Dept. of Computer Science　Curriculum Structure

Our department engages in education and research of the fields of computer systems, centered around fundamental theory of computation, programming languages, visual information, computer architecture, and bioinformatics. Our main interest is establishment of fundamentals of information technology in the next generation from the computer science perspective.

Keywords　Logic, Algorithms, Programming Languages, Operating Systems, Computer Architecture, Parallel and Distributed Computing, Security, Graphics, Numerical Analysis, Natural Language Processing, Knowledge Discovery, User Interfaces, Genome Informatics, Scientific Computing.

Master's Program

Degree Conferral Policy

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Core Courses

Computer Science Seminar(Master's Program) I/II（1 Each）
Research Project on Computer Science (Master's Program)I/II（6 Each）
Practical English Presentation Skill I or II（1）　＜Total Credits 15＞

Doctoral Program

Degree Conferral Policy

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Computer Science Seminar (Doctoral Program) I/II/III（2 Each）
Research Project on Computer Science (Doctoral Program) I/II/III
（4 Each）　＜Total Credits 18＞

Ethics-Related Courses（1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.）

Elective Courses

【System Architecture and Foundational Software】
Parallel and Distributed Computing Systems/Distributed System Software/Advanced Custom Computing/Practical System Software/Modern Computer Architectures and System Software/Strategic Software/Advanced Computer Architecture/Advanced Operating Systems

【Foundations of Software, Software Engineering, Language Processing, Database】
Advanced Natural Language Processing/Programming Language Systems/Advanced Data Analysis/Applied Natural Language Processing/Mathematical Semantics of Computer Systems/Advanced Statistical Modeling/Trustworthiness Assurance for Data-Driven AI Software Systems/Special Lecture on Computer Science III・V・VI・VII

【Vision, Computer Graphics and User Interface】
Computer Graphics/Three-Dimensional Image Processing/Multimedia Interface/Data Visualization

【Algorithms and Mathematical Models】
Parallel Numerical Computations/Interdisciplinary Lecture in Scientific Computing/Data Compression in Computational Science and Quantum Computing/Computational Science for Many-Body Problems/Introduction to Quantum Theory --- A lecture for beginners/Parallel and Distributed Computing Systems/Algorithmics/Algorithms for Sequence Analysis/Advanced Algorithms/Algorithmic Aspects of Communication/Introduction to Near-Term Quantum Computation/Approximation and Online Algorithms with Applications/Algorithms for Information Security and Privacy/Network Optimizations/Information Compression in Computational Science/Graph Algorithms and Graph Structures/Special Lecture on Computational Science Ⅰ・Ⅱ・Ⅲ・Ⅳ・Ⅴ・Ⅵ/Practice on Computational Science Ⅰ・Ⅱ

【Robotics, Control, and Intelligent Systems】
Advanced Computer Vision/Remote Sensing Image Analysis

【Brain, Bionics, and Bioinformatics】
DNA Information Analysis/Information Analysis for Functional Genomics

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship（Internship I/Internship II）

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Dept. of Computer Science　Degree Conferral Policy and Group of Courses

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.（Adaptability, Perspective, Leadership）	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.（Sense of Ethics）	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.（Fundamental Skills, International Skills, Communication Skills, Research Skills）
Seminar I・II	◎		○
Research Project I・II		○	◎
Practical English Presentation Skill			○
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.（Adaptability, Perspective, Leadership）	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.（Sense of Ethics）	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.（Insight, International Skills, Communication Skills, Research Skills）
Seminar I・II・III	◎		○
Research Project I・II・III		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Dept. of Mathematical Informatics　Curriculum Structure

Our basic objective is the formulation and analysis of adequate mathematical models for the description and solution of practical engineering and related problems based on the understanding of their underlying informational structure, with the ultimate aim of contributing to the development of human society.

Keywords Mathematical Informatics, Mathematical Engineering, Mathematical Modeling, Numerical Analysis, Simulation, Data Structures, Algorithms, Optimization, Discrete Structures, Cryptology, Information Security, Information Theory, Data Compression, Statistical Science, Information Geometry, Learning Theory, Machine Learning, Data Mining, Data Assimilation, Operations Research, Data Science, Mathematical Finance, Mathematics of Complex Systems, Mathematics of Bio-information, Mathematics of Social Information, Computational Linguistics, Computational Neuroscience, Mathematical Brain Science.

Master's Program

Degree Conferral Policy

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Core Courses

Colloquium on Mathematical Informatics I/II (2 Each)
Research Project on Mathematical Informatics I/II (6 Each)
＜Total Credits 16＞

Elective Courses

【Algorithms and Mathematical Models】
Theory of Numerical Computation/Mathematical Structures in Informatics/Special Lectures in Mathematical Informatics I/Lectures on Computational Linguistics/Technical and Scientific Computing I/Technical and Scientific Computing II/Special Lectures in Mathematical Informatics Ⅳ/Stochastic Methods in Mathematical Informatics/Analytical Methods in Mathematical Informatics/Topics on Nonlinear Phenomena/Discrete Methods in Mathematical Informatics/Applied Mathematical Programming/Advanced Topics in Economic Engineering/Advanced Topics on Complex Systems/Advanced Core in Linear Algebra/Advanced Core in Analysis/Advanced Core in Probability/Advanced Core in Algorithm Design/Information-Theoretic Learning Theory/Mathematical Optimization/Seminar in Mathematical Informatics

【Foundations of Software, Software Engineering, Language Processing, Database】
Modern Information Theory/Language and Information Science

【Computer Network, Information Security】
Contemporary Cryptography

【Brain, Bionics, and Bioinformatics】
Special Topics in Brain Science I/Special Topics in Brain Science II/Introduction to Neurointelligence

Doctoral Program

Degree Conferral Policy

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Advanced Colloquium on Mathematical Informatics I/II/III (1 Each)
Advanced Research Project on Mathematical Informatics I/II/III (4 Each)
＜Total Credits 15＞

Ethics-Related Courses (1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.)

Elective Courses

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship (Internship I/Internship II)

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method. (Adaptability, Perspective, Leadership)	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology. (Sense of Ethics)	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future. (Fundamental Skills, International Skills, Communication Skills, Research Skills)
Seminar I・II	◎		○
Research Project I・II		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology. (Adaptability, Perspective, Leadership)	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility. (Sense of Ethics)	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future. (Insight, International Skills, Communication Skills, Research Skills)
Seminar I・II・III	◎		○
Research Project I・II・III		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Dept. of Information Physics and Computing　Curriculum Structure

The objectives of this department are to understand physical phenomena from the viewpoint of recognition and control system science, to make full use of informatics and physics, to create new principles, methodologies, mechanisms and systems, and to conduct research and provide education both useful in wide areas of technology.

Keywords Information Physics, Cyber-Physical Systems, Computing, Control Theory, Signal Processing, System Architecture, Physio- and Bio-cybernetics, Non-invasive neuroimaging, Brain Machine Interface, Intelligent Sensors, Instrumentation and Sensory Systems, Integrated Intelligent Systems, Image and Speech Recognition and Synthesis, Musical Acoustic Processing, Adaptive Recognition and Control Systems, Virtual Reality, Tele-Robotics, Soft Robotics, Metaverse, Inverse Problems, Photonic Computing, Computational Imaging, Cyber Security, System Software, Mobile Communication System.

Degree Conferral Policy

Master's Program

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Doctoral Program

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Information Physics and Computing Seminar I/II（2 Each）
Research Project on System Informatics I/II（6 Each）
＜Total Credits 16＞

Advanced Research Project on System Informatics I/II/III（4 Each）
＜Total Credits 12＞

Ethics-Related Courses（1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.）

Elective Courses

【System Architecture and Foundational Software】
System Architecture/Advanced System Software/Advanced IoT and Cyber-Physical Systems

【Computer Network, Information Security】
Applied Mathematics in Communications Networks/Practice Theory of Cyber Security

【Foundations of Software, Software Engineering, Language Processing, Database】
Media Processing/Applied Gaussian Process and Machine Learning

【Algorithms and Mathematical Models】
Toward Categorical Fundamentals of Information Systems/Applied Mathematics in Communications Networks/Advanced Theory of Inverse Problems

【Vision, Computer Graphics and User Interface】
Advanced Virtual Reality/Advanced Topics of Imaging Systems/Haptics

【Robotics, Control, and Intelligent Systems】
Advanced Signal Processing/Recognition Systems/Advanced Robotics and Virtual Reality Systems/Advanced Topics of Acoustic Systems/Physical Information/Dynamical Systems/Physical Information Devices/System Control Theory/Haptics/Advanced Systems and Control

【Brain, Bionics, and Bioinformatics】
Advanced Neural Engineering/Advanced Engineering in Medicine and Biology/Overview of recent tissue clearing and imaging techniques/Bio-Cybernetics/Advanced Biomedical MicroNano System/Brain System Analysis/Biophysics and Systems Engineering/Haptics

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship（Internship I/Internship II）

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Dept. of Information Physics and Computing　Degree Conferral Policy and Group of Courses

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method. (Adaptability, Perspective, Leadership)	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology. (Sense of Ethics)	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future. (Fundamental Skills, International Skills, Communication Skills, Research Skills)
Seminar I・II	◎		○
Research Project I・II		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology. (Adaptability, Perspective, Leadership)	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility. (Sense of Ethics)	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future. (Insight, International Skills, Communication Skills, Research Skills)
Research Project I・II・III	○	○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Dept. of Information and Communication Engineering　Curriculum Structure 1/2

The department offers graduate-course (master and doctorate courses) education and conducts advanced comprehensive research centered around the fields of computers/information processing (hardware and software), information networks, communication systems, signal processing, media technologies and information electronics. Our activities in education and research are partly operated in cooperation with Department of Electrical Engineering and Information Systems of the Graduate School of Engineering. Our mission is the creation of new technologies in the above fields, in particular, innovative technologies for both society and industry.

Keywords **Computer Architecture, High Performance Computing, Parallel Processing, Database, Big Data, Cloud Computing, Information Networks, Mobile Computing, IoT, Natural Language Processing, Computer Vision, Image Processing, Artificial Intelligence, Machine Learning, Multimedia, Human Interface, Human Computer Interaction, Virtual Reality, Game AI, Cyber Security, Personal Information Protection Technology, Intelligent Transportation Systems, Spatial Information Processing, Evolutionary Computing, Information-Physics.**

Master's Program

Degree Conferral Policy

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Core Courses

Information and Communication Engineering Master Course Seminar I/II (2 Each)
Research Project on Information and Communication Engineering I/II (5 Each) ＜Total Credits 14＞

Elective Courses

【System Architecture and Foundational Software】
Computer System/Parallel and Distributed Programming/Advanced Computer Architecture/Data Platform Engineering

【Computer Network, Information Security】
Internet Architecture/Special Issues on Information Engineering I/Network Architecture for Digital Communication/Computer and Communication Engineering/Web Engineering/Advanced Information Security/Information Security Infrastructure/Natural Language Processing/IoT System Engineering/Wireless Communication Engineering/Case Studies on Information Security/Cyber Resilience

【Robotics, Control, and Intelligent Systems】
Dynamical Systems for Engineering/Special Issues on Artificial Intelligence

Doctoral Program

Degree Conferral Policy

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Advanced Research Project on Information and Communication Engineering I/II/III (4 Credits Each)
＜Total Credits 12＞

Elective Courses

【Foundations of Software, Software Engineering, Language Processing, Database】
Simulation/Computational Linguistics/Social intelligence technology/Rule Description Technique

【Vision, Computer Graphics and User Interface】
Pattern Recognition/Visual Media/Digital Image Processing/Information Visualization/Computer System/Image/Video Coding/Cognitive Multi-Media Processing/Computational Fabrication/Intelligent Visual Interaction/Media Computing in Practice

Ethics-Related Courses (1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.)

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship (Internship I/Internship II)

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Dept. of Information and Communication Engineering Degree Conferral Policy and Group of Courses

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method. (Adaptability, Perspective, Leadership)	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology. (Sense of Ethics)	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future. (Fundamental Skills, International Skills, Communication Skills, Research Skills)
Seminar I・II	◎		○
Research Project I・II		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology. (Adaptability, Perspective, Leadership)	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility. (Sense of Ethics)	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future. (Insight, International Skills, Communication Skills, Research Skills)
Research Project I・II・III	○	○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Dept. of Mechano-Informatics　Curriculum Structure

The department commits education and research in the field of real world informatics dealing with shapes, structure, patterns, mobility and functionality of physical systems, aiming at growth of leading human resources and development of cutting-edge knowledge for creative design of intelligent mechano-informatic systems.

Keywords Mechatronics, Robotics, Micro-Nano Systems, Virtual Reality, Human Interfaces, Agent Systems, Artificial Intelligence, Cognitive Informatics, Real World Informatics, Brain Informatics Machines, Bioinformatic Systems, Welfare Systems, Computer Aided Surgery.

Master's Program

Degree Conferral Policy

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Core Courses

Directed Reading for Master Course in Mechano-Informatics I/II (2 Each)
Master's Thesis Research and Preparation in Mechano-Informatics I/II (6 Each) ＜Total Credits 16＞

Doctoral Program

Degree Conferral Policy

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Ph.D. Dissertation Research and Preparation in Mechano-Informatics I/II/III (4 Each)
＜Total Credits 12＞

Ethics-Related Courses (1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.)

Elective Courses

【Robotics, Control, and Intelligent Systems】
Intelligent Informatics/Intelligent Software System/Neuroethology/Frontier Artificial Intelligence I/Frontier Artificial Intelligence II/Mechanisms of Intelligence/Intelligent Control Theory/Architecture of Intelligent Machinery/Robotics/Special Topics in Mechano-Informatics/Special Topics in Mechano-Informatics II/Mechano-Informatics Laboratory/Exercises in Mechano-Informatics

【Vision, Computer Graphics and User Interface】
Mixed Reality/Human Machine Informatics/Human Interface

【Foundations of Software, Software Engineering, Language Processing, Database】
Agent Systems

【Brain, Bionics, and Bioinformatics】
Life-Form Systems/Brain Information Processing Systems/Biomedical Information Theory/Neuroethology/Biohybrid Mechanical Systems

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship (Internship I/Internship II)

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Dept. of Mechano-Informatics Degree Conferral Policy and Group of Courses

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method. (Adaptability, Perspective, Leadership)	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology. (Sense of Ethics)	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future. (Fundamental Skills, International Skills, Communication Skills, Research Skills)
Seminar I・II	◎		○
Master's Thesis Research and Preparation I・II		○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology. (Adaptability, Perspective, Leadership)	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility. (Sense of Ethics)	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future. (Insight, International Skills, Communication Skills, Research Skills)
Ph.D. Dissertation Research and Preparation I・II・III	○	○	◎
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Dept. of Creative Informatics　Curriculum Structure

The department aims to educate leading researchers and engineers with high creativity for realizing new information technologies and systems based on novel ideas.

Keywords Software Engineering, Software Verification, Programming Language, Operating System, Virtual Machine, Real-time Distributed System, Human Media, Agent Technology, Intelligent Informatics, Natural Language Processing, Cognitive Action System, Real-world Robotics, Super High-Speed Network, Super High-Speed Computation, Parallel Distributed Processing, Computational Geometry, Computer Graphics, Human-Computer Interaction, Leading IT Specialist, Strategic System Creation, Strategic Network Software, Ubiquitous Network.

Degree Conferral Policy

Master's Program

- Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method.
- Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology.
- Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future.

Doctoral Program

- Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology.
- Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility.
- Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future.

Core Courses

Creative Informatics Master Seminar （2）
Creative Informatics Master Practice （2）
Creative Informatics Master Project Research （10）
Practical English I or II （1）　＜Total Credits 15＞

Creative Informatics Doctor Seminar （2）
Creative Informatics Doctor Project Research （12）
Special Practical English I or II （1）　＜Total Credits 15＞

Ethics-Related Courses（1. Ethic-related courses offered by the Faculty of Engineering or the Faculty of Science. 2. Ethic-related courses offered by the Graduate School of IST. ("Information Science and Technology ethics" or "Research ethics" offered by the Department of Computer Science). Students who have already obtained credits of ethic-related course while enrolled in undergraduate program or Master's program of the University of Tokyo are considered to have met this requirement.）

Elective Courses

【System Architecture and Foundational Software】
Strategic Software/Dependable Information System/Strategic Network Software/Web programming languages/Cloud System Software/Advanced Computer Organization/System Architecture/Parallel and Distributed Programming/Advanced Operating Systems

【Computer Network, Information Security】
Internet Architecture

【Foundations of Software, Software Engineering, Language Processing, Database】
Anomaly Detection with Data Mining/Programming Language Systems

【Algorithms and Mathematical Models】
Data Science/Mathematical Modeling/Advanced Topics in Numerical Algorithm/ Information-theoretic Machine Learning/Practical aspects in algorithm and programming/Mathematical Optimization/Discrete Methods in Mathematical Informatics/Transportation Informatics

【Vision, Computer Graphics and User Interface】
Applied Computer Graphics/Real World System/Ubiquitous Network Environment/Pattern Classification/Realistic Image Synthesis/Physically Based Animation/Human-Computer Interaction/Physics-based Animation/Digital Fabrication

【Robotics, Control, and Intelligent Systems】
Recognition-Behavior Systems/Music and Speech Signal Processing/Control System Design/Intelligent Informatics/Creative Informatics Special Lecture I/Creative Informatics Special Lecture II/Multimodal Intelligent System Design

Common Courses/Courses offered by the other departments etc.
*Refer to the Appendix of the University of Tokyo Rules for the Graduate School of Information Science and Technology in the "Manual of the Graduate School (Daigakuin Binran)" and the "IST Course List".

Internship（Internship I/Internship II）

*For details on the completion requirements, please refer to of the University of Tokyo Rules for the Graduate School of IST in the "Manual of the Graduate School (Daigakuin Binran)" and "Guidelines for Courses, Student Status And Other Procedures".

Dept. of Creative Informatics　Degree Conferral Policy and Group of Courses 2/2

Master's Program

Degree Conferral Policy / Group of Courses	Having acquired systematic, technical knowledge and a broad perspective on information science and technology and being able to lead research and development of information science and technology by using a scientific method. (Adaptability, Perspective, Leadership)	Being capable of making a significant contribution to the development of society with high ethical standards and responsibility, based on the needs of society and knowledge of information science and technology. (Sense of Ethics)	Having fundamental skills in information science and technology, having sufficient international skills to actively participate in global activities, and having the ability to solve unexplored problems to pave a way for the future. (Fundamental Skills, International Skills, Communication Skills, Research Skills)
Seminar	◎		○
Practice		○	◎
Master Project Research		○	◎
Practical English			○
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○

Doctoral Program

Degree Conferral Policy / Group of Courses	Having acquired systematic and highly technical knowledge on information science and technology and appropriate logical judgment skills and being able to lead research and development of information science and technology by using a scientific method and to make academic contributions to the field of information science and technology. (Adaptability, Perspective, Leadership)	Having deep knowledge of information science and technology and being able to quickly perceive the needs of society and make significant contributions to the development of society with high ethical standards and responsibility. (Sense of Ethics)	Having deep insight on information science and technology, having sufficient international skills to lead global activities, and being capable of pioneering uncharted fields to pave a way for the future. (Insight, International Skills, Communication Skills, Research Skills)
Seminar	◎		○
Doctor Project Research		○	◎
Special Practical English			○
IST Ethics		◎	
Elective Courses offered by the department	○		○
Common Courses/Courses offered by the other departments	○		
Internship		○	○