

World first Course of Aeronautic Dentistry in Kepler Space University

Balwant Rai

ABSTRACT

Aeronautic dentistry is specialized branch of dentistry which deals with the study of application of dentistry in aeronautic environment. Aeronautic dentistry course has been started first in Kepler space university by Balwant Rai. This paper reviews the curriculum of aeronautic dentistry.

Key words: Aeronautic dentistry, Kepler space university

INTRODUCTION

A dentist during an extended-duration space flight for mars mission is not an option. X rays, root canals, and definitive dental care are luxuries that are not available in space. Moreover, since in-flight equipment and supplies carried into space are inadequate by restrictions on weight and storage space in addition to the requirement that they operate well in microgravity, the dental care-related equipment that can be provided is currently restricted. This restriction, however, should be all but eliminated by the advent of new technologies and the expansion of current technologies. We have to discover new oral hygiene maintains which successfully work in microgravity. Thus with the construction of long-term space habitats such as the International Space Station , NASA already being realized and plans for exploration-class missions maturing, the provision of comprehensive dental treatment to crews during space flights will become not only possible but practicable in the near future . Although the most important goal of clinical

Aeronautic dentistry is to return an astronaut or a cosmonaut who has a dental emergency to optimal functioning capacity as soon as possible. NASA has established strict standards for astronaut selection, retention, and preflight dental Examinations for astronauts who have been chosen for a specific space flight, a strict clinical schedule is followed. At 6 months before launch, crewmembers undergo an examination. If dental treatment is deemed necessary, all such treatment is completed by 3 months before launch so as to minimize potential problems in flight. The crew medical officers attend a preflight briefing that prepares them to handle the dental emergencies that might occur during a flight. Finally and most important from our perspective, all astronauts-whether assigned to a crew or not-are expected to maintain optimal physical and oral health and to follow good oral hygiene practices. Still no university and space agencies except Kepler Space University are taking this field seriously, as it is very important for long mission like Mars mission.

Kepler space university- General Expectations

The outline and structure of each Course creates a common set of expectations for your work. At the same time, each individual Instructor has a personal style and way of working with Learners that is unique. However, here are some general considerations

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the Kepler Space University School of Psychology wishes to emphasize.

The relationship between Learner and Faculty is important. While Instructors are responsible for teaching Course content, they also serve as mentors. One of their objectives is to assist you in your socialization into the profession of Psychology. Please feel free to discuss your particular needs and learning styles with any member of the Faculty.

DISCUSSION ETIQUETTE

Kepler Space University School of Psychology is committed to open, frank, and insightful dialog in all its courses. Diversity has many manifestations, including diversity of thought, opinion, and values. We encourage all Learners to be respectful of that diversity and to refrain from inappropriate commentary.

1. Never post, transmit, promote, or distribute content that is known to be illegal.
2. Never post harassing, threatening, or embarrassing comments.
3. If you disagree with someone, respond to the subject, not the person.
4. Never post content that is harmful, abusive, racially, ethnically, religiously, or otherwise potentially offensive.

Confidential of Information Shared by Learners

Kepler Space University does not guarantee the confidentiality of information shared by Learners in the online Course environment. Therefore, Learners should not share any confidential information from employers.

COURSE SCHEDULE

You will have a total of 12 weeks to complete all Written Assignments. Course Room Discussions stop at the end of the 10th week of the quarter. Weeks 11 and 12 are to be devoted to the final paper or project. Please keep current in class. Learners who fall behind are less likely to get feedback from others in

online Discussions. If something happens that is going to cause you to fall behind, contact your Instructor.

Learners are expected to participate in the Course Room Discussion a minimum of two times each week. Many Learners report that it takes between 8 to 10 hours each week to complete the reading assignments and an additional 2 to complete the Course Room postings. Therefore the minimum time commitment for a psychology course is 10 to 12 hours per week.

To assure that our online Course Discussions reflect the quality of scholarly and professional discourse found in the best campus-based classrooms, the Kepler Space University School of Psychology has established Posting Guidelines for weekly Course Room participation. These apply to all 5 credit Psychology courses.

POSTING GUIDELINES

The Instructor will usually post the Reading Assignment and the Discussion topic as early as Sunday evening, but no later than Monday noon. At times, there will be two Discussion Topics. Each Learner is expected to respond to the Discussion topic(s) and to at least one other Learner's and/or the Instructor's response. Instructors might respond to individual Learners or they might offer comments that further the discussion by identifying themes or patterns of thinking reflected in the overall postings. The week's Discussions will conclude on Saturday evening.

Learner comments to the Discussion Topic are expected to be substantive in nature (250 to 500 words). Learner comments to at least one other Learner is expected to be between 150 and 250 words. Learners are expected to reference the Assigned Readings or other theoretical, empirical, or professional literature as appropriate. Use of APA form and style is expected when referencing sources used in one's postings.

Competency Education

The Kepler Space University School of Psychology adheres to a competency model of professional education where Learners will demonstrate through online Courses the acquisition of prescribed knowledge sets, academic/intellectual skills, and practice proficiencies associated with the practice of professional Psychology in their area of specialization. The following Guide will aid you in monitoring your progress in mastering competencies associated with your degree specialization.

KNOWLEDGE SETS

1. Understanding of current theoretical, research, and practice literature in the field.
2. Familiarity with relevant journals, websites, listserves, and other venues in the field.
3. Familiarity with accepted research methodologies in the field.

ACADEMIC/INTELLECTUAL SKILLS

1. Ability to critically analyze published research across a variety of venues.
2. Ability to apply quantitative and/or qualitative and/or other modes of inquiry.
3. Ability to apply Psychological modes of communication.

PRACTICE PROFICIENCIES

1. Ability to assess, diagnose, and plan appropriate interventions.
2. Ability to treat, educate, and consult.
3. Ability to evaluate one's own professional practice.
4. Ability to act in and ethically and legally responsible manner.

GRADING POLICY

All courses in the School of Psychology are taken for a letter grade. Instructors can award the following course grades:

A - SUPERIOR

Will be awarded to those Learners who meet all participation requirements and submit all Course Assignments by the end of the quarter in which they are registered. All submitted materials must meet the specified evaluation criteria and the work must be of a superior nature.

B - SATISFACTORY

Will be awarded to those Learners who meet all participation requirements and submit all Course Assignments by the end of the quarter in which they are registered. All submitted materials must meet the specified evaluation criteria and the work must be of a satisfactory nature.

C - MARGINAL

Will be awarded to those Learners who meet most participation requirements and submit most Course Assignments by the end of the quarter in which they are registered. All submitted materials must meet the specified evaluation criteria and the work must be of at least a marginally satisfactory nature.

F - UNSATISFACTORY

Will be assigned to those Learners who do not meet specified criteria for the award of a grade of C.

I - INCOMPLETE

Will be assigned at the discretion of the Instructor to those Learners who have completed all Course Room Assignments but have not completed the final paper or project. Learners who subsequently complete the final paper or project will have their grade changed to the appropriate letter grade.

NC - (NO CREDIT)

Can be assigned to Learners who do not meet all Course requirements. Eligibility for the award of a NC requires satisfactory participation in the majority of the weekly Course Room Discussions. Learners who receive an I (Incomplete) and do not submit a final paper or project by the end of the quarter will receive an NC in place of the I (Incomplete). Learners who receive this grade can repeat the Course in a future quarter.

Assoc.Professor: Dr. Balwant Rai

Course: Qualitative Analysis E m a i l :
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This Course serves as an introduction to the developing field of Aeronautic Dentistry. This area of inquiry was found in 2010 by Dr. Balwant Rai and has burgeoned into its present form.

Aeronautic dentistry is a multidisciplinary dentistry scientific field that includes dentistry, oral science, and oral biology; and a strong collaboration with the space community. This field is relevant to scientists, scholars, and students who have an interest in space and dentistry. Students will become familiar with the definition, scope, and relevance of the field. They will also gain important knowledge associated with its subfields.

Human physiological adaptation to the conditions of space is a challenge faced in the development of human spaceflight. A round trip to Mars with current technology is estimated to involve at least 18 months in

transit alone. How the human body reacts to such time periods in space is a vital part of the preparation for such journeys. Exposure to microgravity and the space environment during short- and long-duration space missions has important medical and dental health implications in astronauts. Aeronautic dentistry should be introduced to explore these untouched facts. Aeronautic dentistry is specialized branch of dentistry which deals with the study of application of dentistry in aeronautic environment. Addressing these issues requires the combined efforts of both branches of dentistry. This underlying theme is important for your orientation to this course and to your writing assignments.

Write your assignments with the thought that you may decide to expand them into conference papers, or publish them as student essays on aeronautic dentistry, or other outlets.

Learners are expected to participate in the Course Room Discussion a minimum of two times each week. Many Learners report that it takes between 8 to 10 hours each week to complete the reading assignments and an additional 2 to complete the Course Room postings. Therefore the minimum time commitment for a psychology course is 10 to 12 hours per week.

Your weekly assignments in the Discussion Topic sections will consist of a total of ten essays (between 250-500 words each) that respond to the weekly Discussion Topic. Your final assignment will be either a 10 to 12 page (2,500-3,000 word) Paper demonstrating your understanding of the material presented in the Course or a Project designed in consultation with the Instructor.

Grading is based on your articulation, comprehension of the reading materials, and your ability to demonstrate critical thinking and critical thinking will in involve creative thinking, interjecting your own personal experience and ideas into your essays. If you do not understand what a given assignment entails, please do not hesitate to ask.

REQUIRED TEXTS AND SOFTWARE

Leedy and Ormrod. (2005). Practical Research: Planning and design, 8/E.

Creswell, J.W. (2009). Research Design: Qualitative, Quantitative, and Mixed Methods. 3rd Ed., QSR Nvivo 8, Student version.

Overall Course Learning Goals

Upon completion of this Course, you will:

1. Understand the definition and scope of aeronautic dentistry, and understand how and why aeronautic dentistry is becoming more critical to space activities.

2. Understand how dentistry activities important for space agencies, dental medicine and medicine development on Earth.

Unit 1 - Introduction to the Course

Unit 2-Definition, history, purpose of Aeronautic dentistry and Dental medicine

Unit 3-Structure and performance of main types of aircrafts

Unit 4- Basic Gas laws

Unit 5- Aerial environment conditions of different planets

Unit 6- Brief -Basic Human anatomy and physiology

Unit 7-Brief -Oral anatomy and pathophysiology

Unit 8-Microgravity and oral - facial effects

Unit 9-Jaws bone physiology in microgravity

Unit 10-Facial muscles and oral cavity muscle physiology in microgravity

Unit 11-Oral immunology and microbiology in microgravity

Unit 12-Effect of radiation on face and oral cavity in microgravity

Unit 13- Oral circulation and nerve supply in microgravity

Unit 14-Barodontologia and barosinusitits

Unit 15-Dental Material in Aerospace environments

Unit 16-Oral cavity physiology and adverse effect of aerospace environments and its prevention

Unit 17-Effect of aerospace environment on saliva, tooth, oral microflora, oral cavity neurophysiology

Unit 18-Oral surgery and oral medicine in aerospace environment

Unit 19-Restorative dentistry in aerospace environment

Unit 20-Dental anaesthesiology

Unit 21-Laser surgery in Aerospace environment

Unit 22-Dental emergency diagnosis and prevention in microgravity environment

Unit 23-Oral exercise for prevention of bone loss and other adverse effects

Unit 24-Oral Imaging in Aerospace Environment

Unit 25-Oral Hygiene in aerospace environment

Unit 26-Oral infection in microgravity

Unit 27-Ethics and Laws for aeronautic dentists and Aeronautic dental researchers

Unit 28 - Final Paper or Project

Unit 29-Completing the Course

Unit 1 -- Introduction to the Course

Learning Objectives

Upon completion of this unit, you will:

1. Become familiar with ways of accessing the online Course web pages.

2. Preview materials you will need for the Course.

3. Become acquainted online with the instructor and other students.

4. Gain knowledge about the definition of Aeronautic dentistry.

READING ASSIGNMENTS

Definition and history of the Aeronautic dentistry

DISCUSSION TOPIC

Introduce yourself to the class and describe your interest in the field of Aeronautic dentistry. Why did you choose this course and what do you expect to gain from it? Feel free to ask questions.

Unit 2 -- Definition, history, purpose of Aeronautic dentistry and Dental medicine

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the scope and relevance of the field of Aeronautic dentistry.
2. Understand the relevance of the field to space exploration, space settlement, and space science.

READING ASSIGNMENTS

B. Rai : Aeronautic Dentistry: A New Specialized branch and its Curriculum Guidelines .

The Internet Journal of Dental Science. 2007 Volume 5 Number1 (<http://www.ispub.com/ostia/index.php?xmlFilePath=journals/ijds/vol5n1/aeronautic.xml>)

Rai B, Kaur J. Chapter-1. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

RESPOND TO ONE OR BOTH OF THE FOLLOWING:

1. What is aeronautic dentistry and why is it important in the 21st century? Define the field, its scope, and its relevance to space exploration, space settlement, and space science.
2. Why aeronautic dentistry and how do they relate to space exploration, space settlement, work and leisure in space, and long-

duration space travel?

Unit 3 -- Structure and performance of main types of aircrafts

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand environmental conditions inside the aircrafts and long shuttles.
2. Give idea how to improve the performances of long and short space mission.

Reading Assignment

Rai B, Kaur J. Chapter-2. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

Why is structure of aircrafts important for space mission? How can aeronautic dentistry, as an academic field, contribute to it?

How aeronautic dentist can contribute in space mission?

UNIT 4 - BASIC GAS LAWS

Learning Objectives

Upon completion of this unit, you will:

1. Understand the basic concepts of gas laws
2. How gas laws related to aeronautic dentistry?

READING ASSIGNMENTS

Rai B, Kaur J. Chapter-3. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

Why gas laws are important in dentistry?

What's the relation between gas laws and aeronautic dentistry?

Unit 5 - Aerial environment conditions of different planets

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the environmental conditions of different planets and its relation to aeronautic dentistry.

READING ASSIGNMENTS

<http://history.nasa.gov/conghand/environ.htm>

Rai B, Kaur J. Chapter-4. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

Respond to one or two of the following questions:

1. Difference between environmental conditions of earth and Mars
2. Describe suitable environmental conditions of each planet for living.

Unit 6 - Brief -Basic Human anatomy and physiology

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the basic concept of human anatomy and physiology.
2. How it's important in space activity?

READING ASSIGNMENTS

Rai B, Kaur J. Chapter-5. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

1. Is knowledge of human anatomy and physiology important for space scientists?

2. How human anatomy and physiology related to aeronautic dentistry?

Unit 7 -Brief -Oral anatomy and patho-physiology

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the basic concept of human oral anatomy and patho- physiology.
2. How it's important in space activity?

READING ASSIGNMENTS

Rai B, Kaur J. Chapter-6. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

1. Is knowledge of human oral anatomy and patho-physiology important for space scientists?

2. How human oral anatomy and patho-physiology related to aeronautic dentistry?

Unit 8 - Microgravity and oral - facial effects

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the basic concept of microgravity
2. Adverse effects of microgravity on oral cavity

READING ASSIGNMENTS

Dr. Balwant Rai, BDS,MS,: Human Oral Cavity in Simulated Microgravity: New

Prospects, Adv. in

Med. Dent. Sci., 3(2): 35-39, 2009
(www.insipub.com/aensi/amds/2009/35-39.pdf)

Rai B, Kaur J. Chapter-7. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

What short and long term effects of microgravity on oral cavity?

Why microgravity effect on oral cavity?

Unit 9 -Jaws bone physiology in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand the physiology of jaw bones.
2. Effect of microgravity on jaw bones physiology

READING ASSIGNMENTS

Rai B, Kaur J. Bone mineral density, bone mineral content, GCF (MMP-8, MMP-9, cathepsin K, osteocalcin), and salivary and serum osteocalcin levels in human mandible and alveolar bone under conditions of simulated microgravity. J. Oral Sci. 2010

Rai B, Kaur J. Chapter-8. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

What's short and long term effect of microgravity on jaw bones?

Discusses brief on physiology of jaw bones

Unit 10 - Unit 10-Facial muscles and oral cavity muscle physiology in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand facial muscle physiology in sufficient detail to proceed with sending crews on long -term space missions.
2. Understand the technology used to prevent adverse effect of microgravity on oral facial muscle physiology

READING ASSIGNMENTS

Dr. Balwant Rai, BDS,MS,: Human Oral Cavity in Simulated Microgravity: New Prospects, Adv. in

Med. Dent. Sci., 3(2): 35-39, 2009
(www.insipub.com/aensi/amds/2009/35-39.pdf)

Rai B, Kaur J. Chapter-9. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

What's short and long term effect of microgravity on facial muscles?

Discusses brief on setup ground based experiment of simulated microgravity to explore the muscle physiology

Unit 11 -Oral immunology and microbiology in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Understand basic concept of oral immunology in microgravity.
2. Effect of microgravity on virulence of oral microbial

READING ASSIGNMENTS

1. Balwant Rai: Effects of Microgravity on Teeth and Periodontium: Aeronautic

Dentistry. The Internet Journal of Dental Science. 2007. Volume 5 Number 2

2. Rai B, Kaur J. Chapter-10. Text and fundamental of aeronautic dentistry (Book)

Nickerson CA, Ott CM, Mister SJ, Morrow BJ, Burns-Keliher L, Pierson DL. Microgravity as a novel environmental signal affecting *Salmonella enterica* serovar Typhimurium virulence. *Infect Immun* 2000;68:3147-3152.

DISCUSSION TOPICS

1. What's the effect of microgravity on microbial virulence?

2. Why bacterial virulence increase in microgravity condition?

Unit 12-Effect of radiation on face and oral cavity in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about radiation hazards on oral cavity.

2. Short and long term effect of space radiation hazards on oral cavity

READING ASSIGNMENTS

1. Rai B, Kaur J. Chapter-11. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPICS

1. What is short and long term effect of space radiation hazards on oral cavity?

2. What is adverse effect of space radiation hazards on oral cavity?

Unit 13- Oral circulation and nerve supply in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn short and long term effect of microgravity on oral circulation

2. Learn short and long term effect of microgravity on oral nervous system

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-12. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What's short term effect of microgravity on oral circular and nervous systems and how to prevent them?

What's long term effect of microgravity on oral circular and nervous systems and how to prevent them?

Unit 14- Barodontologia and barosinusitis

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about barodontologia and barosinusitis.

2. How to prevent the barodontologia and barosinusitis

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-13. Text and fundamental of aeronautic dentistry (Book)

2. Rai B, Kaur J, Anand SC. Prevalence of barodontalgia in Indian origin pilots: a survey. *J. Stomat. Occ. Med.* (2010) 3: 1-3

DISCUSSION TOPIC

What's barodontologia? How to prevent

temporary and permanently?

What's barosinusitis? How to prevent temporary and permanently?

Unit 15- Dental Material in Aerospace environments

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about different characteristics and properties of dental materials
2. Learn about the dental materials used in dental treatment on exposure of microgravity

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-14. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What are dental materials used in microgravity for dental treatment?

Why different kind of materials used in dental restoration for astronauts?

Unit 16- Oral cavity physiology and adverse effect of aerospace environments and its prevention

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about alternation in oral physiology in microgravity condition.
2. How to prevent these adverse effects

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-15. Text and fundamental of aeronautic dentistry (Book)
2. Dr. Balwant Rai, BDS,MS,: Human Oral Cavity in Simulated Microgravity: New

Prospects, Adv. in

Med. Dent. Sci., 3(2): 35-39, 2009
(www.insipub.com/aensi/amds/2009/35-39.pdf)

DISCUSSION TOPIC

What are physiological effects on oral physiology in microgravity? How to prevent temporary?

What are physiological effects on oral physiology in microgravity? How to prevent permanently?

Unit 17- Effect of aerospace environment on saliva, tooth, oral microflora, oral cavity neuro-physiology

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about alternation in oral fluids such as saliva, GCF, tooth, oral microflora, neuro-physiology in microgravity condition.
2. How to prevent these adverse effects

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-16. Text and fundamental of aeronautic dentistry (Book)
2. Dr. Balwant Rai, BDS,MS,: Human Oral Cavity in Simulated Microgravity: New Prospects, Adv. in Med. Dent. Sci., 3(2): 35-39, 2009 (www.insipub.com/aensi/amds/2009/35-39.pdf)

DISCUSSION TOPIC

What are adverse effects on oral fluids in microgravity conditions? How to prevent temporary?

What are adverse effects on oral fluids in microgravity conditions? How to prevent

temporary?

Unit 18- Oral surgery and oral medicine in aerospace environment

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about surgical techniques and medicine used to treat the oral diseases.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-17.Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What types of surgical techniques are used to treat the oral diseases in microgravity conditions?

Why laser surgery is more efficient as compared to manual surgery in microgravity conditions?

Unit 19- Restorative dentistry in aerospace environment

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about restorative techniques and instruments used to treat the oral diseases.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-18.Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What types of restorative techniques are used to treat the oral diseases in microgravity conditions?

What types of restorative instruments are used to treat the oral diseases in microgravity conditions?

Unit 21- Dental anaesthesiology in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about dental anesthesia and techniques used in microgravity conditions.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-20.Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What types of dental anesthesia's are used to treat the oral diseases in microgravity conditions?

What types of dental techniques are used to treat the oral diseases in microgravity conditions?

Unit 22- Laser surgery in Aerospace environment

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn use of laser surgery for dental treatment in microgravity conditions.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-21.Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What is the use of laser surgery in dental

treatment in microgravity conditions?

Why laser surgery is more efficient as compared to manual surgery in microgravity conditions?

Unit 23- Oral exercise for prevention of bone loss and other adverse effects

Learning Objectives

Upon completion of this unit, you will:

1. Learn different types of exercises to prevent the oral cavity bone loss in microgravity conditions.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-22. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What are types of exercise used in microgravity conditions to prevent the bone loss?

Why oral exercise is important to prevent oral bones loss?

Unit 24- Oral Imaging in Aerospace Environment

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about different kinds of imaging techniques used in oral diagnosis in microgravity.

Reading Assignment

1. Rai B, Kaur J. Chapter-23. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

What kinds of imaging techniques are used in oral diagnosis in microgravity?

Why oral imaging is important in aeronautic dentistry?

Unit 25- Oral Hygiene in aerospace environment

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about importance of oral hygiene in microgravity.

Reading Assignment

2. Rai B, Kaur J. Chapter-24. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

Why oral hygiene is important for astronaut in microgravity?

What's the role of aeronautic dentist in space mission?

Unit 26- Oral infection in microgravity

LEARNING OBJECTIVES

Upon completion of this unit, you will:

1. Learn about how oral infection becomes real medical emergency in microgravity.

READING ASSIGNMENT

1. Rai B, Kaur J. Chapter-25. Text and fundamental of aeronautic dentistry (Book)

DISCUSSION TOPIC

How oral infection becomes real medical emergency in microgravity?

Why spread of infection is faster in microgravity?

Unit 27- Ethics and Laws for aeronautic dentists and aeronautic dental researchers