

Academic Year 2018 Waseda University Graduate School of Sport Sciences Contents of Research Themes and List of Subject Codes

The following is information as of April 18, 2018.

<Points to note>

① **Please contact the supervisor of the tutorial course you wish to take prior to submitting your application and consult sufficiently with the supervisor regarding the research contents you are considering in order to avoid mismatch. Make sure to contact the supervisor of the course before submitting application.**

(1) Please send e-mail to the following address to contact the supervisor of the course you wish to take.

Please make sure to clearly state the following items in your e-mail.

1) The name of the faculty member you wish to seek supervision from ※

※If you wish to pursue your doctoral degree in English, be sure to check the English version of “Contents Research Themes and List of Subject Codes” before you write the faculty member’s name.

2) The program you wish to enroll in (Please write down “Doctoral Program”)

3) The type of entrance examination you wish to take (Please write down “International Students” ※)

※If you wish to pursue your doctoral degree in English, please write down “wish to pursue doctoral degree in English”

4) Your full name and full name in English

(specify your student number if you are a registered student of Waseda University)

5) Your contact information (Cell phone number, e-mail address, etc.)

6) Matters you wish to discuss with your prospective supervisor (Please describe in detail any questions or matters you wish to consult)

Attention to: Entrance Examination In-charge, Graduate School of Sport Sciences, Entrance Examination Section, Tokorozawa Administrative Center, Waseda University

<<E-mail address>>

***If you wish to obtain a Doctor’s degree in English, please send your e-mail to the following address.**

supoken-eng@list.waseda.jp

(2) In some cases such as overseas business trip, we may not be able to contact the supervisor right away or the reply may be delayed. Please start consulting and confirming with the supervisor early on.

② Enter the research guidance code in the application form without mistake by referring to the following pages.

<Reference: Waseda University Web Syllabus System (search page)>

<https://www.wsl.waseda.jp/syllabus/JAA101.php?pLng=en>

| Research Area | Subject code [doctoral program] | Name of tutorial | Qualification | Name of supervisor |
|-------------------------------|---------------------------------|---|---------------------|--------------------|
| Sport Humanities and Pedagogy | — | Intellectual History of Japanese Martial Arts | Professor | Fumiaki Shishida |
| | M10 | Sport Pedagogy, Sport Ethics | Professor | Hidenori Tomozoe |
| | M15 | Sport and the Media | Professor | Lee A. Thompson |
| | M25 | Culture of Sport | Professor | Kohei Kawashima |
| Sport Business | N10 | Sport Business | Professor | Munehiko Harada |
| | N30 | Sport Organization | Professor | Seiichi Sakuno |
| | N35 | Business Administration of Sport | Professor | Yasuaki Muto |
| | N26 | Sport Business Marketing | Professor | Hiroataka Matsuoka |
| Sport Medicine | P00 | Exercise Immunology | Professor | Takao Akama |
| | P20 | Sports and Health Management | Professor | Shizuo Sakamoto |
| | P32 | Health and Behavioral Sciences | Professor | Koichiro Oka |
| | P34 | Sports and Exercise Medicine | Professor | Koji Kaneoka |
| | P36 | Preventive Medicine | Professor | Katsuhiko Suzuki |
| | P38 | Athletic Training | Professor | Norikazu Hirose |
| | P42 | Skeletal Muscle Physiology | Professor | Takayuki Akimoto |
| | P44 | Exercise Metabolism | Associate Professor | Masashi Miyashita |
| P48 | Sports epidemiology | Professor | Susumu S. Sawada | |
| Kinesiology | Q00 | Sports Neuroscience | Professor | Kazuyuki Kanosue |
| | Q05 | Biodynamics | Professor | Yasuo Kawakami |
| | Q30 | Sport Psychology | Professor | Hiroaki Masaki |
| | Q35 | Sport Information Processing System | Professor | Masaaki Honda |
| | Q42 | Biomechanics | Professor | Toshimasa Yanai |
| Sport Coaching | R30 | Coaching of Budo: Japanese Marshall Arts | Professor | Misaki Iteya |

Academic Year 2018 Waseda University

Graduate School of Sport Sciences Contents of Research Themes

Doctor's program

1. Sport Humanities and Pedagogy Research Area

Intellectual History of Japanese Martial Arts (Master's Program, Doctoral Program) - **Prof. Shishida Fumiaki**

Field of specialization; major: history of thought; martial arts theory

Degree: doctor (human sciences), Waseda University

Website: <http://www.ju-jutsu.jp/>

Today, amid continuing international cultural exchanges, combat sports and martial arts have spread throughout the world in the form of competitive sports, traditional martial arts, entertainment, and so on, and their nature is quite diversified. Further, there is an ongoing debate regarding the acculturation of martial arts in the context of traditional value with focus on their practicality. In this course, we perform a fundamental, historical and practical study about traditional value of Japanese jujutsu (including judo, kendo, aikido, etc.) and its development, a comparative study with jujutsu and other martial arts, and guide the students to write papers that can be published in Japanese and international academic journals.

Keywords: combative sports, martial arts, jujutsu, judo, kendo, aikido

Sport Pedagogy, Sport Ethics (Master's Program, Doctoral Program) - **Prof. Hidenori Tomozoe**

Field of specialization; major: sports science, sports ethics; sports pedagogy

Degree: Doctor (human sciences), Waseda University

Website: <http://www.f.waseda.jp/tomozoe/index.html>

Research guidance contents: The student could study and research the problems of modern age sport such as diverse ethical aporia including the doctrine of victory and competition, self-doping, excessive commercialism, environmental destruction caused by sports events and so on. They could research such issues in terms of sports philosophy and ethics, sport pedagogy. This course targets such ethical issues in the present age sports to identify the ideal of sports culture in the contemporary period in terms of applied ethics and philosophy. Simultaneously, we research on the feasibility of sport education for human, especially school children, based on character education theory. The students also train social learning in sports education and pedagogical mechanism of character-building.

Keywords: sports morality, sports ethics, character building, character education, character formation, social learning theory

Sport and the Media (Master's Program, Doctoral Program) - **Prof. Lee A. Thompson**

Sociology, sociology of sport

Degree: Ph.D. (sociology), Osaka University

Website: <http://www.f.waseda.jp/thompson/index.htm>

Research guidance contents: "Media" is the plural of "medium," which means anything that serves as a means of communication. In the plural, "media" often refers to the mass media, such as television, radio, and newspapers. Research into the mass media can be broadly divided into three main areas: production, contents, and audience. Research into sport and the media thus focuses on at least one of these areas. I myself am especially interested in the contents of sport media, but it is necessary to grasp the whole process in order to understand the relationship between mass media and sport. For this, we use a sociological approach.

Keywords: sociology of sport, media, content analysis

Culture of Sport (Doctoral Program) - **Prof. Kohei Kawashima**

Degree: Doctor of Philosophy, Brown University

Research guidance contents: The purposes of my research and teaching are to examine the meanings and roles of socio-economic differences and race/ethnicity/gender identities through the foundation and development of modern sports in the United States, and to investigate the process of American sports' spread to Meiji, Taisho, Showa, Heisei Japan based on the methodologies of history and anthropology.

Keywords: United States, class, race, ethnicity, gender, Japan, history, anthropology

2. Sport Business Research Area

Sport Business (Master's Program, Doctoral Program) - **Prof. Munehiko Harada**

Field of specialization: sport management, sport business

Degree: Ph.D., Pennsylvania State University

Website: <http://www.haradalabo.jp/index.html>

Research guidance contents: Sport management and sport business are new academic disciplines and the systemization of its knowledge and creation of textbooks based on these advanced in conjunction with the phenomenon of sport becoming a business starting in 1980s. In particular, development of “rights business” as seen in broadcasting rights fees and sponsorship boosted the media value of sport and significantly advanced the structure of the conventional sport business. This course guides students on research regarding “sport and city marketing” from the macro perspective of sport business, and “sport consumer behavior research” from the micro perspective. Specifically, the former is policy proposal-type research applying sports promotion model and economic effects of sporting events, and the latter covers research regarding fans’ team loyalty in professional sports and experience marketing in sport and fitness industry. Furthermore, the course will also focus on nurturing the student’s ability to present research at international conference so as to understand the international competitive environment faced by sports business.

Keywords: sport management, sport business, sport marketing

Sport Organization (Master's Program, Doctoral Program) –**Prof. Seiichi Sakuno**

Field of specialization; major: management for physical education and sport, sport organization

Degree: Ph.D., Kanazawa University

Website: <http://www.f.waseda.jp/sakuno/>

Research guidance contents: The relationship between people and sports is not limited to “to play” and “to watch” but is wide-ranging including “to support” and “to read.” In addition, these relationships often involve some sort of organizations. In this research guidance course, we deepen the understanding of organizations as a framework for grasping and explaining diverse physical education and sport and carry out research on organizational management methods based on this. Furthermore, we aim to acquire basic knowledge as well as research and analysis methods (quantitative and qualitative) for driving forward research based on each student’s interest. Research themes include leadership, motivation, organization, and human resource management in management of various sports organizations and we grasp them primarily from the perspective of micro- to meso-level organizational theory. In addition, the course also offers guidance on a wide range of themes including volunteer management and collaboration between school sports and community sports (see the above website for details).

Keywords: sport organization, community sports, sport club, human resource management, management for physical education

Business Administration of Sport Organizations (Master's Program, Doctoral Program) – **Prof. Yasuaki Muto**

Field of specialization; major: sports management; sports finance

Degree: Doctor (sport sciences), Waseda University

Website: <http://muto-web.jp/>

Research guidance contents: The world of sports business is a “treasure trove” of new research themes that are not (cannot be) handled in general business or management. The course covers business, management and sports business and sports management from the aspect of comparative analysis, and the students acquire expert knowledge. In addition, in this process the students who wish to go into business aim to develop ability to handle management in sports-related business. The students who wish to become researchers aim to develop new research fields and themes.

Keywords: management strategy for professional sports, management of non-profit organization, sports governance, sponsor marketing, corporate sports

Sport Business Marketing (Master's Program, Doctoral Program) – **Prof. Hirotaka Matsuoka**

Field of specialization; major: sport management, sport marketing, sport consumer behavior

Degree: Ph.D. (sport management), Ohio State University

Research guidance contents: Marketing is indispensable in business of sport organizations for both professional sports clubs and teams that sell “spectator sports” and clubs and associations that sell “participation sports.” Sport marketing can be divided into “marketing of sport” that offers sports by efficiently producing them, and “marketing through sport” in which businesses implementing promotional activities by leveraging sports, and in both these cases utmost priority is placed on understanding the sport consumers (those who play or watch sports). The course focuses on understanding sport consumers' psychology and behavior, which is necessary for effective marketing in sport business sites and the students acquire research methods required for their interpretation. Research themes may include motivation of sport spectators, fans' commitment to a particular sport team, perception of service quality and satisfaction among sport participants and spectators, impact of sports club promotion and that of sports sponsorship.

Keywords: sport business, sport marketing, sport consumer, sport sponsorship

3. Sport Medicine Research Area

Exercise Immunology (Master's Program, Doctoral Program) – **Prof. Takao Akama**

Field of specialization; major: sports immunology, sports medicine, anti-doping

Degree: M.D., Ph.D. in medical science, Tsukuba University

Website: <http://www.f.waseda.jp/takao-akama/top.html>

Research guidance contents: We study changes in immune functions caused by exercises and their applications. We consider the mechanism of the changes in immune functions caused by exercises and verify that moderate exercises boost immune functions. Specific research themes include (1) exercise prescription for boosting immune functions of senior citizens whose functions have deteriorated due to ageing, (2) measurement of changes in athletes' immune functions due to training and its application in their conditioning, and (3) investigation of mechanism of immune function deterioration following exercises and study measures to prevent the deterioration. Moreover, anti-doping, an important issue in athletes' conditioning is covered as a research theme.

Keywords: immunity, fitness for protection, ageing, conditioning, cell, protein, anti-doping

Sports and Health Management (Master's Program, Doctoral Program) – **Prof. Shizuo Sakamoto**

Special Field: sports medicine (internal); preventative medicine

Degree: Doctor (medicine), Marianna University School of Medicine

Website: <http://www.f.waseda.jp/s.sakamoto/>

Research guidance contents: The course is aimed at having the students understand, with the help of thesis that have been reported and latest research reports, that, while sports are effective on lifestyle-related diseases, they can cause acute medical disorders such as sudden death and heatstroke as well as chronic medical disorders including anemia and overtraining syndromes. At the same time, the students will master methods of test for judging the effects of sports and those for diagnosing medical abnormality under the instruction of the supervisor, who is a medical doctor. That is, we will have hands-on learning-like lectures so that the students would understand the importance of medical check using exercise tolerance test, echocardiography, Holter electrocardiography from multiple aspects.

Keywords: sports, sudden death, heatstroke, anemia, overtraining syndromes, exercise tolerance test, echocardiography, Holter electrocardiography

Health and Behavioral Science Research Guidance (Master's Program, Doctoral Program) – **Prof. Koichiro Oka**

Field of specialization; major: health and behavioral science; behavioral epidemiology

Degree: doctor (human sciences), Waseda University

Website: <http://www.f.waseda.jp/koka/index.html>

Research guidance contents: the course offers guidance for research on lifestyle improvement, especially, making a habit of physical activities and exercises and improvement of sedentary behaviours. Specifically, (1) development of lifestyle modification program based on behavioral theory (physical activities and sedentary behaviours), (2) research on promotion of health information utilizing health communication, (3) development of a program for long-term care prevention for the elderly (strength training, aqua exercise, prevention of dementia, etc.), (4) application of cognitive behavioral therapy for senior citizens' self-management of knee and back pains, (5) exercise program aimed at improving health-related QOL among cardiac rehabilitation patients, (6) research on environment improvement for supporting physical activities in children and youth, and (7) research regarding mental support for athletes based on cognitive behavioral therapy. The course supports the students so that they will learn the perspective and specific methods of behavioral science-based approach that is useful in practice of health promotion through health care, welfare, medical/nursing/rehabilitation, school education and sports instructions.

Keywords: behavior modification, sedentary behaviour, cancer prevention, dog walking, long-term care prevention, musculoskeletal disorders, exercise therapy, cognitive behavioral therapy, mental health, children and youth, physical activity support environment

Sports and Exercise Medicine (Master's Program, Doctoral Program) – **Prof. Koji Kaneoka**

Field of specialization; major: sports medicine; orthopedics, biomechanics

Degree: Ph.D. in medical science, Tsukuba University

Research guidance contents: The course clarifies pathogenesis of spine disorder among athletes such as back pain and intervertebral disc disorder as well as spine injuries using methods such as epidemiological research, biomechanical analysis, and electromyographic analysis. Using the outcome, we will come up with methods to prevent disorders and injuries that are based more on scientific facts, implement them in practice, and assess their effects in search of more effective preventative measures. Moreover, we will develop exercise therapy for a wider range of patients, not limited to athletes, with spine disorders represented by back pain using the knowledge gained in this process and practice them.

Keywords: back pain, cervical spine injury, traumatism mechanism, disability prevention, impact biomechanics, exercise therapy

Preventive Medicine (Doctoral Program) – **Prof. Katsuhiko Suzuki**

Field of specialization; major: Applied physiology, Internal medicine, Immunology

Degree: M.D., Ph.D (Medical sciences), Hirosaki University

Website: <http://www.f.waseda.jp/katsu.suzu/english>

Research guidance contents: We study methodology on analyses and assessments of physical stress and tissue damage due to exhaustive exercise and training together with their preventive countermeasures such as nutrition, supplementation, rehydration and alternative medicine. Specifically, host defense mechanisms such as leukocyte functions, stress hormone and cytokine dynamics, oxidative stress responses, and skeletal muscle and other organ damage/recovery are analyzed in relation with exercise and training. Also, pathological process and prevention of lifestyle-related disease and aging are studied by human and animal studies. Students are required for some experiences of biological and chemical experiments, statistical analyses and presentation skills so that they can acquire advanced methods and techniques of medical and life sciences-based approach for research activities.

Keywords: exercise, leukocyte, cytokine, inflammation, oxidative stress, aging, lifestyle-related disease

Athletic Training (Master's Program, Doctoral Program) – **Prof. Norikazu Hirose**

Field of specialization; major: athletic training, conditioning, athletic injury prevention, talent identification and development

Degree: Ph.D., University of Tokyo

The Evidence Based Research in Athletic Training course introduces the research process in athletic training with an emphasis on evidence-based practice. This course will focus on research associated with prevention and reconditioning of common athletic injuries. Additionally, the course will explore strength and conditioning research. Ongoing projects include treatment of skeletal muscle and myofascial injuries, role of neuromuscular control in lower extremity injuries, conditioning strategy in hot environment and development of effective fitness training for soccer players. The course will involve a multidisciplinary approach, incorporating scientific (research) and practical application based on clinical studies.

Keywords: athletic training, prevention of sports injuries, conditioning, football (soccer)

Skeletal Muscle Physiology (Master's Program, Doctoral Program) – **Prof. Takayuki Akimoto**

Degree: Ph.D. in medical science, Tsukuba University

Study on the mechanism of muscle plasticity by mechanical stress.

The main research topics of the current laboratory are (1) plastic mechanism of skeletal muscle tissue by mechanical stress, (2) The molecular mechanism by which skeletal muscle receives mechanical stress, and (3) the development of in vitro construction of skeletal muscle tissue.

For graduate students, I would like to train you to be a scientist to be able to set autonomous subject that you are willing to explore, conduct experiments, analyze data, write and publish papers, and obtain research funding.

Keywords: Molecular & Cellular Biology, Reverse

Genetics, Biotechnology, Transcriptional Regulation, Post-transcriptional

Regulation, Vision, Hard-work, Team-work

Exercise Metabolism (Master's Program, Doctoral Program) – **Associate Prof. Masashi Miyashita**

Field of specialization; major: Exercise Physiology, Human Metabolism, Exercise Nutrition, Applied Health Science

Degree: Ph.D., Loughborough University, United Kingdom

Research guidance contents:

My research interests are in the physiology and nutrition of physical activity (exercise/sports and daily activities) and public health with an interest in both the basic science of physical activity and the applied aspects that relate to health in physical activity. Much of my work has examined the effects of physical activity on risk factors for cardiovascular disease. A major focus of my research has concerned the effects of physical activity on fat (triacylglycerol) metabolism after meals in humans. More recently my activities have expanded to include work on physical activity and appetite regulation, physical activity and atherogenic lipids/inflammatory markers, nutrition and exercise performance, and recovery science in humans. I also have an established network with my domestic and international collaborators for conducting cutting-edge research on physical activity and health.

Keywords: postprandial metabolism, appetite regulation, exercise performance, public health

Sports epidemiology (Doctoral Program) – **Prof. Susumu S. Sawada**

Field of specialization: sports epidemiology, physical activity epidemiology, public health

Degree: Ph.D. in medicine, Juntendo University

Research guidance contents:

Sports epidemiology provides scientific evidence to society to solve the issues of preventive medicine, public health, and several sports fields.

· For master program, doctoral program [first half]

Our team will support you as follows, 1) setting appropriate research theme 2) finding relevant papers related to the theme 3) critical appraisal of related papers 4) making an appropriate study design to solve the research question 5) implementation of the study 6) appropriate analysis of the data 7) appropriate interpretation of the results 8) writing of master thesis.

Through these processes, we will support the master program students to become experts who contribute to society by utilizing scientific evidence. Also, we will support the building of the basic ability to proceed to the second half of the program for doctoral students.

· For doctoral program [second half]

Our team will support you as follows, 1) setting research theme, that's necessary to solve in society 2) making high quality study design to solve the research theme 3) implementation of the study using appropriate methods, also appropriate analysis and interpretation of the results 4) providing a research environment for cooperating with internationally renowned researchers to create high quality papers.

Through these processes, we will support the building of the ability to solve the problem in preventive medicine, public health, and several sports fields.

4. Kinesiology Research Area

Sports Neuroscience (Master's Program, Doctoral Program) – **Prof. Kazuyuki Kanosue**

Field of specialization; major: sports neuroscience, bio-medical instrumentation, physiology

Degree: Doctor (engineering), Osaka University; Doctor (medicine), Osaka University

Website: <http://www.f.waseda.jp/kanosue/>

Research guidance contents: Brain (central nervous system) plays the major role in performing smooth body movements not only while playing sports but also in daily life. The course studies brain mechanism involved in this motor control. In particular, we analyze “coordination of hands and feet,” “forming the motor imagery,” and “postural control” using fMRI and transcranial magnetic stimulation. Specifically, we analyze motor control in baseball pitching, running, tennis and skiing from the perspectives of how the individual variation of performance occurs and what is superior in those who have good ability in sports

Keywords: brain, motor control, coordinated movement, motor imagery, non-invasive brain analysis, measuring fast phenomena, track and field, skiing

Biodynamics (Master's Program, Doctoral Program) – **Prof. Yasuo Kawakami**

Field of specialization; major: exercise physiology; biomechanics

Degree: Ph.D., (pedagogy), University of Tokyo

Website: <http://www.f.waseda.jp/ykawa/index.htm>

Research guidance contents: 1) The course carries out in vivo morphological and functional features of human skeletal muscles as the source of various movements. In addition, we will carry out research on non-invasive visualization of contracting skeletal muscles and their quantification by using image analysis such as ultrasound and MRI, as well as biomedical analysis using dynamometer, electromyogram under voluntary and evoked contractions. Dynamic contractions of skeletal muscles are quantified to search for the factors limiting the performance of physical activities and sports. We will further discuss the changes in the muscle that occur due to training, physical inactivity, growth, ageing and fatigue. 2) Morphological characteristics and composition of the human body are evaluated using MRI and 3-dimensional photonic scanning methods, to investigate the limiting factors to fitness and exercise performance, and the impacts of growth and ageing, and effectiveness of training. At the moment, research under the following three themes is in progress: 1) skeletal muscle mechanics, 2) individual variance and adaptability of musculotendinous characteristics, and 3) limiting factors of sports performance. See the lab website for specific projects.

Keywords: muscle fibers, tendinous tissue, ultrasound, MRI, biological signal & image analysis, biometrics, sports performance

Sport Information Processing System (Master's Program, Doctoral Program) – **Prof. Masaaki Honda**
Field of specialization; major: sports information engineering, multimedia information processing, robotics

Website: www.f.waseda.jp/hon/index.html

Degree: Doctor (engineering), Waseda University

Research guidance contents: In recent years, the role of information processing in sports science is growing significant such as sports motion analysis using computers and computer simulation of sports motion as well as sports media information processing of images and voices in response to the new digital media era. The course offers guidance on research with focus on information processing in sports science centered on sports motion analysis, sports motion information processing model that link perceptual information and motion information, and sports media information processing.

Keywords: information processing, sports movement analysis, sports media, sensorimotor model

Sport Psychology (Master's Program, Doctoral Program) – **Prof. Hiroaki Masaki**

Field of specialization; major: sport psychology, exercise psychology, cognitive neuroscience, psychophysiology

Degree: Doctor (human sciences), Waseda University

Website: <http://www.waseda.jp/sem-masaki/>

Research guidance contents: The goal of this research guidance course is to clarify the mechanisms underlying skilled movements and brain health by applying psychophysiological methodology (e.g., the electroencephalogram, event-related potentials, functional MRI, and eye tracking measurements) to current research questions. In this course emotional experiences during sports (e.g., choking under pressure) and brain functions involved in the beneficial effect of exercise, motor learning, and performance monitoring will also be investigated. For example, when an on-going movement deviates from the aimed (desired) movement, our brain detects the error and corrects it. Such functions rely on performance monitoring. We can investigate processes like these by recording event-related potentials.

Keywords: electroencephalogram, event-related potentials (ERPs), fMRI, eye tracker, motor learning, performance monitoring

Biomechanics (Master's Program, Doctoral Program) – **Prof. Toshimasa Yanai**

Field of specialization; major: biomechanics; sports injuries, performance analysis

Degree: Ph.D., University of Iowa

Research guidance contents:

Biomechanics may be defined as the application of mechanics principles to living organisms to understand the relation between structure and function and the mechanical cause-effect relationships that determine the motions of living organisms. Biomechanics is an interdisciplinary field and research/studies are conducted in a diverse field, such as Biology, Botany, Engineering, Orthopedics, Sports and Physical Education. In the biomechanics laboratory in the Graduate school of Sport Science at Waseda, we focus on the biomechanical analysis of sports techniques; in particular, analyses of elite performers in selected sports activities – throwing, batting/hitting and swimming. The main objectives of our research are to understand the mechanisms that make the techniques better and to minimize the risk of athletic injuries that occur as a result of participating in sports. We believe that the combination of the two goals will help us, ultimately, find the optimum technique for every given sports technique.

Keywords: kinematics, kinetics, musculoskeletal injury, Newton mechanics, videography

5. Sport Coaching Research Area

Coaching of Budo: Japanese Marshall Arts – **Prof. Misaki Iteya**

Field of specialization; major: Under construction

Degree: Ph.D., Tsukuba University

Research guidance contents: Under construction

Keywords: Under construction
