaborative basis for research, consultancy, and community services. Some of them are:

Ethiopian
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Ethiopian Air Force

አዲስ አበባ ዩኒቨርሲቲ
ADDIS ABABA UNIVERSITY

JIMMA UNIVERSITY
We are in the Community

BAHIR DAR UNIVERSITY

KARI
Korea Aerospace Research Institute

አዲስ አበባ ሳይንስና ቴክኖሎጂ ዩኒቨርሲቲ
ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

부산대학교
PUSAN NATIONAL UNIVERSITY

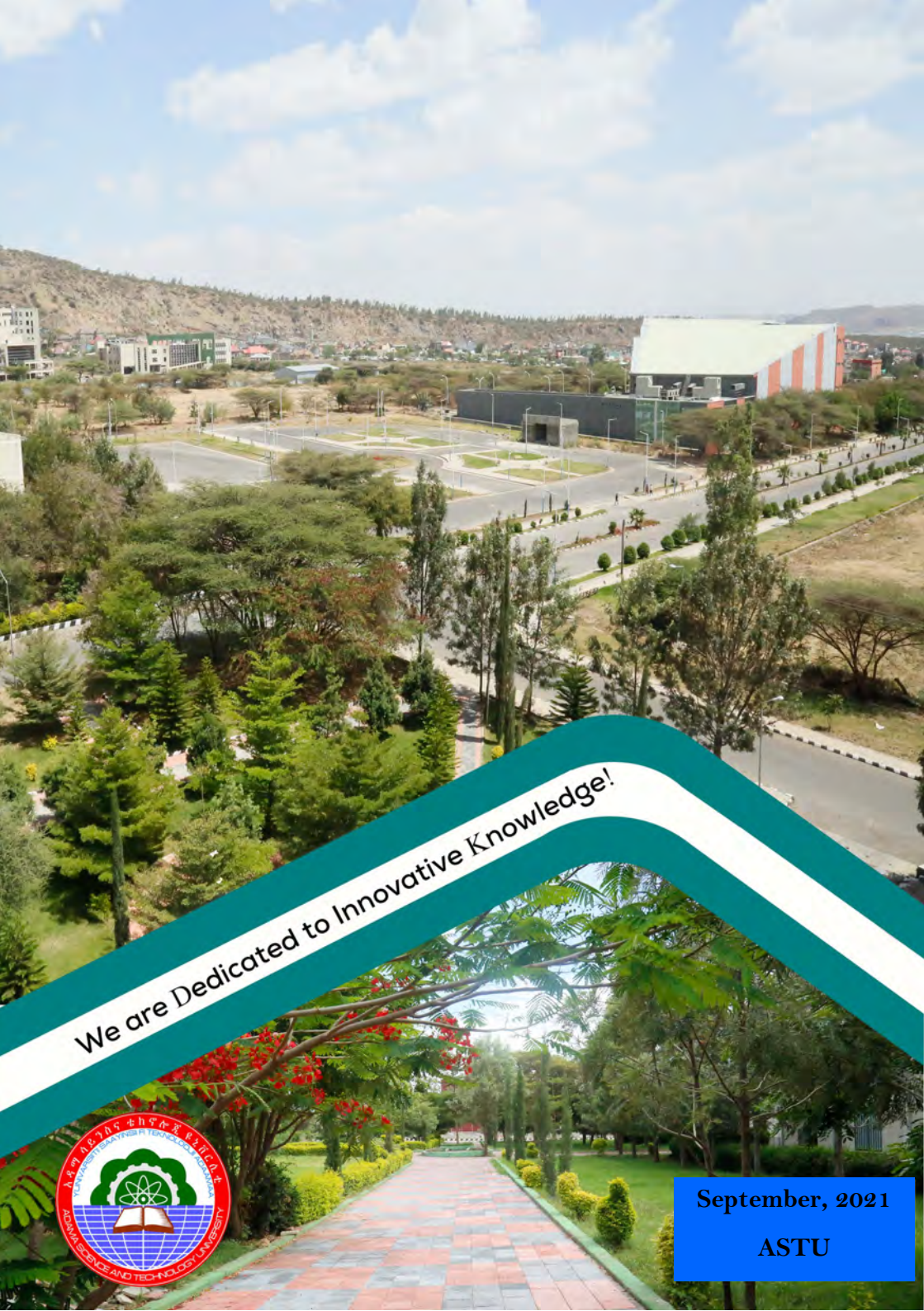
POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY
1986
포항공과대학교

UESTC
1956

충북대학교
NOVAAPERIO
CHUNGBUK NATIONAL UNIVERSITY

KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY
KAIST
1971
한국과학기술원

서울대학교
SEOUL NATIONAL UNIVERSITY


We are Dedicated to Innovative Knowledge!
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ASTU