Laptop Specifications: Basic and Recommended

Fiscal Year 2023 (November 23, 2023)

1. Basic Specifications

The basic specifications indicate the functions of the laptop and other equipment required for use in classes and experiments at the University, as well as the Internet environment required to take remote classes at home.

If you already have a laptop that meets the following specifications, you do not need to purchase a new one.

Required equipment	Specifications
Laptop	Hardware Requirements: ● Wireless LAN. ● A keyboard (2-in-1 models are also acceptable). ● A camera, microphone, and speakers (external devices are acceptable). ● At least one USB port, is required. ● A minimum of 3 hours of battery run time. ● Must be easily portable. Software Requirements: ● The operating system must be either Windows or macOS and should be within the support period set by the OS manufacturer. It must also be capable of connecting to the university network*. ● Microsoft Office and anti-virus software must operate smoothly. These can be installed using the university's blanket license after enrollment.
Others	External Connections: ● A headset compatible with the aforementioned laptop is required. Use the headset for online classes on campus or when connecting it to a smartphone or other device. ● Must have the capability to connect to an external display (note that some models may require a conversion adapter). Preventive Measures Against Breakage and Malfunction: ● Take precautions against accidental damage such as dropping (e.g., use a carrying bag).
Home Internet Environment	● A minimum of 3 Mbps is required for both uplink and downlink communication speeds, although 10 Mbps or higher is recommended.

* Support for Windows 10 (21H2) will end on October 14, 2025. Please stay informed about the support periods for your Windows or macOS operating systems, and plan to upgrade before support ends.

2. Recommended Specifications When Purchasing a New Laptop

The recommended laptop specifications are designed to ensure full usability for four years following enrollment. Please consult these guidelines when purchasing a new computer.

	Recommended specifications	Remarks
OS	Windows 11 Home/Pro 64-bit, or macOS Monterey or later	
CPU	Intel Core i5 or higher, or Apple M1 or higher	
Main Memory	8GB or higher	※For Architecture and Civil Engineering,16 GB or higher is preferred
Internal Storage	SSD 200GB or higher	
Display	12 inches or larger	Full HD (1080p) or higher is preferred
Network	Wi-Fi 5 (802.11ac) or higher	
Built-in Devices	Camera, microphone, speakers	
External Interfaces*	At least one USB 2.0 port or higher	USB 3.0 or higher is desirable
Battery Run Time	10 hours or longer	
Weight	Good portability	Less than 1.5 kg is desirable
Warranty	A manufacturer's warranty equivalent to 2 years or more	Personal property insurance is desirable

* Participants must provide their own conversion adapters for external connections, such as headsets and external displays (HDMI, etc.).

8 Additional Specifications from Each Department and Institute

Common to All Departments	If a student cannot use their own laptop for departmental experiments, they will be asked to use the equipment provided by the department. However, this equipment may not be taken off campus.
Mechanical Engineering	No specific details to add.
Electrical and Electronic Information Engineering	If you already have a laptop that meets the basic specifications and supports a standard C programming environment (like those used in high school or technical college), there's no need to buy a new one. However, if you encounter issues with online conferencing tools after enrollment, we recommend purchasing a new laptop, with Windows 11 being the preferred option.
Computer Science and Engineering	For Mac OS users, the system should be upgraded to an OS version newer than Monterey. If the laptop only has a USB Type-C port, a Type-A conversion adapter will be required.
Applied Chemistry and Life Science	No specific details to add.
Architecture and Civil Engineering	For macOS users, it's essential to be able to set up an environment capable of booting Windows OS. Instructors may require students to bring necessary peripherals like a mouse or adapter for the first session of each exercise.
Institute of Liberal Arts and Sciences	No specific details to add.