# 2022

## Graduate School of Life Dentistry at Niigata

## Doctoral Course

# Syllabus

**The Nippon Dental University**

# Contents

# Foreword

This syllabus is to provide guidelines for students who will take required credits at the Graduate School of Life Dentistry at Niigata, The Nippon Dental University.

1. Graduate education consists of lectures such as the major subject, associate subjects, other subjects and research directions for making the dissertation.
2. The doctoral course normally takes four years to complete, but it must be completed it by the eighth year. A third year student, who has completed the following requirements (such as completion of 30 credits and excellent achievements on research) can complete to program before the fourth year.
3. Each student must select courses and credits under the guidance of the director of the major subject program. Students must earn 30 credits in total within the registered period.
4. After obtaining recognition of the director of the major subject program, students must inform the Director of Dentistry Research, Graduate School of Life Dentistry at Niigata of their selected lecture subjects.
5. Upon the discretion of the director of the major subject program, other graduate level lectures at a different university can be taken and any credits achieved may be approved for addition up to a maximum of 10 credits.
6. Under the guidance of the director of the major subject program, students can also obtain necessary directions for research work at the following places: The Graduate School of Life Dentistry at Tokyo, The graduate school of a different university and research institutes.
7. As completion requirements for the doctoral course, successful candidates should fulfill the guidelines and must pass an examination of the dissertation and final examination.
8. The dissertation cannot be submitted to the committee, if the student has not earned 30 credits in total in the appointed major subject.
9. In accordance with the final examination, the dissertation and its related field of major subjects will be tested by oral or written examination.
10. In accordance with the regulations of the Graduate School, The Nippon Dental University, a graduate degree (PhD) will be awarded by the Nippon Dental University School of Life Dentistry at the Niigata graduation ceremony to the successful candidates who have fulfilled the guidelines.

# Major Subject Programs / Director

| Courses | Fields | Major Subject Programs | Directors |
|---|---|---|---|
| Basic Science | Oral & Maxillofacial Morphology | Comparative Morphology of Oral Hard Tissue and Mucous Membranes | KAGEYAMA Ikuo |
| | | Histology | TSUJIMURA Maiko |
| | Oral & Maxillofacial Functions Science | Physiology of Mastication and Salivation | SATOH Yoshihide |
| | | Molecular Biology of Saliva and Salivary Glands | MORITA Takao |
| | Oral & Maxillofacial Infection and Environmental Health Science | Oral Infection and Immunity | KATSURAGI Hiroaki |
| | | Oral Environment and Community Dental Health | KOMATSUZAKI Akira |
| Applied Science | Oral Biomaterials and Occlusion Science | Developmental Science of Oral Biomaterials | OHKUMA Kazuo |
| | | Functional Occlusal Treatment | MIZUHASHI Fumi |
| | | | UEDA Kazuhiko |
| | Oral & Maxillofacial Imaging and Histopathological Diagnostics | Quantitative Diagnostic Imaging | OGURA Ichiro |
| | | Histopathology of Pathogenic Mechanisms | OKADA Yasuo |
| | Oral & Maxillofacial Bio-response and Anesthesiology | Pharmacodynamics of Hard Tissue and Salivary Glands | NAKAMURA Kenjirou |
| | | Anesthesiology and Resuscitation | OOHASHI Makoto |
| Clinical Science | Advanced Conservative Dentistry and Periodontology | Advanced Operative Dentistry・Endodontics | SHINKAI Koichi |
| | | Periodontology | SATO Soh |
| | Oral & Maxillofacial Growth and Development | Pediatric Oral Behavior Science | KUROKI Junko |
| | | Orthodontics and Dentofacial Orthopedics | KOBAYASHI Sakurako |
| | Oral & Maxillofacial Surgery and Systemic Medicine | Oral and Maxillofacial Surgery | TANAKA Akira |
| | | Clinical Examination | OHKOSHI Shogo |

# Major Subject Programs and Main Themes of the Study

| Major Subject Programs (Director) | Main Themes of the Study |
|---|---|
| Comparative Morphology of Oral Hard Tissue and Mucous Membranes (KAGEYAMA Ikuo) | 1. Dental anthropology<br>2. Morphogenesis of the head and neck<br>3. Clinical anatomy of the maxillofacial region |
| Histology (TSUJIMURA Maiko) | 1. Immunohistochemical study of the taste bud<br>2. Histological study of the tissue around dental implants<br>3. Histological study on alteration of the tissue after oral surgical procedures |
| Physiology of Mastication and Salivation (SATOH Yoshihide) | 1. Central control mechanisms of feeding and swallowing<br>2. Central transmission mechanisms of oral sensation<br>3. Relationship between occlusion and motor function in sports dentistry |
| Molecular Biology of Saliva and Salivary Glands （MORITA Takao) | 1. Molecular mechanism of salivary secretion<br>2. Molecular mechanism of intracellular signaling by receptor stimulation<br>3. Photoimmunotherapy and fluorescence imaging of oral and maxillofacial cancer |
| Oral Infection and Immunity (KATSURAGI Hiroaki) | 1. Analysis of host response against periodontal pathogens<br>2. Studies of aminopeptidase on oral bacteria<br>3. Identification of cariogenic and peroidontopathic bacteria by DNA analysis |
| Oral Environmental Community Dental Health (KOMATSUZAKI Akira) | 1. The evaluation of a community-based oral health care program for prevention effectiveness<br>2. A field study of oral health public services associated with health promotion<br>3. Development of a new masticatory function assessment system employing a laser beam for oral health |
| Developmental Science of Oral Biomaterials (OHKUMA Kazuo) | 1. Study on fabrication of dental restorations using CAD/CAM<br>2. Fatigue of dental polymer adhesive material<br>3. Development of the automation of the teeth preparation |
| Functional Occlusal Treatment (MIZUHASHI Fumi) | 1. Study on construction of occlusion on removable denture<br>2. Study on oral function of denture wearer<br>3. Analysis of salivary protein on oral dryness patient |
| Functional Occlusal Treatment (UEDA Kazuhiko) | 1. Methods of implant therapy and physical properties of implant materials<br>2. The suitability of fixed dental prosthesis<br>3. Physical properties of CAD/CAM materials |
| Quantitative Diagnostic Imaging (OGURA Ichiro) | 1. SPECT/CT for oral and maxillofacial diseases<br>2. Characteristic multimodal imaging of MRONJ<br>3. Diffusion-weighted MR imaging and US elastography of oral cancer |

# Major Subject Programs and Main Themes of the Study

| Major Subject Programs (Director) | Main Themes of the Study |
|---|---|
| Histopathology of Pathogenic Mechanisms (OKADA Yasuo) | 1. Comprehensive study on genesis, proliferation, invasion, metastasis, diagnosis and treatment of oral cancer<br>2. Study on tumorous property acquisition of the lining epithelium of odontogenic cyst<br>3. Study on histopathological malignancy grade, angiogenesis and metastasis of malignant tumor of salivary gland |
| Pharmacodynamics of Hard Tissue and Salivary Glands (NAKAMURA Kenjirou) | 1. Study on secretory mechanisms in the salivary gland<br>2. Study on substances suppressing cariogenicity<br>3. Mechanisms of adrenal catecholamine secretion |
| Anesthesiology and Resuscitation (OOHASHI Makoto) | 1. Study of localization on anesthetics<br>2. Study of qualitative comparison on sedation<br>3. Study of preemptive analgesia |
| Endodontics | 1. Study on healing of dental pulp and periapical tissue<br>2. Study of biomechanical and biochemical root canal preparation<br>3. Research on biological properties of cells related to pulpal and periapical diseases |
| Advanced Operative Dentistry (SHINKAI Koichi) | 1. Study on tooth adhesion of dental restorative materials<br>2. Study on prevention and control for dental root caries<br>3. Development of dental adhesive materials with a calcification promoting function |
| Periodontology (SATO Soh) | 1. Study on the periodontal tissue regeneration<br>2. Study of the periodontal-systemic connection<br>3. Study on esthetics in periodontal treatment |
| Pediatric Oral Behavior Science (KUROKI Junko) | 1. Study of oral diseases and the underlying pathomechanisms<br>2. Study of the factor of tooth development and eruption<br>3. Study of development in salivary gland and salivary protein |
| Orthodontics and Dentofacial Orthopedics (KOBAYASHI Sakurako) | 1. Biomechanical analysis of orthodontic treatment<br>2. Early treatment for malocclusion<br>3. Characteristics of orthodontic adhesive |
| Oral and Maxillofacial Surgery (TANAKA Akira) | 1. Experimental study on anti-cancer drug sensitivity test for oral cancer chemotherapy<br>2. Experimental study on regeneration of salivary gland, nerve and tooth<br>3. Clinical and experimental study on Medication-Related Osteonecrosis of the jaw |
| Clinical Examination (OHKOSHI Shogo) | 1. Research on the interrelation between oral diseases and systemic diseases from the viewpoint of the clinical laboratory<br>2. Sleep apnea syndrome and fatty liver<br>3. Differentiation of dental pulp stem cell |

# Oral & Maxillofacial Morphology

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|---|---|
| Major Subject | Comparative Morphology of Oral Hard Tissue and Mucous Membranes |
| Director・Position | KAGEYAMA Ikuo・Professor |
| Teaching Members・Position | YOSHIMURA Ken・Professor |
| Location of Laboratory | 2306 Professor's Office (4th Building・3rd floor), Dissection room (Niigata Hospital・B1 floor) |
| Extension Phone Number・E-mail Address | 2577・kageyama@ngt.ndu.ac.jp |
| Teaching Methods | Lectures |
| School Hours | Monday・14:30~16:30 |
| Classroom | Conference room (8th Building・2nd Floor) |
| Practice Room | Dissection room (Niigata Hospital・B1 floor) |
| Objective for Lectures | Students will read through papers from Nature and Science and discuss scientific articles to obtaining graduate level scientific capabilities.<br>Students will learn comparative morphology regarding the oral mucosa and related methodology; specimen preparation for scanning electron microscopy (SEM) and light microscopy. |
| Contents and Plans for Lectures | 1) Students should carefully read original English texts regarding morphology.<br>2) Students will critically review papers from Nature and Science and discuss the methods, results, and discussion sections.<br>3) Students should submit English reports (10 pages) regarding their major.<br>4) Specimen preparation method for SEM observation.<br>5) Observation technique using SEM and image processing.<br>6) Specimen preparation method in light microscopy involving staining method. |
| Evaluation Method for Grades | Students' reports will be evaluated by the course Director. |
| Textbooks・Teaching Materials・References | 1) Papers from Nature and Science<br>2) Introduction to Academic Writing Level 3, Alice Oshima, Ann Hogue.<br>3) Technique of light microscopy staining; Special Issue of Medical Technology, MDF publishing, 1993.<br>4) Tanaka K Ed, Scanning Electron Microscopy; Preparation of Biological Specimen, Asakura Publishing, 1980.<br>5) Hayat MA, Scanning electron microscopy for Medical and Biological research, Maruzen, Publishing, 1979. |
| Instructions for Course・Qualifications | Those who wish to participate in this course should have appropriate intellectual ability and determination. |
| Comments | No comments in particular. |

# Oral & Maxillofacial Morphology

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|---|---|
| Major Subject | Histology |
| Director・Position | TSUJIMURA Maiko・Professor |
| Teaching Members・Position | YOKOSUKA Hiroyuki・Associate Professor |
| Location of Laboratory | 4th Building・3rd floor |
| Extension Phone Number・E-mail Address | 2576・h-maiko@ngt.ndu.ac.jp |
| Teaching Methods | Lecture and practice |
| School Hours | Wednesday・9:00~12:00 |
| Classroom | 4th Building・3rd floor |
| Practice Room | 4th Building・2nd floor, 3rd floor<br>Advanced Research Center (6th Building)・1st floor, 2nd floor |
| Objective for Lectures | The goals of this course are to learn histological techniques using light and electron microscopy and be able to apply them to the research. |
| Contents and Plans for Lectures | Histological techniques<br>Light microscopy:<br>Conventional histological staining<br>Immunohistochemistry<br>Electron microscopy:<br>Scanning electron microscopy<br>Transmission electron microscopy |
| Evaluation Method for Grades | Grading will be decided based on comprehension of lecture and practice, attendance, and attitude. |
| Textbooks・Teaching Materials・References | 1) Sano Y : Histological Techniques－Theoretical and Applied, Nanzando Co Ltd, Tokyo, 1985.<br>2) Mizuhira V : Manual of electron microscope in the field of medicine and biology, Kodansha Ltd, Tokyo, 1986. |
| Instructions for Course・Qualifications | No comments in particular. |
| Comments | No comments in particular. |

# Oral & Maxillofacial Functions Science

| | |
|---|---|
| Major Subject | Physiology of Mastication and Salivation |
| Director・Position | SATOH Yoshihide・Professor |
| Teaching Members・Position | TAKAHASHI Mutsumi・Associate Professor |
| Location of Laboratory | 5th Building・3rd floor |
| Extension Phone Number・E-mail Address | 2595・ysatoh@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, seminars and practice |
| School Hours | Tuesday・13:30~15:30 |
| Classroom | 5th Building・3rd floor |
| Practice Room | Laboratory of the Department of physiology (5th Building・3rd floor) |
| Objective for Lectures | Postgraduate students have opportunities to study advanced knowledge and research techniques of feeding, swallowing, oral sensation and sports dentistry. |
| Contents and Plans for Lectures | Lectures and seminars provide advanced knowledge as well as neurophysiological research techniques for postgraduate students. |
| Evaluation Method for Grades | Comprehension of lectures and seminars, creativity of experimental design and a positive attitude. |
| Textbooks・Teaching Materials・References | Brain and Nerve,67(2), IGAKU-SHOIN Ltd.,2015 |
| Instructions for Course・Qualifications | Passion and imagination for research are required. |
| Comments | No comments in particular. |

# Oral & Maxillofacial Functions Science

| | |
|---|---|
| Major Subject | Molecular Biology of Saliva and Salivary Gland |
| Director・Position | MORITA Takao・Professor |
| Teaching Members・Position | TAKEZAWA Haruka・Senior Assistant Professor |
| Location of Laboratory | 5th Building・2nd and 3rd floors |
| Extension Pone Number・E-mail Address | 2482 or 2592・moritat@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, reading books and papers, discussion and experimental practice |
| School Hours | Monday・9:00~12:00 |
| Classroom | 5th Building・3rd floor, Laboratory of the Department of Biochemistry |
| Practice Room | 5th Building・2nd and 3rd floors |
| Objective for Lectures | The aim of this class is to produce researchers who have knowledge of molecular biology and use it to their own researches. Students study the general properties and the roles of protein and nucleic acid. Further, they will acquire the gene technology such as PCR. They should read many papers and discuss them. |
| Contents and Plans for Lectures | Lectures, reading and discussion of the textbook.<br>Reading many papers and writing a research paper.<br>Practices: electrophoresis, blotting and gene transformation, PCR will be performed. |
| Evaluation Method for Grades | Students will be evaluated on their ability to understand the contents of textbook and documentations, to practice, to have research presentation and to write a research paper. |
| Textbooks Teaching Materials・References | 1） Alberts B et al.: Nakamura K, Matsubara K (Supervised translation): Molecular Biology of the Cell, Newton Press, New York. |
| Instructions for Course・Qualifications | Students need to have pride and the desire of contributing to the progress of life science and medical technology through their research. |
| Comments | Students study using cultured cells and animals depending on the case, and can attend research conferences. |

# Oral & Maxillofacial Infection and Environmental Health Science

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|---|---|
| Major Subject | Oral Infection and Immunity |
| Director・Position | KATSURAGI Hiroaki・Professor |
| Teaching Members・Position | MIKAMI Masato Associate Professor |
| Location of Laboratory | 4th Building・2nd & 3rd floors, 8th Building・3rd floor |
| Extension Phone Number・E-mail Address | 2485・katsura@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, reading articles and discussion, basic laboratory practice |
| School Hours | Wednesday・13:30~16:00 |
| Classroom | 8th Building・3rd floor |
| Practice Room | 4th Building・2nd & 3rd floors |
| Objective for Lectures | Students will have opportunities to study pathogenesis of microorganisms and host defense mechanisms such as inflammation and immunity. They will then decide the research theme for the academic dissertation. |
| Contents and Plans for Lectures | Students should obtain knowledge, skills and a positive attitude for research philosophy, research planning, date analysis, critical thinking, and presentation skills. In practice, students should obtain knowledge and skills of biosafety culture techniques, analytical instruments and sterilization techniques. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items:<br>1. The level of understanding of lectures and practice<br>2. Research work<br>3. Presentation at the meetings |
| Textbooks・Teaching Materials・References | 1. Original articles<br>Infection and Immunity, Cellular Microbiology, Immunology. Journal of Experimental Medicine, Journal of Dental Research, Journal of Periodontology<br>2. Textbooks for practice<br>1）Tokyo University: Manual for Microorganism Practices; 2nd ed, Maruzen, Tokyo, 1998.<br>2）Horio T et al.: Experimental Manual for Molecular Cell Biology, Nankodo, Tokyo, 1994.<br>3）Kuroki T et al.: Biomanual for Molecular Biology, Yodosha, Tokyo, 1995.<br>4）Sasaki H: Biotechnology, Yodosha, Tokyo, 1997. |
| Instructions for Course・Qualifications | Students should have the willingness and passion for research and education and furthermore, they are required to have the ability of critical thinking. |
| Comments | Students will work at the advanced research center and use special analytical instruments. |

# Oral & Maxillofacial Infection and Environmental Health Science

| | |
|---|---|
| Major Subject | Oral Environment and Community Dental Health |
| Director・Position | KOMATSUZAKI Akira・Professor |
| Teaching Members・Position | KAMODA Takeshi・ Assistant Professor |
| Location of Laboratory | 4th Building・3rd floor, 8th Building・3rd floor |
| Extension Phone Number・E-mail Address | 2581・rabbit@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, Reading and Practical training |
| School Hours | Tuesday・13:00~16:00 |
| Classroom | 4th Building・3rd floor |
| Practice Room | Laboratory (4th Building・3rd floor) |
| Objective for Lectures | To have students acquire advanced knowledge and analytical methods related to oral environmental health and to learn skills in garnering data which can serve as fundamentals for community dental health activities and in analyzing that data by the use of epidemiological methods. Students are expected to choose a study theme and write a thesis for the PhD degree. This program prepares students to become leaders in the field of community dental health. |
| Contents and Plans for Lectures | Through lectures, practice, experiments and research activities outside the campus, special knowledge will be gained related to community dental health planning, and collection and analysis of epidemiological data. In addition, this course offers special techniques related to dental health guidance and oral hygiene, thus helping students to become highly-qualified researchers and leading oral health providers. They could prove themselves to be such persons through their well-written dissertations. |
| Evaluation Method for Grades | Student's performance is evaluated comprehensively with special consideration given to the degree of understanding during lectures and practice, and to self- motivation and originality in research and social activity. |
| Textbooks・Teaching Materials・References | 1) Literature:<br>Community Dentistry and Oral Epidemiology<br>The Journal of the American Dental Association<br>2) Statistical Analysis:<br>The Facts about the Nation's Health and Medical Care －A Government Survey Report.<br>3) Lecture:<br>AOYAMA H (Supervision): Epidemiological Methods for Health Policy, 2nd ed, Igakushoin, Tokyo, 2005. |
| Instructions for Course・Qualifications | Students are required to pursue their studies with zeal and the spirit of inquiry and demonstrate initiative. |
| Comments | Materials for students will be provided as the need arises. There will be ample opportunity to participate in field surveys, to attend academic meeting and to publish research papers. Morale as well as material support is available. |

# Oral Biomaterials and Occlusion Science

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|---|---|
| Major Subject | Developmental Science of Oral Biomaterials |
| Director | OHKUMA Kazuo・Professor |
| Teaching Members・Position | IGARASHI Kensuke・Senior Assistant Professor |
| Location of Laboratory | 5th Building・3rd Floor, 5th Building・2nd Floor |
| Extension Phone Number・E-mail Address | 2589・k-ohkuma@ngt.ndu.ac.jp |
| Teaching Methods | Lecture and laboratory practice |
| School Hours | Monday・9:00～12:00 |
| Classroom | Laboratory (5th Building・3rd Floor) |
| Practice Room | Laboratory (5th Building・2nd Floor) |
| Objective for Lectures | Graduate students taking this course master basic knowledge and methods to carry out research in the field of oral biomaterials. |
| Contents and Plans for Lectures | 1st Semester:<br>1) Survey of articles in oral biomaterials<br>2) Discussion on the results of the articles surveyed<br>3) Report preparation based on the survey<br>2nd Semester:<br>1) Experimental design for oral biomaterials<br>2) Property evaluation of oral biomaterials based on the experimental design (This includes laboratory practice)<br>3) Statistical analysis for data obtained from lab measurements<br>4) Investigation about lab measurements<br>5) Discussion on the results<br>6) Article preparation based on the above results |
| Evaluation Method for Grades | Evaluation based on survey reports, articles and attendance<br>Total score: 100 points |
| Textbooks・Teaching Materials・References | 1) Japanese Society for Dental Materials and Devices: Dental Materials Journal, Japanese Publication Trading Co Ltd, 2014-2018.<br>2) Yanai H: 4Step Excel Statistics, 4th ed, OMS publication, Tokyo, 2015.<br>3) Nakajima H et al (editing): Standard Dental Engineering, 6th ed, Gakken Shoin, Tokyo, 2016.<br>4) Asai T: Need-to-Know Basics of Medical Statistics Vol. 1 －Let's overcome allergy to statistics!－, ATMS, Tokyo, 2010.<br>5) Asai T: Need-to-Know Basics of Medical Statistics Vol. 2 －Let's get to be able to interpret the results!－, ATMS, Tokyo, 2010.<br>6) Asai T: Need-to-Know Basics of Medical Statistics Vol. 3 －Let's get to be able to evaluate research quality!－, Atoms, Tokyo, 2010. |
| Instructions for Course・Qualifications | Credit will be given with a score of 60 or more score. |
| Comments | No comments in particular. |

# Oral Biomaterials and Occlusion Science

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|---|---|
| Major Subject | Functional Occlusal Treatment |
| Director・Position | MIZUHASHI Fumi・Professor |
| Teaching Members・Position | |
| Location of Laboratory | Medical Hospital 3rd floor (7th Building) |
| Extension Phone Number・E-mail Address | 3300・fumichan@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, reading books and basic laboratory practice for research |
| School Hours | First semester: Thursday・9:00~10:20 ／<br>Second semester：Tuesday・14:40~16:00 |
| Classroom | Laboratory of the Department of Removable Prosthodontics (7th Building 3rd floor) |
| Practice Room | Laboratory of the Department of Removable Prosthodontics (7th Building 3rd floor), Clinic of the Niigata Hospital |
| Objective for Lectures | Students have opportunities to learn special knowledges and treatment techniques related to stomatognathic functional diagnostics and removable denture prosthetics. Furthermore, students aim to learn advanced knowledge and establish the foundation for the study with highly original. |
| Contents and Plans for Lectures | Students can obtain deep knowledge in the field of prosthodontics through lectures, reading papers, and discussion. Students make use of this knowledge at planning a new study and writing a paper.<br>Through laboratory practice, students carry out the study and master the procedure of writing a paper.<br>In the clinic, students will master the prosthodontic treatment techniques and lay the foundation for gaining a specialist of prosthodontics. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items: The level of understanding contents of the lectures and practice, degree of initiative and originality in one's opinion, research work, presentation at the meetings, writing papers, prosthodontic treatment, accumulation of clinical cases, and percentages of school classes attended. |
| Textbooks・Teaching Materials・References | 1) Dawson PE: Functional Occlusion From TMJ to Smile Design, Mosby, St. Louis, 2006.<br>2) Annals of Japan Prosthodontic Society<br>3) Journal of Prosthodontic Research<br>4) Journal of Prosthetic Dentistry |
| Instructions for Course・Qualifications | Ideally, students should have strong enthusiasm and inquiring minds regarding research and also should have a will to contribute to future prosthetics. |
| Comments | Equipment and facilities for research are available. Students will be given many opportunities for presentation and publication of papers, and will also be given support both practically and emotionally. |

# Oral Biomaterials and Occlusion Science

| | |
|---|---|
| Major Subject | Functional Occlusal Treatment |
| Director・Position | UEDA Kazuhiko・Professor |
| Teaching Members・Position | |
| Location of Laboratory | Medical Hospital 4th floor (7th Building) |
| Extension Phone Number・E-mail Address | 3310・kazuhiko@ngt.ndu.ac.jp |
| Teaching Methods | Lecture, reading books and basic laboratory practice for research |
| School Hours | First semester : Friday 14:30～16:30 /<br>Second semester : Thursday 10:00～12:00 |
| Classroom | Medical Hospital 4th floor Oral Implant Care Unit |
| Practice Room | 4rd floor clinic and research laboratory of Niigata Hospital, Oral Implant care Unit. Niigata Hospital. |
| Objective for Lectures | Students first learn the basics of dental treatment of stomatograthic functional diagnostics and advanced clinical skill of fixed prosthodontics, oral implantology at a high level professional education to become a dental specialist. |
| Contents and Plans for Lectures | Students take lectures, read Japanese and international journals and textbooks and discuss their contents, learn the basic knowledge and techniques of how to undertake research and research methodology. Then they will learn how to write an original paper. Students learn and obtain the knowledge and skill to undertake research through preliminary experiments. Afterwards, they learn use of the laboratory effectively and the clinical skills to obtain knowledge as a dental specialist. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items : understanding level of contents of the lectures and practice, writing an original advanced research paper, clinical treatment of patients, presentation at meetings and conferences and percentage of class attendance. |
| Textbooks・Teaching Materials・References | 1） Rosenstiel SE, Land MF, Fujimoto J; Contemporary Fixed Prosthodontics, 5th edition, Mosby St, Lois, 2006.<br>2） Branemark PI, Zarb GA, Albrektsson T; Tissue-Integranted Prostheses Quintessence, Chicago 1985.<br>3） Zarb GA, Bolender CL; Prosthodontic Treatment for Edentulous Patients. 12th edition Mosby. St Lois,2003.<br>4） Lindhe J, Karring T, Lang NP: Clinical Periodontology and Implant Dentistry 3rd edition Copenhagen, Munksgaard 1997. |
| Instructions for Course・Qualifications | Students must have the will to study and must attend lectures and trainings. |
| Comments | Students can use the equipment and facilities from the Prosthodontic Department to obtain knowledge of a progressive basic science research and clinical research. |

# Oral & Maxillofacial Imaging and Histopathological Diagnostics

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|---|---|
| Major Subject | Quantitative Diagnostic Imaging |
| Director・Position | OGURA Ichiro・Professor |
| Teaching Members・Position | KAMETA Ayako・Senior Assistant Professor |
| Location of Laboratory | Hospital Building・1st floor |
| Extension Phone Number・E-mail Address | 3207・ogura@ngt.ndu.ac.jp |
| Teaching Methods | Lecture: clinical courses, laboratory work |
| School Hours | Lecture: Tuesday・10:40~12:00 and others : arbitrary times |
| Classroom | Laboratory of Radiology (Niigata Hospital・1st floor) |
| Practice Room | Laboratory of Radiology (Niigata Hospital・1st floor) |
| Objective for Lectures | Learning subjects: concepts of ionizing radiations, their actions on matter through effects on simple chemical systems, biological molecules, cell, organisms, man and clinical radiology. Prerequisite: graduate standing Science/Engineering; one course in Biological Sciences or Physics/Chemistry. |
| Contents and Plans for Lectures | The Radiology Curriculum is evolving and expanding to meet the educational needs of students. This curriculum has been created under the supervision of the Director of the Radiology Program with input from the Department Committee, faculty and students. First students will begin a rotation (to receive training of oral and maxillofacial imaging, radiation therapy, and research activities), during the rotation students will be expected to acquire adequate knowledge and develop technical skills of oral and maxillofacial radiology. To evaluate their progress, and at the end of the rotation, student's level of understanding will be measured to identify any unfulfilled goals that need to be addressed by the resident and the faculty. |
| Evaluation Method for Grades | Written and oral comprehensive examinations in the area of study, and write, present and defend a dissertation which embodies the results of original investigation by the candidate. |
| Textbooks・Teaching Materials・References | 1） Okano T, Kobayashi K, Ariji E (editing) :<br>Oral and Maxillofacial Radiology, 6th ed, Ishiyaku Publishers, Tokyo, 2018. |
| Instructions for Course・Qualifications | All deadlines should be met. |
| Comments | No comments in particular. |

# Oral & Maxillofacial Imaging and Histopathological Diagnostics

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|---|---|
| Major Subject | Histopathology of Pathogenic Mechanisms |
| Director・Position | OKADA Yasuo・Professor |
| Teaching Members・Position | KANRI Yoriaki・Senior Assistant Professor |
| Location of Laboratory | Niigata Hospital・3rd floor |
| Extension Phone Number・E-mail Address | 2226・yokada@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, reading textbooks and articles by turns and discussion, basic laboratory practice for research |
| School Hours | Tuesday・13:00~16:00 |
| Classroom | Conference room(8th Building・2nd floor), Seminar room(4th Building・2nd floor) |
| Practice Room | 3rd floor laboratory of the Niigata Hospital, 2nd floor laboratory of the Niigata School (4th Building), 2nd floor laboratory of the Biological Science Section in the Research Institute |
| Objective for Lectures | The objective is to improve the diagnosis and treatment of diseases through better understanding of the pathogenic mechanisms including etiology and the developmental processes of diseases, supplemented by the results of histopathological research. Specifically, students first acquire the abilities to review the necessary literature and techniques of experimental pathological research while also improving their ability of clinical pathological diagnosis, and then apply these skills to design an original research theme, and implement and complete the research. |
| Contents and Plans for Lectures | Students attend lectures, receive guidance to search and review many articles, and learn how to plan the theme of study.<br>Through practice and training of research techniques, graduate students learn general staining (H-E), special stainings (immunohistochemical staining), molecular biology, microfocus X-ray CT images, cell and tissue cultures for studying the diagnosis and treatment of oral cancers, PCR, etc. |
| Evaluation Method for Grades | Grading is systematically conducted based on the following: level of understanding of the contents of lectures and practical sessions, originality of research and state of implementation, written and oral examinations. |
| Textbooks・Teaching Materials・References | 1) Takagi M (editorial supervising): Atlas of Oral Pathology, 3rd ed, Bunkodo, Tokyo, 2018.<br>2) Fukayama M et al (editing): Surgical Pathology, 5th ed, Bunkodo, Tokyo, 2006.<br>3) Fukayama M et al (editing): Atlas of Histopathology, 6th ed, Bunkodo, Tokyo, 2015.<br>4) Kitagawa M et al (editing): Standard Textbook of Pathology, 6th ed, Igakushoin, Tokyo, 2015.<br>5) Shirasuna K et al (editing): Oral Maxillofacial Surgery, 3rd ed, Ishiyaku Publishers, Tokyo, 2010.<br>6) Tsukinoki K, Okada Y (editing): Standard Oral Pathology, 1st ed, Gakkenshoin, Tokyo, 2017. |
| Instructions for Course・Qualifications | Possessing a sincere attitude toward research ; self-motivated, persevering and having a keen interest to conduct research ; clear motivation to contribute to the development of dental medicine |
| Comments | Our department is well equipped not only for morphological study, but also for immunohistochemical staining, with research facilities for cell culture and molecular biology necessary for *in vitro* and *in vitro* studies. There are opportunities to participate in domestic and international scientific meetings to present research findings and collect information. |

# Oral & Maxillofacial Bio-response and Anesthesiology

| | |
|---|---|
| Major Subject | Pharmacodynamics of Hard Tissue and Salivary Glands |
| Director・Position | NAKAMURA Kenjirou・Professor |
| Teaching Members・Position | |
| Location of Laboratory | 5th Building・3rd floor |
| Extension Phone Number・E-mail Address | 2481・nakaken.ngt.ndu.ac.jp |
| Teaching Methods | Lecture, reading books and papers, discussion and experimental practice |
| School Hours | Thursday・9:00~12:00 |
| Classroom | Seminar room (4th Building・2nd floor) |
| Practice Room | Laboratory of Pharmacology (5th Building・3rd floor) |
| Objective for Lectures | Pharmacology investigates the action of drugs and explores how the drugs act on human beings. In other words, it is the study that investigates the response of the living body to the drugs. Therefore, it is important to understand the pharmacological action of the drugs from the viewpoint of interaction of the drugs and the living body. The aim of this class is to study basic and applied pharmacology on the basis of the physiological function of the living body. |
| Contents and Plans for Lectures | Lecture, reading and discussion of the following items<br>1) Principles of pharmacology<br>2) Molecular basis of pharmacology<br>3) Drugs and receptors<br>4) Pharmacokinetics<br>5) Drug interactions and adverse effects<br>6) Drug history and drug development<br><br>Experimental practice of the following items<br>1) Isolation and culture of adrenal medullary cells<br>2) Measurement of adrenal catecholamines |
| Evaluation Method for Grades | The ability and the effort to read the textbook, to understand the documentation and to discuss the theme will be evaluated. |
| Textbooks・Teaching Materials・References | 1) Dawson JS, Taylor MNF, Reide PJW: Pharmacology. 2nd ed, Mosby. London, 2002.<br>2) Clark WG, Brater DC, Johnson AR: Goth's Medical Pharmacology, 13th ed. Mosby, St Louis, 1992.<br>3) Ogura H: Current Dental Pharmacology. 4th ed, Ishiyaku Publishers, Tokyo, 2005.<br>4) Ishida H: Dental Pharmacology, 4th ed, Ishiyaku Publishers, Tokyo, 2005. |
| Instructions for Course・Qualifications | Students need to have pride and the desire of contributing to the progress of life sciences through research. |
| Comments | A copy of the textbook and reference hooks used will be provided. |

# Oral & Maxillofacial Bio-response and Anesthesiology

| | |
|---|---|
| Major Subject | Anesthesiology and Resuscitation |
| Director・Position | OOHASHI Makoto・Professor |
| Teaching Members・Position | IGUCHI Asami・Senior Assistant Professor |
| Location of Laboratory | Niigata Hospital・2nd floor |
| Extension Phone Number・E-mail Address | 2249・fujii@ngt.ndu.ac jp |
| Teaching Methods | Lectures, reading books and papers by turns and discussion, basic laboratory practice for research |
| School Hours | Monday・13:00~14:20／ Friday・13:00~14:20 |
| Classroom | Niigata Hospital・2nd floor |
| Practice Room | Niigata Hospital・2nd floor |
| Objective for Lectures | Students have opportunities to study advanced knowledge, treatment techniques and general management related to Dental Anesthesiology. Furthermore, to become dental specialist students should acquire research techniques and clinical techniques. |
| Contents and Plans for Lectures | Students should extensively read original papers and textbooks and attend lectures.<br>At preliminary practice, graduate students will master monitoring of vital signs, reading a biomonitor and learn how to perform emergency resuscitation. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items:<br>The level of understanding the contents of the lectures and practice, degree of initiative and originality in one's opinion, research work, presentation at the meetings, patient treatment in the clinic, accumulation of clinical cases and percentage of school classes attended. |
| Textbooks・Teaching Materials・References | 1） KANRI T: Handbook of Systemic Evaluation and Management of Patients in Dental Practice, Nankodo, Tokyo, 2006.<br>2） FURUYA H et al: Handbook of Dental Anesthesia and General Health Management, Gakkensyoin, Tokyo, 2009.<br>3） KANEKO A: How to Use Medicine 2011 - 2014, Dental Diamond, Tokyo, 2010.<br>4） KANRI T: Dental Local Anesthesiology. Nagasueshoten, Kyoto, 1994.<br>5） Anesthesiology, 2010. |
| Instructions for Course・Qualifications | Ideally, students should have strong enthusiasm and inquiring minds regarding research and also should be able to contribute to future dentistry. |
| Comments | No comments in particular. |

# Advanced Conservative Dentistry and Periodontology

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|---|---|
| Major Subject | Advanced Operative Dentistry・Endodontics |
| Director・Position | |
| Teaching Members・Position | KITAJIMA Kayoko・Associate Professor |
| Location of Laboratory | Niigata Hospital. 4th floor |
| Extension Phone Number・E-mail Address | |
| Teaching Methods | Lectures, reading books and papers, discussion, basic laboratory practice for research |
| School Hours | Tuesday・13:00~16:00／Thursday・13:00~16:00 |
| Classroom | Conference room (8th Building・2nd floor), Seminar room (4th Building ・2nd floor)<br>4th floor laboratory of the Niigata Hospital |
| Practice Room | 4th floor Clinic and 4th floor Laboratory of the Niigata Hospital |
| Objective for Lectures | Students have opportunities to study advanced knowledge and treatment techniques related to Endodontics. Then each student's research thesis will be fixed and the dissertation will be made. Furthermore, to become a dental specialist in conservative dentistry, the student should study more specialized knowledge and perfect treatment techniques and accumulate clinical cases. |
| Contents and Plans for Lectures | Through the lectures and reading articles, students should understand deeply. And also special knowledge for both research planning and the dissertation will be totally cultivated. At preliminary practice, students should become accustom to the experimental equipment and materials programmed to use in regular research. Through patient treatment in clinic, several types of techniques should be mastered and the number of cases required to become a dental specialist for conservative dentistry should be accumulated. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items:<br>The level of understanding of contents of the lectures and practice, degree of initiative and originality in one' s opinion, research work, presentation at the meetings, patient treatment in clinic, accumulation of clinical cases and percentage of school classes attended. |
| Textbooks・Teaching Materials・References | 1） Journal of Endodontics<br>2） Hargreaves KM, Cohen S: Cohen's Pathways of the PULP 10th ed, Mosby Elsevier, St Louis, 2011<br>3） Ingle JI, Bakland LK. Baumgartner JC: Ingle's ENDODONTICS 6. BC Decker, 2008.<br>4） Toravinejad M, Walton RE: ENDODONTICS Principles and Practice: 4th ed, Saunders Elsevier, St Louis, 2009. |
| Instructions for Course・Qualifications | Students should master the arts for experimental procedures, and prepare to utilize them for research at any time. |
| Comments | No comments in particular. |

# Advanced Conservative Dentistry and Periodontology

| | |
|---|---|
| Major Subject | Advanced Operative Dentistry ・Endodontics |
| Director・Position | SHINKAI Koichi ・Professor |
| Teaching Members・Position | SUZUKI Masaya・Associate Professor |
| Location of Laboratory | Medical Hospital (7th Building) ・4th floor |
| Extension Phone Number・E-mail Address | 3332・shinkaik@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, reading papers and discussion, laboratory practices for research, and clinical practices |
| School Hours | Tuesday・13:30~16:00 |
| Classroom | Laboratory of the Department of Operative Dentistry |
| Practice Room | Laboratory of the Department of Operative Dentistry, Clinic of the Niigata Hospital |
| Objective for Lectures | Graduate students study advanced knowledge and treatment techniques related to cariology and operative dentistry, and also learn the required knowledge to complete research projects and their thesis in this field.<br>Furthermore, students aim to qualify as specialists in conservative dentistry and esthetic dentistry. |
| Contents and Plans for Lectures | Graduate students can obtain a deeper understanding in the fields of cariology and operative dentistry through lectures and reading papers, and this positions them into making improved research design and their thesis. Through laboratory practice, students master the accurate use of devices which are actually used in research. In the clinic, students practice adhesive dental treatment on the basis of the MI concept, and accumulate a number of clinical cases required to become a specialist in the fields of conservative dentistry and esthetic dentistry in the future. Additionally, students handle laser equipment for various types of dental treatment after lectures of basic laser treatment. |
| Evaluation Method for Grades | Students are evaluated by the attitudes in lectures and seminars, understanding the level of original papers, and originality of their opinions in the discussion. During research, students are evaluated by their research work, presentation at the meetings, and thesis preparation. The abilities of reception and treatment techniques for patients are evaluated in the clinic. Overall evaluation is decided by the results of the above evaluations. |
| Textbooks・Teaching Materials・References | 1) Summitt JB, Robbins JIV, Hilton TJ, Schwartz RS: Fundamentals of Operative Dentistry: A Contemporary Approach 3rd edition, Quintessence Publishing Co, Inc, Chicago. 2006.<br>2) Roulet JF. Wilson NHF, Fuzzi M: Advances in Operative Dentistry, Quintessence Publishing Co, Inc, Chicago, 2001.<br>3) Dietschi D. Spreafico R: Adhesive Metal-Free Restorations, Quintessence Publishing Co, Inc, Chicago, 1999.<br>4) Mjor IA: Pulp-Dentin Biology in Restorative Dentistry, Quintessence Publishing Co, Inc, Chicago, 2002. |
| Instructions for Course・Qualifications | Students should make a course design and possess strong enthusiasm to achieve this goal, and make efforts to improve treatment techniques. |
| Comments | Almost all of the equipment necessary for the research work is available in our laboratory, and special equipment can be used at the advanced research center. |

# Advanced Conservative Dentistry and Periodontology

| | |
|---|---|
| Major Subject | Periodontology |
| Director・Position | SATO Soh・Professor |
| Teaching Members・Position | MOROZUMI Yuko・Associate Professor |
| Location of Laboratory | Niigata Hospital・4th floor |
| Extension Phone Number・E-mail Address | 3337・s-sato@ngt.ndu.ac.jp |
| Teaching Methods | Lecture, reading papers by discussion |
| School Hours | Wednesday・9:00~12:00 |
| Classroom | Seminar room (4th Building・2nd floor) |
| Practice Room | 4th floor laboratory of the Niigata Hospital |
| Objective for Lectures | Programs places emphasis on the biological sciences which are critical to a rationale for periodontal therapy. A thorough knowledge of classic and current periodontal literature is stressed. A variety of courses in surgical anatomy, bone and connective tissue biology, oral pathology, histopathology, and the biomedical sciences prepare the student to render efficient and comprehensive dental care. |
| Contents and Plans for Lectures | Interdisciplinary seminars are offered and students perform and complete a research project under the supervision of a teacher and an advisory committee. Every student will produce a manuscript suitable for publication as part of the research experience. Regarding clinical aspects, students will perform periodontal non-surgical and surgical therapy include all types of regenerative surgery and the placement of dental implants. |
| Evaluation Method for Grades | Academic proficiency is tested through case presentations for periodontal diseases, patient treatment in clinic and accumulation of clinical cases, oral literature examinations. and research work. |
| Textbooks・Teaching Materials・References | 1） Lindhe J: Clinical Periodontology and Implant Dentistry: 3rd ed, Munksgaard, Copenhagen, 1997.<br>2） Newman MG, Takei H, Carranza F A: Carranza' s Clinical Periodontology: 10th ed, WB Saunders Co, Philadelphia, 2006.<br>3） Annuals of Periodontology, 1996 World Workshop in Periodontics. Vol (1). Nov, 1996.<br>4） Journal of Periodontology<br>5） Journal of Clinical Periodontology |
| Instructions for Course・Qualifications | Students should have strong determination to make progress regarding research and to contribute to future dentistry. |
| Comments | No comments in particular. |

# Oral & Maxillofacial Growth and Development

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|---|---|
| Major Subject | Pediatric Oral Behavior Science |
| Director・Position | KUROKI Junko・Professor |
| Teaching Members・Position | SAKAI Sachiko・Senior Assistant Professor |
| Location of Laboratory | Niigata Hospital・4th floor |
| Extension Phone Number・E-mail Address | 3765・jshimo@ngt.ndu.ac.jp |
| Teaching Methods | Lectures, Leading books and papers, discussion and experimental practice |
| School Hours | Thursday・9:00~12:00 |
| Classroom | 4th floor laboratory of the Niigata Hospital |
| Practice Room | Niigata Hospital・4th floor, 4th floor laboratory of the Niigata Hospital |
| Objective for Lectures | The aim of this lecture is to learn about the advanced knowledge and treatment techniques related to pediatric dentistry through the basic science and clinical study. Then each student's research thesis will be fixed and the dissertation will be undertaken. Furthermore, to get the license of the Japanese Society of Pediatric Dentistry medical specialist, students should study more specialized knowledge and treatment techniques and accumulate clinical cases. |
| Contents and Plans for Lectures | Through the discussion of lectures and reading papers, students should undertake the basic and clinical knowledge.<br>Students should learn about the molecular biological and morphological technique required for fundamental study. Moreover, students should master the knowledge to summarize their research, to present the results of their research in the meeting and to submit them.<br>Students should learn the clinical knowledge and skill required in order to acquire the license of the Japanese Society of Pediatric Dentistry medical specialist. through clinical treatment and experimental practice. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items:<br>The level of understanding contents of the lectures and practice, degree of initiative and originality in one' s opinion, research work, presentation at the meetings and clinical pediatric treatment |
| Textbooks・Teaching Materials・References | 1） Text book for the lecture<br>2） The Japanese Journal of Pediatric Dentistry<br>3） Pediatric Dentistry<br>4） Pediatric Dental Journal<br>5） Journal of Dental Research |
| Instructions for Course・Qualifications | Ideally, student should have enthusiasm and inquiring minds regarding research and also should be able to contribute to the field of pediatric dentistry. |
| Comments | Environment for students will be provided as the need arises. |

# Oral & Maxillofacial Growth and Development

| | |
|---|---|
| Major Subject | Orthodontics and Dentofacial Orthopedics |
| Director・Position | KOBAYASHI Sakurako・Professor |
| Teaching Members・Position | KAMEDA Takashi・Senior Assistant Professor |
| Location of Laboratory | Medical Hospital (7th Building)・4th floor |
| Extension Phone Number・E-mail Address | |
| Teaching Methods | Lectures, reading books and papers by turns and discussion, basic laboratory practice for research |
| School Hours | Monday・13:00~14:30 |
| Classroom | 4th floor laboratory of the Niigata Hospital |
| Practice Room | 4th floor laboratory of the Medical Hospital (7th Building)<br>4th floor laboratory of the Niigata Hospital |
| Objective for Lectures | Students have opportunities to study special knowledges and treatment techniques related to orthodontics and dentofacial orthopedics. Then each student's research thesis will be fixed and the dissertation will be undertaken. Furthermore, to become a specialist, acknowledged by the Japanese Orthodontic Society, student should study more specialized knowledges and orthodontic treatment and accumulate clinical cases. |
| Contents and Plans for Lectures | Through lectures and reading papers and textbooks, students should extensively acquire knowledges. Deep understanding will be accomplished through discussion. And also special knowledges and techniques for both research planning and the dissertation will be totally cultivated.<br>Students will master orthodontic treatment techniques in clinic and the number of cases required to become a specialist for orthodontics should be accumulated. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items: The level of understanding contents of the lectures and practice, degree of initiative and originality in one's opinion, research work, presentation at the meetings and orthodontic treatments. |
| Textbooks・Teaching Materials・References | 1） Reading List of Important References.<br>2） Proffit WR: Contemporary Orthodontics. Mosby Inc, Missouri, 2000.<br>3） Melsen B: Current Controversies in Orthodontics, Quintessence Publishing Co Ltd, Chicago, 1991. |
| Instructions for Course・Qualifications | Ideally, students should have strong enthusiasm and inquiring minds regarding research and also should be able to contribute to the field of orthodontics. |
| Comments | Student will be given many opportunities to make presentations and publication of papers and also given support both practically and emotionally. |

# Oral & Maxillofacial Surgery and Systemic Medicine

| | |
|---|---|
| Major Subject | Oral and Maxillofacial Surgery |
| Director・Position | TANAKA Akira・Professor |
| Teaching Members・Position | KOBAYASHI Eizaburo・Senior Assistant professor |
| Location of Laboratory | Niigata Hospital・2nd floor |
| Extension Phone Number・E-mail Address | 3240・atanaka@ ngt.ndu.ac.jp |
| Teaching Methods | Lectures, basic laboratory practice for research |
| School Hours | Friday・10:00~11:30am |
| Classroom | Professor rooms and laboratories (Niigata Hospital・2nd floor) |
| Practice Room | 2nd floor laboratories of the Niigata Hospital |
| Objective for Lectures | The purpose of students has to learn frontier dental science and modern medicine. Goals are clinical trials based on these researches. Diseases of maxillo-mandibular area should be considered combined with systemic disorders and make evidence by mean of experimental methods and prescribe on journals |
| Contents and Plans for Lectures | Scientific and systemic information is are required by lectures and discussion.<br>Students should master cancer personalized chemotherapy, regenerative medicine,importance of the oral health care by lectures. |
| Evaluation Method for Grades | Students will be evaluated according to originality, advancement, and, additionally, results of presentations at academic congresses and publications of scientific journals. |
| Textbooks・Teaching Materials・References | Prints will be prepared based on present or modern information and knowledges. |
| Instructions for Course・Qualifications | Students are expected to contribute to the future development of the science of Oral and Maxillofacial Surgery with great passion and enthusiasm |
| Comments | Experimental research can be undertaken in the laboratory rooms and will correspond with lectures. All support for publication in the international journals is available as much as possible.<br>Collaborations with basic and clinical groups are also available when needed. |

# Oral & Maxillofacial Surgery and Systemic Medicine

| | |
|---|---|
| Major Subject | Clinical Examination |
| Director・Position | OHKOSHI Shogo・Professor |
| Teaching Members・Position | YAMAGUCHI Akira・Professor |
| Location of Laboratory | Medical Hospital (7th Building)・3rd floor |
| Extension Phone Number・E-mail Address | 3738・okoshi@ndu.ngt.ac.jp |
| Teaching Methods | Lectures, reading books and papers in by turns and discussion, basic laboratory practice for research |
| School Hours | Thursday・14:00~15:30 |
| Classroom | 3rd floor Medical Office of Medical Hospital (7th Building) |
| Practice Room | 1st and 2nd floor, Medical Department Outpatient Clinic and Ward of Medical Hospital (7th Building) |
| Objective for Lectures | Students have opportunities to study advanced knowledge and diagnostic techniques related to oral diseases and systemic medicine. Then each student's research thesis will be fixed and the dissertation will be undertaken. Furthermore, to become dental specialists who can deal with systemic diseases associated with oral diseases, students should acquire more specialized knowledge, perfect diagnostic and treatment techniques and accumulate clinical cases. |
| Contents and Plans for Lectures | Through lectures and reading circles, students should extensively read papers and textbooks. Deep understanding will be accomplished through discussion. And also special knowledge for both research planning and undertaking the dissertation will be totally cultivated.<br>During preliminary practice, students should become accustomed to the experimental equipment and materials used in regular research.<br>Students should master special techniques through patient treatment in clinic, and the number of cases required to become a specialist for maxillofacial surgery should be accumulated. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items: Level of understanding of contents of lectures and practice, degree of initiative and originality in one's opinion, research work, presentation in meetings, patient treatment in clinic, accumulation of clinical cases and percentage of school classes attended. |
| Textbooks・Teaching Materials・References | 1） Nishida J, Kojima T,Ookubo T Internal Medicine for Dentists Nankodo Co Ltd, Tokyo, 2018. |
| Instructions for Course・Qualifications | Ideally, students should have strong motivation and inquiring minds regarding research and also should be able to contribute to future dentistry. |
| Comments | Equipment and facilities for basic・clinical research are available.<br>Students will be given many opportunities of presentation and publication of papers and will also be given support both practically and emotionally. |

# Statistics in Dentistry

| | |
|---|---|
| Major Subject | Statistics in Dentistry |
| Director・Position | SHINKAI Koichi ・Professor |
| Teaching Members・Position | |
| Location of Laboratory | Medical Hospital (7th Building) ・4th floor |
| Extension Phone Number・E-mail Address | 3332・shinkaik@ngt.ndu.ac.jp |
| Teaching Methods | Lecture and practice |
| School Hours | Wednesday・13:30~16:00 |
| Classroom | Seminar Room (4th Building, 2nd Floor) |
| Practice Room | Seminar Room (4th Building, 2nd Floor) |
| Objective for Lectures | The aim of this class is to acquire fundamental knowledge and techniques in statistics to plan, analyze and present research in dentistry. |
| Contents and Plans for Lectures | First half: lectures and practices of data collection, descriptive statistics, statistical tables and graphs, and basic inductive statistics using a scientific calculator<br>Second half: lectures and practices of parametric tests, analysis of variance (including repeated measurement), multiple comparison procedures, nonparametric tests, correlation, simple linear regression, multiple regression analysis, power analysis, sample size estimation, and multivariate analysis using statistical software for Windows |
| Evaluation Method for Grades | Evaluation will be based on practice reports, understanding level of lecture contents, and attendance. |
| Textbooks・Teaching Materials・References | 1） Kurihara S: Nyumon Toukeigaku, 1st ed., Ohmsha Ltd., Tokyo, 2011.<br>2） Scientific calculator with statistics mode by Sharp Corp.<br>3） Statistical analysis add-in software for Microsoft Excel: Excel Statistics BellCurve for Windows, SSRI.<br>・Tsuji T ed.: Dental Statistics and Dental Epidemiology, Gakken Shoin, Tokyo, 1991.<br>・Ichihara K: Statistics for Bioscience, Nankodo, Tokyo, 1991. |
| Instructions for Course・Qualifications | Bring a scientific calculator in the first half and a Windows notebook PC with above-mentioned add-in software in the second half. |
| Comments | Persons besides first-year graduate students may attend this class. |

# Core Classes/ Clinical Case Report (1)

| | |
|---|---|
| Year・Semester・Credit | The first year・1st Semester・1.5 credits |
| Major Subject | Clinical Case Report (1) |
| Director・Position | KUROKI Junko・Professor |
| Location of Laboratory | Niigata Hospital・4th floor |
| Extension Phone Number・E-mail Address | 3765・jshimo@ngt.ndu.ac.jp |
| Teaching Methods | 80 minutes lecture using PC or slide projector. |
| School Hours | Thursday・14:40~16:00 |
| Classroom | Conference room (8th Building・2nd floor) |
| Objective for Lectures | Students have opportunities to learn new topics in research, clinical diagnostics and newly advanced treatment techniques in clinic. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items: Understanding level of contents of the lectures, contents of report presented, results of oral examination and percentage of school classes attended. |
| Textbooks・Teaching Materials・References | A textbook will be introduced from teaching members. Other teaching materials such as reprints of the papers are also given from teaching members. |

# Contents and Plans for Lectures

| No. | Date | Themes of the Lectures | Teaching Member・Position |
|---|---|---|---|
| 1 | 5/12 | Biomechanical root canal preparation using nickel titanium files | KITAJIMA Kayoko・Associate Professor |
| 2 | 5/19 | Esthetic adhesive restorations based on the mi concept | SHINKAI Koichi・Professor |
| 3 | 5/26 | Application of zirconia to fixed dental prosthesis | UEDA Kazuhiko Professor |
| 4 | 6/2 | Occlusion for removable dentures: | MIZUHASHI Fumi Professor |
| 5 | 6/16 | Dysphagia rehabilitation | MOROZUMI Yuko・Associate Professor |
| 6 | 6/23 | Surgical periodontal treatment | SATO Soh・Professor |
| 7 | 6/30 | Diseases of oral medicine | OHKOSHI Shogo・Professor |
| 8 | 7/7 | Fundamental and clinical researches of the personalized anticancer drug chemotherapy for oral cancer | TANAKA Akira・Professor |
| 9 | 7/14 | General management of the compromised patient: Monitoring of vital signs, reading a biomonitor and learning How to perform emergency resuscitation. | OOHASHI Makoto・Professor |
| 10 | 7/28 | Dental treatment for people with special needs | SAKAI Sachiko・Senior Assistant Professor |
| 11 | 9/1 | Multimodal imaging of oral and maxillofacial lesions | OGURA Ichiro・Professor |
| 12 | 9/15 | Early treatment for malocclusion | OTA Shin・Assistant Professor |

# Core Classes/ Clinical Case Report (2)

| | |
|---|---|
| Year・Semester・Credit | The first year・2nd Semester・1.5 credits |
| Major Subject | Clinical Case Report (2) |
| Director・Position | TANAKA Akira・Professor |
| Location of Laboratory | Niigata Hospital・2nd floor |
| Extension Phone Number・E-mail Address | 3240・atanaka@ngt.ndu.ac.jp |
| Teaching Methods | 80 minutes lecture using PC or slide projector. |
| School Hours | Thursday・14:40～16:00 |
| Classroom | Conference room (8th Building・2nd floor) |
| Objective for Lectures | Students have opportunities to learn new topics in research, clinical diagnostics and newly advanced treatment techniques in clinic. |
| Evaluation Method for Grades | Grading is systematically undertaken using the following items: Understanding level of contents of the lectures, contents of report presented, results of oral examination and percentage of school classes attended. |
| Textbooks・Teaching Materials・References | A textbook will be introduced from teaching members. Other teaching materials such as reprints of the papers are also given from teaching members. |

# Contents and Plans for Lectures

| No. | Date | Themes of the Lectures | Teaching Member・Position |
|---|---|---|---|
| 1 | 10/6 | The latest histopathological diagnosis technique for the precancerous lesion and its clinical application | OKADA Yasuo・Professor |
| 2 | 10/13 | Treatment of intractable periapical disease and introduction of microscope for endodontic treatment. | KITAJIMA Kayoko・Associate Professor |
| 3 | 10/20 | Application of photodentistry to caries treatment | SHINKAI Koichi・Professor |
| 4 | 10/27 | Esthetic periodontal treatment | SATO Soh・Professor |
| 5 | 11/10 | Analysis and Assessment of mandibular condyle movement | MIZUHASHI Fumi・Professor |
| 6 | 11/17 | Infomation obtained from medical innterview and subsequent correspondence<br>-Points to be aware of during dental treatment- | IGUCHI Asami・Senior Assistant Professor |
| 7 | 11/24 | Clinical application and evaluation of bone grafting materials | SUZUKI Masaya・Associate Professor |
| 8 | 12/1 | Evidence of the Oral health care | TANAKA Akira・Professor |
| 9 | 12/15 | Considering implant therapy from superstructure designs and materials | UEDA Kazuhiko・Professor |
| 10 | 12/22 | Oral change in development of children | KUROKI Junko・Professor |
| 11 | 1/12 | Orthodontic treatment in combination of anchoring screw | GOTO Sho・Assistant Professor |
| 12 | 1/19 | Diffusion-weighted MR imaging and US elastography | OGURA Ichiro・Professor |

## Core Classes/ Principles of Oral Sciences

| | |
|---|---|
| Year・Semester・Credit | The first year・2nd Semester・1.5 credits |
| Major Subject | Principles of Oral Sciences |
| Director・Position | KATSURAGI Hiroaki・Professor |
| Location of Laboratory | Office of Microbiology・3rd floor・8th Building |
| Extension Phone Number・E-mail Address | 2485・katsura@ngt.ndu.ac.jp |
| Teaching Methods | 80 minutes lecture using PC or slide projector. |
| School Hours | Thursday・13:00～14:20 |
| Classroom | Conference room (8th Building・2nd floor) |
| Objective for Lectures | Students have opportunities to learn basic items and techniques for oral sciences |
| Evaluation Method for Grades | Understanding level of contents of the lectures, contents of report presented, results of oral examination and percentage of school classes attended. |
| Textbooks･Teaching Materials･References | A textbook will be introduced from teaching members. Other teaching materials such as reprints of the papers are also given from teaching members. |

## Contents and Plans for Lectures

| No. | Date | Themes of the Lectures | Teaching Member・Position |
|---|---|---|---|
| 1 | 10/6 | Research and researcher | KATSURAGI Hiroaki・Professor |
| 2 | 10/13 | Research plan, theme and protocol | SATO Soh・Professor |
| 3 | 10/20 | Quality of the thesis<br>Document retrieval system and evidence based medicine | KATSURAGI Hiroaki・Professor<br>SAITOH Masao |
| 4 | 10/27 | How to write and publish a manuscript | SATOH Yoshihide・Professor |
| 5 | 11/10 | Declaration of Helsinki and ethical examination and protection of personal information | KOMATSUZAKI Akira・Professor |
| 6 | 11/17 | Introduction of the equipment and apparatus in ARC | NAKAMURA Kenjirou・Professor |
| 7 | 11/24 | Basic and application of immunohistochemistry | OKADA Yasuo・Professor |
| 8 | 12/1 | Part I　Principle of recombinant DNA | MORITA Takao・Professor |
| 9 | 12/15 | Part II　Restricted enzyme digestion, ligation | OKA Shunya・Associate Professor<br>IMAI Akane・ Professor (Junior college)<br>MIKAMI Masato・Associate Professor<br>FUKUI Kayoko・Senior Assistant Professor<br>NAKAMURA Kenjirou・Professor<br>MORITA Takao・Professor<br>TAKEZAWA Haruka・Senior Assistant Professor |
| 10 | 12/22 | Part III　RT-PCR | |
| 11 | 1/12 | Part IV　Transformation I | |
| 12 | 1/19 | Part V　Transformation II | |
| 13 | 1/26 | Ethical aspects of animal experiments | NAKAMURA Kenjirou・Professor |
| 14 | 2/2 | Nuclear Medicine in Dentistry | OGURA Ichiro・Professor |
| 15 | 2/9 | Care and culture of laboratory animals | MIKAMI Masato・Associate Professor |