The Office of Educational Cloud has been established for the purpose of promoting e-learning at the university and improving the quality of education through ICT. Its main work is operating the learning management system (LMS) for the entire university. Furthermore, in an aim to expand educational materials focused on videos that provide better educational benefits than text-based educational materials that have been used up until now, the Office is introducing systems such as an automatic lecture recording and remote lecture system while producing and distributing various multi-media contents. In addition, the Office operates TSUKUBA Open Course Ware (OCW) programs as a means to externally communicate the university’s education and research activities. The Office of Educational Cloud serves as the cloud infrastructure that aggregates these various educational systems at the university.

Specifically, the Office is engaged in the following projects:

1. Operating the learning management system for the entire university
2. Constructing an educational cloud system
3. Developing an automatic lecture recording and remote lecture system
4. Supporting the expansion of video educational materials through coordination between the video distribution server and LMS
5. Operating TSUKUBA OCW
6. Media services - Video production and editing services - Audio-video educational materials and reference materials production services - Audio-video contents and digital archiving services

Organization for Information Infrastructure

Organization for Information Infrastructure is responsible for the information infrastructure of all schools at University of Tsukuba. The role of the organization is to plan and perform the following functions for improving the quality and efficiency of education and research within the university.

The functions include:
1. Maintaining IT infrastructure for education, research, and management
2. Providing information services on the corresponding IT infrastructure
3. Ensuring information security and implementing security measures

Primary activities include:
1. Decision making on information strategies
2. Decision making on information environment infrastructure
3. Ensuring information security

The Organization for Information Infrastructure primarily consists of the Office for Information Infrastructure Planning, the Academic Computing and Communications Center, and the Division of Information Infrastructure Management.

Academic Computing and Communications Center

Academic Computing and Communications Center was established in 2004 by merging Educational Media Center and Science Information Processing Center, both of which had been in operation since the foundation of University of Tsukuba. In 2007, the center was restructured to be included in Organization for Information Infrastructure, which organization is in direct supervision to the university head office and the Vice President in charge of the information strategy of the university.

Academic Computing and Communications Center performs R&D relating to information environments and information services that utilize such environments, as well as maintenance, operation, and service provision for the information infrastructure. Its main activities include:

1. Formulating information infrastructure maintenance plans
2. Maintaining, operating, and providing services for the backbone information network
3. Maintaining, operating, and providing services for the Zengaku computer network
4. Providing various services based on information infrastructure
5. Promoting environmental sophistication to education, such as with e-learning
6. Ensuring information security

These activities and the related highly-advanced research and developments were promoted by an organization consisting of four R&D departments. In 2012, the Office of Educational Cloud was established to develop and to provide educational infrastructure, such as e-learning systems, and to promote media contents.
**Department No. 1 Network Research and Development Department**

Network Research and Development Department mainly performs the following activities and R&D related to activities in addition to operations and management of the backbone of the on-campus network.

1. Operation and management of on-campus backbone network, and operational support of the off-campus research network.
2. Ensuring network security.

**Campus information network**

- Affiliated high schools
- Mountain Science Center (Yatsugatake, Iwata and Sugadari)
- Shimoda Marine Research Center
- Remote connection device

- Core switch C
- Attack defense subsystem
- Supercomputer system of the Center for Computational Sciences

**Subnetwork of the North Area**

- Bunkyo School Building, Tokyo Campus
- Access point

**Subnetwork of the South Area**

- Zengaku system
- Access point

**Subnetwork of the Central Area**

- Kasuga area
- Core switch B
- Access point

**Subnetwork of the West Area**

- Floor switches
- Access point

**Central Area**

1. 2D satellite
2. 2A satellite
3. Bunsyu satellite
4. 3K satellite
5. 3D satellite
6. 1C satellite
7. 1D satellite
8. ACCC satellite
9. Medical Library satellite
10. Kasuga satellite
11. Tokyo satellite
12. Otsuka Library satellite

**South Area**

- Arts and Physical Education Library satellite

**List of Zengaku-system satellites**

- Number of computers
- Computers for the visually impaired available

**Department No. 2 Information System Research and Development Department**

The Information System Research and Development Department supports both general and advanced information processing education and provides services to in-campus users through various computer systems. In terms of R&D, it provides the technologies for increasing the convenience and safety of computing environments.

1. Zengaku computer system

   - Zengaku Computer System provides all students and teachers with an information infrastructure including e-mail and web services. Renewed in March 2017, the system serves more than 1,000 computer terminals on campus satellite computer rooms. The computers, which dual boot between Windows and Linux, have various software installed. More details about the system are available on the following website: https://www.u.tsukuba.ac.jp/

**Department No. 3 Information Security Research and Development Department**

With the recent deluge of information, information or "content" that passes through a network is being required to be appropriately handled, in addition to handling network. In order to support such information handling from the perspective of information security and information ethics, the Information Security R&D Department implements technical countermeasures that respond to the various incidents occurring in the campus network. This is implemented by collaboration with the other three departments of this center and the committees related to information security such as the Incident Response Office of the Organization for Information Infrastructure. The department also performs education planning and awareness education related to information security and information ethics for students and staff for the purpose of deterring the occurrence of incidents and to improve the morals such as in using network and handling of information. Furthermore, the department is involved in R&D of information security technology that enables information systems and services to be used safely.

**Department No. 4 Unified Authentication System Research and Development Department**

Unified Authentication System Research and Development Department operates a unified authentication system, which enables a common password to be used for authentication in various on-campus computer systems. Changes to common passwords for the unified authentication system and views of registered information can be made from the unified authentication system website. Every year there are more and more computer systems which use the unified authentication system. The latest list can also be found on the website.