



MSc CLINICAL EXERCISE SCIENCE

PROGRAMME BOOK
2019/2020 ACADEMIC SESSION

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INTRODUCTION TO AMDI

The preceding decade has witnessed numerous new developments with regards to medical knowledge, medical technology and healthcare. To avoid being left behind, it is imperative that we initiate steps to be more innovative in exploiting these new advances for the benefit of patients, particularly in Malaysia and throughout the Asia Pacific. To realise this aim, the Malaysian government has taken the initiative in establishing the Advanced Medical and Dental Institute (AMDI) which will function to manifest these aspirations particularly for the benefit of the public in the northern part of Peninsular Malaysia as well as the whole of Malaysia.

The main mission of AMDI is to function as the prime catalyst in producing specialists and scientists in both medical and dental fields, who are competent, holistic and contemporary in their practice and profession as well as capable of generating novel discoveries. AMDI adopts a comprehensive approach, embracing both the clinical and the pure sciences in all aspects of operationalisation. It is envisioned that this “cross fertilisation” philosophical approach will foster a fertile and inventive environment that increases the probability of new discoveries in both dentistry and medicine. The AMDI infrastructure has been designed to facilitate this cross-fertilisation approach.

The operational structure of AMDI, encompassing both clinical services and administration, classifies a functioning entity as a “cluster” consisting of specialists from various disciplines and specialisations. The collaborative approach, involving both specialists and researchers, is in tandem with the aspirations of USM, i.e. raising the standards of research and teaching activities. AMDI will place great emphasis on medical and dental studies at the postgraduate level. The postgraduate medical and dental studies programme is supported by the teaching faculty of all clusters. The selection of courses to be offered also take into consideration services yet to be provided by the Malaysian Health Ministry so that there will be no overlapping of programmes.

With regards to academic programmes, AMDI will focus on postgraduate programmes such as Master of Medicine (specialisation), Master of Science (coursework mode) and research mode programmes at master’s and doctorate levels. AMDI will initiate efforts to offer sub-specialisation medical courses such as Master Specialisation and in medical sub-categories, e.g. Master of Medical Specialisation (Infectious Diseases). AMDI also plans to offer new programmes at Master’s and doctorate levels as well as new “sandwich” programme, i.e., M. Med/PhD which is envisioned as the products of the integration of pure and clinical science approach propounded by AMDI.

WELCOMING REMARKS

Dear all new students,

As the Director of Advanced Medical and Dental Institute (AMDI), it gives me a great pleasure to extend a warm welcome to all our new Clinical Exercise Science postgraduate students. Welcome to Universiti Sains Malaysia, welcome to Advanced Medical and Dental Institute (AMDI) and, to our international students, welcome to Malaysia. As a new student in AMDI, you have many great and exciting year ahead of you.

MSc Clinical Exercise Science programme which is a brainchild of AMDI and is fairly new coursework programme started in 2017, and one of a kind to be offered in Malaysia so far. This unique postgraduate programme was designed to produce health practitioners who are competent in clinical exercise field specifically in treating and consulting clinical population with diverse clinical background.

It is the aim of the programme to prepare the candidates to become clinical exercise specialist that will assume a variety of roles in academia, industry and government. As a graduate of this versatile postgraduate program, you will be prepared to work along side with other health practitioners in the prevention and management of chronic disease and conditions. In addition, you will also be prepared to work with the sporting community such as fitness and sports rehabilitation.

I am hoping that you will make the best of all the high-end clinical equipments and expertise available in AMDI and USM and enjoy the experience of pursuing MSc. Clinical Exercise Science programme. May this be the stepping stone towards advancement in the future career in clinical exercise discipline.

Last, but certainly not the least, thank you for choosing Advanced Medical and Dental Institute (AMDI), Universiti Sains Malaysia and best of luck with your studies. We sincerely hope you will stay here for many good years to come as part of AMDI community.

Thank you.

PROF. DR. SYED AZHAR SYED SULAIMAN
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TCE 504 (Applied Exercise Physiology)

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TCE 505 (Principles of Exercise Testing and Prescription)

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TCE 506 (Perspectives and Practice in Health Promotion)

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TCE 507 (Clinical Exercise Physiology)

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TCE 508 (Exercise Programming for Clinical Populations)

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TCE 509 (Health Psychology)

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TCE 510 (Injuries and Rehabilitation)

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TCE 511 (Clinical Exercise Practicum)

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TMR 504 (Professional and Research Skills)

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ACADEMIC CALENDAR - ACADEMIC SESSION 2019/2020
Registration for New Postgraduate Students

| SEMESTER 1 (SEPTEMBER INTAKE 2019) | | | |
|------------------------------------|-----------------------|----------------------|----------------------|
| USM IPS@KL | Main Campus, Penang | Engineering Campus | Health Campus |
| 3 September 2019 | 5 – 7 September 2019 | 4 – 5 September 2019 | 4 – 5 September 2019 |
| SEMESTER 2 (FEBRUARI INTAKE 2020) | | | |
| USM IPS@KL | Main Campus, Penang | Engineering Campus | Health Campus |
| 10 February 2020 | 14 – 15 February 2020 | 13 February 2020 | 13 February 2020 |

Note: The above Registration Date are applicable for Course work and Mixed Mode Programmes only. Candidates for **Research Mode Programmes can register anytime** at Institute of Postgraduate Studies.

| SEM | WEEK | ACTIVITY | DATE | REMARKS | |
|---|---|--|--|---|------------------------------------|
| ONE | 1 | Teaching & Learning (T&L - 7 Weeks) | Monday, 09.09.2019 - Sunday, 15.09.2019 | | |
| | 2 | | Monday, 16.09.2019 - Sunday, 22.09.2019 | 16.09.2019, Monday - Malaysia Day | |
| | 3 | | Monday, 23.09.2019 - Sunday, 29.09.2019 | | |
| | 4 | | Monday, 30.09.2019 - Sunday, 06.10.2019 | | |
| | 5 | | Monday, 07.10.2019 - Sunday, 13.10.2019 | | |
| | 6 | | Monday, 14.10.2019 - Sunday, 20.10.2019 | | |
| | 7 | | Monday, 21.10.2019 - Sunday, 27.10.2019 | 27.10.2019, Sunday - Deepavali** | |
| | 8 | Mid Semester Break | Monday, 28.10.2019 - Sunday, 03.11.2019 | 28.10.2019, Monday - Deepavali** (Replacement) | |
| | 9 | Teaching & Learning (T&L - 6 Weeks) | Monday, 04.11.2019 - Sunday, 10.11.2019 | 09.11.2019, Saturday - Prophet Muhammad's Birthday | |
| | 10 | | Monday, 11.11.2019 - Sunday, 17.11.2019 | 11 & 12.11.2019, Monday & Tuesday - Sultan of Kelantan's Birthday (Kelantan) | |
| | 11 | | Monday, 18.11.2019 - Sunday, 24.11.2019 | | |
| | 12 | | Monday, 25.11.2019 - Sunday, 01.12.2019 | | |
| | 13 | | Monday, 02.12.2019 - Sunday, 08.12.2019 | | |
| | 14 | | Monday, 09.12.2019 - Sunday, 15.12.2019 | | |
| | 15 | Monday, 16.12.2019 - Sunday, 22.12.2019 | | | |
| | 16 | Revision Week | Monday, 23.12.2019 - Sunday, 29.12.2019 | 25.12.2019, Wednesday - Christmas | |
| | 17 | Examination (3 Weeks) | Monday, 30.12.2019 - Sunday, 05.01.2020 | 01.01.2020, Wednesday - New Year of 2020 | |
| | 18 | | Monday, 06.01.2020 - Sunday, 12.01.2020 | | |
| | 19 | | Monday, 13.01.2020 - Sunday, 19.01.2020 | | |
| | 20 | Mid Semester Break (4 Weeks) | Monday, 20.01.2020 - Sunday, 26.01.2020 | 25 & 26.01.2020, Saturday & Sunday - Chinese New Year** | |
| | 21 | | Monday, 27.01.2020 - Sunday, 02.02.2020 | 28.01.2020, Tuesday until 13.02.2020, Thursday - PPJJ Intensive Course | |
| | 22 | | Monday, 03.02.2020 - Sunday, 09.02.2020 | 08.02.2020, Saturday - Thaipusam ** | |
| | 23 | | Monday, 10.02.2020 - Sunday, 16.02.2020 | 28.01.2020, Tuesday until 13.02.2020, Thursday - PPJJ Intensive Course | |
| TWO | 1/24 | Teaching & Learning (T&L - 7 Weeks) | Monday, 17.02.2020 - Sunday, 23.02.2020 | | |
| | 2/25 | | Monday, 24.02.2020 - Sunday, 01.03.2020 | | |
| | 3/26 | | Monday, 02.03.2020 - Sunday, 08.03.2020 | | |
| | 4/27 | | Monday, 09.03.2020 - Sunday, 15.03.2020 | | |
| | 5/28 | | Monday, 16.03.2020 - Sunday, 22.03.2020 | | |
| | 6/29 | | Monday, 23.03.2020 - Sunday, 29.03.2020 | | |
| | 7/30 | | Monday, 30.03.2020 - Sunday, 05.04.2020 | | |
| | 8/31 | Mid Semester Break | Monday, 06.04.2020 - Sunday, 12.04.2020 | | |
| | 9/32 | Teaching & Learning (T&L - 7 Weeks) | Monday, 13.04.2020 - Sunday, 19.04.2020 | | |
| | 10/33 | | Monday, 20.04.2020 - Sunday, 26.04.2020 | 24.04.2020, Friday - Ramadhan (Kelantan) | |
| | 11/34 | | Monday, 27.04.2020 - Sunday, 03.05.2020 | 01.05.2020, Friday - Labour Day | |
| | 12/35 | | Monday, 04.05.2020 - Sunday, 10.05.2020 | 07.05.2020, Thursday - Wesak Day 10.05.2020, Sunday - Nuzul Al-Quran | |
| | 13/36 | | Monday, 11.05.2020 - Sunday, 17.05.2020 | 11.05.2020, Monday - Nuzul Al-Quran (Replacement) | |
| | 14/37 | | Monday, 18.05.2020 - Sunday, 24.05.2020 | 24.05.2020, Sunday - Eid-ul Fitr** | |
| | 15/38 | Monday, 25.05.2020 - Sunday, 31.05.2020 | 25.05.2020, Monday - Eid-ul Fitr** 26.05.2020, Tuesday - Eid-ul Fitr** (Replacement) 30 & 31.05.2020, Saturday & Sunday - Pesta Kaamatan (Sabah) | | |
| | 16/39 | Revision Week | Monday, 01.06.2020 - Sunday, 07.06.2020 | 01 & 02.06.2020, Monday & Tuesday, Hari Gawai (Sarawak) 03.06.2020, Wednesday - PPJJ Examination | |
| | 17/40 | Examination (3 Weeks) | Monday, 08.06.2020 - Sunday, 14.06.2020 | | |
| 18/41 | Monday, 15.06.2020 - Sunday, 21.06.2020 | | | | |
| 19/42 | Monday, 22.06.2020 - Sunday, 28.06.2020 | | | | |
| "MIXED / COURSE BUILDING / LONG VACATION" | 20/43 | Long Vacation / Industrial Training / IKSCP (10 Weeks) | Monday, 29.06.2020 - Sunday, 05.07.2020 | | |
| | 21/44 | | Monday, 06.07.2020 - Sunday, 12.07.2020 | 07.07.2020, Tuesday - Penang Heritage 11.07.2020, Saturday - Penang Governor's Day | |
| | 22/45 | | Monday, 13.07.2020 - Sunday, 19.07.2020 | | |
| | 23/46 | | Monday, 20.07.2020 - Sunday, 26.07.2020 | | |
| | 24/47 | | T&L | Monday, 27.07.2020 - Sunday, 02.08.2020 | 31.07.2020, Friday - Eid-ul adha** |
| | 25/48 | | Monday, 03.08.2020 - Sunday, 09.08.2020 | | |
| | 26/49 | | *Examination | Monday, 10.08.2020 - Sunday, 16.08.2020 | |
| | 27/50 | | Monday, 17.08.2020 - Sunday, 23.08.2020 | 20.08.2020, Thursday - Awal Muharram | |
| | 28/51 | | Monday, 24.08.2020 - Sunday, 30.08.2020 | | |
| | 29/52 | | Monday, 31.08.2020 - Sunday, 06.09.2020 | 31.08.2020, Monday - National Day | |

PROGRAMME SCHEDULE

| SEMESTER | DURATION |
|---|--|
| Semester 1 | 9 September 2019 – 16 February 2020 |
| Modules taught: TCE 501: Pathophysiology of Non-communicable Diseases TCE 502: Nutrition in Health and Diseases TCE 503: Applied Psychology TCE 504: Applied Exercise Physiology TCE 505: Principles of Exercise Testing and Prescription TMR 504: Professional and Research Skills | 9 September 2019 – 22 December 2019 |
| Revision | 23 December – 29 December 2019 |
| End of semester Exam | 30 December 2019 – 19 January 2020 |
| Mid Semester Break | 20 January – 16 February 2020 |
| Semester II | 17 February – 28 June 2020 |
| Modules taught: TCE 506: Perspectives and Practice in Health Promotion TCE 507: Clinical Exercise Physiology TCE 508: Exercise Programming for Clinical Populations TCE 509: Health Psychology TCE 510: Injuries and Rehabilitation | 17 February – 31 May 2020 |
| Revision | 1 June – 7 June 2020 |
| End of semester exam | 8 June – 28 June 2020 |
| Long Vacation Course (KSCP) | 29 June – 6 September 2020 |
| TCE 511: Clinical Exercise Practicum | 29 June – 6 September 2020 |

PROGRAMME STRUCTURE

| | Code | Course (Module) | Type | Unit |
|------------------------------------|---------|---|------|-----------|
| Semester 1 | | | | |
| Lecture/practical | TCE 501 | Pathophysiology of Non-communicable Diseases | Core | 3 |
| | TCE 502 | Nutrition in Health and Diseases | Core | 3 |
| | TCE 503 | Applied Psychology | Core | 3 |
| | TCE 504 | Applied Exercise Physiology | Core | 3 |
| | TCE 505 | Principles of Exercise Testing and Prescription | Core | 3 |
| | TMR 504 | Professional and Research Skills | Core | 3 |
| Total unit | | Total unit to register | | 18 |
| Semester 2 | | | | |
| Lecture/practical | TCE 506 | Perspectives and Practice in Health Promotion | Core | 2 |
| | TCE 507 | Clinical Exercise Physiology | Core | 3 |
| | TCE 508 | Exercise Programming for Clinical Populations | Core | 4 |
| | TCE 509 | Health Psychology | Core | 3 |
| | TCE 510 | Injuries and Rehabilitation | Core | 3 |
| Total unit | | Total unit to register | | 15 |
| Long Vacation Course (KSCP) | | | | |
| Clinical Exercise Practicum | TCE 511 | Clinical Exercise Practicum | Core | 8 |
| | | Total unit to register | | 8 |
| Total unit | | | | 41 |

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MODULES AND MODULE COORDINATORS

| SEMESTER I | | |
|--|-------------|-----------------------------------|
| MODULE | UNIT | MODULE COORDINATORS |
| TCE 501 (Pathophysiology of Noncommunicable Diseases and Obesity) | 3 | Dr. Salbiah Binti Isa |
| TCE 502 (Nutrition in Health and Diseases) | 3 | Dr. Noorsuzana Binti Mohd Shariff |
| TCE 503 (Applied Psychology) | 3 | Dr. Mohd Afifuddin Bin Mohamad |
| TCE 504 (Applied Exercise Physiology) | 3 | Dr. Hazwani Binti Ahmad Yusof |
| TCE 505 (Principles of Exercise Testing and Perscription) | 3 | Dr. Ooi Cheong Hwa |
| TMR 504 (Research and Professional Skills) | 3 | Dr. Rafidah Binti Zainon |

| SEMESTER II | | |
|--|-------------|---|
| MODULE | UNIT | MODULE COORDINATORS |
| TCE 506 (Perspectives and Practice in Health Promotion) | 2 | Dr. Rohayu Binti Hami |
| TCE 507 (Clinical Exercise Physiology) | 3 | Dr. Noor Mastura Binti Mohd Mujar |
| TCE 508 (Exercise Programming for Clinical Populations) | 4 | Dr. Ooi Cheong Hwa |
| TCE 509 (Health Psychology) | 3 | Dr. Mohammad Farris Iman Leong Bin Abdullah |
| TCE 510 (Injuries and Rehabilitation) | 3 | Dr. Hazwani Binti Ahmad Yusof |
| LONG VACATION SEMESTER BREAK (KSCP) | | |
| MODULE | UNIT | MODULE COORDINATORS |
| TCE 511 Clinical Exercise Practicum | 8 | Dr. Ooi Cheong Hwa |

MODULE SYNOPSES

TCE 501

Pathophysiology of Non-Communicable Diseases and Obesity (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To describe the pathophysiology of certain diseases or conditions as well as to evaluate the relevance of biomarkers.
2. To understand the physiological changes that occur with wound healing and ageing as well as the impact of exercise.
3. To explain the interactions among exercise, nutrients, supplements, herbal products and drugs.

SYNOPSIS

Candidates will be taught the pathophysiology (including molecular mechanisms) of non-communicable diseases and obesity as well as interactions with exercise.

| | Topics |
|-----|---|
| 1. | Pathophysiology of metabolic conditions |
| 2. | Pathophysiology of cardiovascular condition |
| 3. | Pathophysiology of respiratory conditions |
| 4. | Pathophysiology of rheumatological & musculoskeletal conditions |
| 5. | Pathophysiology of cancer |
| 6. | Pathophysiology of neurological conditions |
| 7. | Epidemiology of paediatric conditions Cerebral palsy, Down's syndrome, and other intellectual disabilities |
| 8. | Wound healing and post-operative care |
| 9. | Physiology of aging |
| 10. | An overview of drugs, nutrients, herbs and exercise interactions |

REFERENCES

1. Flomenbaum N. E. [et al.] Goldfrank's Toxicologic Emergencies. McGraw-Hill Professional. Latest edition: 2006 (Available at IPPT, In Order, ISBN:9780071437639).
2. Greenberg, M. [et al.] Occupational, Industrial, and Environmental Toxicology. Mosby. Edisi terbaru: 2003 (Available at Health campus/IPPT - In Order, ISBN:9780815139294).
3. Harbison R.D. Hamilton & Hardy's Industrial Toxicology. Mosby. Latest edition: 5th edition, 1998 (Available at IPPT, In Order, ISBN:9780815141815).
4. Lewis R.J. Rapid Guide to Hazardous Chemicals in the Workplace. John Wiley & Sons. Latest edition: 2000 (Available at Transkrian / IPPT, In Order, ISBN:9780471355427).
5. Ladou J. Current Occupational & Environmental Medicine. McGraw-Hill Medical. Latest edition: 2006 (Available at IPPT, In Order, ISBN:9780071443135).
6. Ming-Ho, Y. and Landis W. G. Introduction to Environmental Toxicology: Impacts of Chemicals upon Ecological Systems. CRC. Latest edition: 2003 (Available at Transkrian /USM, ISBN:9781566706605).
7. Ming-Ho, Y. Environmental Toxicology: Biological and Health Effects of Pollutants. Taylor and Francis. Latest edition: 2004 (Available at IPPT, In Orders ISBN:9781566706704).
8. Occupational Safety and Health Act 1994: Regulations & Orders (as at 25th June 2004). International Law Book Series Latest edition: 2007 (To order).
9. Pohanish P.R. and Greene S.A. Hazardous Chemical Safety Guide for the Machining and Metalworking Industries. McGraw Hill. Latest edition: Nov 1998 (Available at IPPT – In Order, ISBN:9780070504998).
10. Rosenstock L. [et al.] Textbook of Clinical Occupational and Environmental Medicine. Saunders. Latest editions: 2004 (Available at IPPT, In Order, ISBN:9780721689746).

TCE 502

Nutrition in Health and Disease (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To evaluate the influence of socioeconomic, cultural, and psychological factors on food and nutrition behavior; apply those influences in planning and calculating menus for healthy persons; and in disease prevention and management.
2. To use computer based nutrient analyses and food composition tables in the calculation of various diets and menus to determine their nutrient adequacy; and utilize nutrition assessment data to determine health or strategies for disease prevention and management.
3. To apply the principles of nutrition and dietetics to prevent diseases and manage non-communicable diseases.

SYNOPSIS

At the end of the course the students will be able to apply the principles of nutrition and dietetics to prevent and manage non-communicable diseases including obesity. In addition, students will be able to conduct nutritional screening and evaluate the nutritional status of the normal and clinical populations.

| | Topics |
|-----|--|
| 1. | Basic nutrition and its metabolism |
| 2. | Nutrition and exercise |
| 3. | Dietary assessment and planning reference tools: <ol style="list-style-type: none">a. Dietary reference intakesb. Dietary guidelines for Malaysiansc. Myplated. Nutrition labelse. Exchange system |
| 4. | Nutritional counselling: <ul style="list-style-type: none">• Sociodemographic and cultural influence on nutrition |
| 5. | Energy needs, equations to estimate the energy needs for Malaysians |
| 6. | Obesity and weight management <ul style="list-style-type: none">• Therapeutic guidelines for lifestyle changes (TLC) |
| 7. | Metabolic syndrome |
| 8. | Diabetes <ul style="list-style-type: none">• glycemic index and glycemic load |
| 9. | Hypertension and Heart diseases <ul style="list-style-type: none">• Dietary approaches to stop hypertension (DASH) |
| 10. | Cancer <ul style="list-style-type: none">• American Cancer Society (ACS) |
| 11. | Bone diseases (Osteoporosis, Osteomalacia, Arthritis, Gout) |
| 12. | Allergies |

| | |
|-----|---|
| 13. | Eating disorders |
| 14. | Specific conditions 1: <ul style="list-style-type: none"> • Pregnancy and pediatrics |
| 15. | Specific conditions 2: <ul style="list-style-type: none"> • Post-operative and aging |
| 16. | Fad diets |
| 17. | Panel discussion: Nutrition and non-communicable diseases |
| 18. | Small group discussions on case studies and presentation |

REFERENCES

1. Mahan K, Escott-Stump S, and Raymond, J. Krause's Food and the Nutrition Care Process. 13th Edition. Saunders/Elsevier, 2012.
2. Whitney, E., Rolfes, S., Hammond, G., & Piché, L. Understanding Nutrition 1st Canadian Edition. Toronto: Nelson. 2013.
3. Ross AC, Caballero B, Cousins RJ, Tucker KL & Ziegler TR. Modern Nutrition in Health and Disease. Lippincott Williams and Wilkins, 11th Edition, 2012 ISBN 13: 9781605474618
4. Marcia Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth, Nutrition Therapy and Pathophysiology Cengage Learning; 2nd Edition. 2010
5. Ruth A Roth, Nutrition & Diet therapy, Cengage Learning; 11th Edition. 2013
6. Betsy Hornick, Roberta Larson Duyff, Alma Flor Ada. American Dietetic Association Complete Food and Nutrition Guide, Revised and Updated 4th Edition, Houghton Mifflin Harcourt; 4th Revised and Updated Edition. 2012
7. Yoshinori Mine PhD, Kazuo Miyashita, Fereidoon Shahidi. Nutrigenomics and Proteomics in Health and Disease: Food Factors and Gene Interactions. Hui: Food Science and Technology (Book 13), Wiley-Blackwell; 1st Edition, 2009
8. Frances Sienkiewicz Sizer, Leonard A. Piché, Eleanor Noss Whitney. Nutrition: Concepts and Controversies. Nelson Education limited, 2nd Edition, 2012

TCE 503

Applied Psychology (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To demonstrate the application of fundamental theories in psychology for behavioral intervention.
2. To relate psychological theories and underlying concepts of behavioral intervention in clinical settings.
3. To be able to evaluate and critique the appropriate approaches for individualized behavioral modification programs in clinical settings.

SYNOPSIS

The aim of this module is to expand students' understanding of psychological theories in various approaches employed in behavioral intervention programs. Specifically, students will learn what possible obstacles that could render some intervention ineffective are and how they can capitalize on patients' or clients' strengths to help them succeed in modifying some of the behaviors that might hinder them from living a healthy lifestyle.

| | Topics |
|----|--|
| 1. | Introduction to Psychology: <ul style="list-style-type: none">• Psychology response to injury (biopsychosocial & cognitive appraisal models) |
| 2. | The Brain: <ul style="list-style-type: none">• The brain – regions & neurotransmitters• The mind |
| 3. | Consciousness: <ul style="list-style-type: none">• Stages and functions of sleep• Altering consciousness |
| 4. | Learning: <ul style="list-style-type: none">• Classical (Pavlovian) & Operational Conditioning• Modelling/Observational Learning |
| 5. | Remembering/Memory: <ul style="list-style-type: none">• Types of Memory• Interference• Process of Remembering |
| 6. | Motivation: <ul style="list-style-type: none">• Theories of motivation• Self-regulation; goal-setting theory |
| 7. | Emotions & Social Cognitive Theory: <ul style="list-style-type: none">• Identifying, understanding and managing emotions• Self-efficacy & self-monitoring |
| 8. | Developmental Psychology/Theories: <ul style="list-style-type: none">• Prenatal development – childhood – adolescence – emerging adulthood – adulthood – aging• Erikson's stages of psychosocial development |
| 9. | Exercise & Cognitive Functions: <ul style="list-style-type: none">• Models and mediators of exercise effects on cognition• Exercise effects on mental resources and reserves• Exercise and physical resources and reserves influencing cognition• Exercise, chronic disease and cognition |

| | |
|-----|--|
| 10. | Anxiety & Depression, Eating Disorders & Substance Abuse |
| 11. | Positive Psychology |
| 12. | Therapies in Psychology: <ul style="list-style-type: none"> • Cognitive Behavioral Therapy • Classical Conditioning Techniques • Psychotherapies and other behaviour modification therapies |

REFERENCES

1. Laura A. King 2014. The Science of Psychology: An Appreciative View, Third edition. McGraw Hill Education, New York NY
2. Kate Hefferon 2013. Positive Psychology and The Body: The somatopsychic side to flourishing. McGraw Hill Education, New York NY
3. Waneen W. Spirduso, Leonard W. Poon & Wojtek Chodzko-Zajko Eds. 2008. Exercise and Its Mediating Effects on Cognition. Human Kinetics.
4. Charles Duhigg 2012. The Power of Habit: Why we do what we do in life and business. Random House, Baltimore MD
5. Paula E. Hartman-Stein & Asenath La Rue Eds. 2011. Enhancing Cognitive Fitness in Adults. Springer New York.
6. Susan Krauss Whitbourne & Richard P. Halgin 2014. Abnormal Psychology: Clinical Perspectives on Psychological Disorders, Seventh Edition. McGraw Hill Education, New York NY.

TCE 504

Applied Exercise Physiology (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To describe the acute and chronic physiological responses during exercise.
2. To discuss the integration of various physiological systems during exercise.
3. To explain the underlying physiological adaptations and maladaptations of exercise.

SYNOPSIS

This module will describe the acute and chronic physiological responses during exercise onto the human body. The interactions of various physiological systems of the human body to support the exercise requirements will also be discussed in this module. In addition, students will also be highlighted to the short and long term physiological adaptations and maladaptations of exercise.

| | Topics |
|----|--|
| | Molecular Exercise Physiology |
| 1. | The cellular life span |
| 2. | Energy turnover and substrate utilization <ul style="list-style-type: none">• Exercise and protein metabolism• Exercise and carbohydrate metabolism• Exercise and lipid metabolism |
| 3. | Genetics, epigenetics and human physical performance |
| | The Muscle and Its Contraction |
| 4. | Form and functions of the skeletal muscle <ul style="list-style-type: none">• Skeletal muscle architecture• Neuromuscular activation• Mechanical efficiency of muscle contraction |
| 5. | Neuromuscular performance and exercise <ul style="list-style-type: none">• Muscular training response and adaptations• Muscular fatigue• Muscle damage and repair |
| | Cardiovascular and Pulmonary Adaptation to Exercise |
| 6. | Hemodynamics <ul style="list-style-type: none">• Regulation of circulation at rest and during exercise• Cardiac output and transportation of oxygen |
| 7. | Pulmonary ventilation <ul style="list-style-type: none">• Responses at rest and during exercise• Training induced alterations in the ventilatory response to exercise |
| | Fatigue |
| 8. | Exercise induced fatigue <ul style="list-style-type: none">• Central limitation• Peripheral limitation |

| | |
|-----|--|
| | <ul style="list-style-type: none"> • Metabolic factors in muscle fatigue • Measurements of human muscle fatigue |
| | Environmental Physiology |
| 9. | Exercise in a heat stress environment |
| 10. | Exercise in a cold environment |
| 11. | Exercise at high altitude |
| | Exercise Issues for Children, Women, and Aging Population |
| 12. | Children's exercise physiology <ul style="list-style-type: none"> • Growth and exercise • Cardiorespiratory and neuromuscular responses to exercise |
| 13. | Physiology of exercising female <ul style="list-style-type: none"> • Menstrual cycle and pregnancy menopause • Special consideration of exercise for female |
| 14. | Physiology of aging in active and sedentary human <ul style="list-style-type: none"> • Age related physiological changes • Cardiorespiratory and neuromuscular responses to exercise • Energy expenditure |

REFERENCES

1. Nigel A.S. Taylor and herbert Groeller (eds) 2008. Physiological Bases of Human Performance during Work and Exercise. Churchill Livingstone Elsevier.
2. Charles M. Tipton, Michael N. Sawka, Charlotte A. Tate (eds) 2006. ACSM's Advanced Exercise Physiology. Lippincott Williams and Wilkins
3. William D. McArdle, Frank I. Katch and Victor L. Katch (2009). Exercise Physiology: Energy, Nutrition and Human Performance. 7th Ed. Lippincott Williams and Wilkins

TCE 505

Principles of Exercise Testing and Prescription (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To explain the importance of exercise testing and prescription.
2. To identify the benefit of exercise testing for health promotion.
3. To discuss various exercise testing protocols and procedures involved for determination of health and fitness.

SYNOPSIS

The aim of this module is to develop students' skills in exercise testing for the determination of health and fitness and prescribing the general community with a safe and effective exercise program.

| | Topics |
|-----|---|
| 1. | An overview of Exercise Testing and Prescription |
| 2. | General Health Evaluation and Risk Screening (Medical History) |
| 3. | Cardiopulmonary Resuscitation (CPR) |
| 4. | Principles of Exercise Testing |
| 5. | Metabolic Equations |
| 6. | Body Composition Assessment |
| 7. | Testing and Prescription for Cardiorespiratory Fitness |
| 8. | Testing and Prescription for Flexibility, Muscular Strength and Endurance |
| 9. | Testing and Prescription for Children, Disable and Aging Population |
| 10. | Graded Exercise Testing and Stress ECG |
| 11. | Exercise Prescription for Clinical Populations |

REFERENCES

1. American College of Sports Medicine 2010. ACSM's Resource Manual for Guidelines for exercise testing and prescription, 6th Ed. Lippincott, Williams and Wilkins, Baltimore MD
2. James S. Skinner 2005. Exercise testing and exercise prescription for special cases. 3rd Ed. Lippincott Williams and Wilkins. Baltimore MD
3. Larry J. Durstine and Geoffrey E. Moore 2009. ACSM's exercise management for persons with chronic diseases and disabilities. 3rd Ed. Human Kinetics. Champaign, IL
4. Dunbar, C.C. and Saul, B (2009). ECG Interpretation for the Clinical Exercise Physiologist. Lippincott, Williams and Wilkins, Baltimore MD.

TCE 506

Perspectives and Practice in Health Promotion (2 uits)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To demonstrate an understanding of the changing patterns of disease.
2. To understand the importance of lifestyle factors in the aetiology of particular diseases/conditions categorised as 'lifestyle' or non-communicable diseases.
3. To understand and apply the models of health seeking behaviour in health promotion Activities.
4. To demonstrate an understanding of the social and ethical issues in health promotion.

SYNOPSIS

Lectures focusing on the epidemiology of 'lifestyle' diseases as well as the current models underpinning practices in health promotion will be delivered. The candidates will evaluate the different models used in health promotion under different cultural contexts. Group work is used as part of the assessment to emphasize the importance of teamwork in managing health issues.

| | Topics |
|----|---|
| 1. | The changing patterns of diseases pre-antibiotic and post-antibiotic era |
| 2. | Risk factors of Lifestyle related diseases |
| 3. | Prevention of diseases (primary, secondary and tertiary prevention) |
| 4. | Theories of Health Behaviour <ul style="list-style-type: none">• currently used models• influence of society and culture |
| 5. | Ethics in health promotion |
| 6. | Effects of smoking, alcohol and other lifestyle habits detrimental to health |
| 7. | Evaluating an existing health promotion activity |
| 8. | Designing a health promotion project either for an individual or a community |

REFERENCES

1. Glanz K, Rimer BK, Viswanath K (2008). Health Behavior and Health Education: Theory, Research and Practice. San Francisco: Jossey-Bass Publications

TCE 507

Clinical Exercise Physiology (3 nits)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To describe the acute and chronic physiological responses during exercise among clinical population.
2. To discuss the health appraisal, risk assessment and safety of exercise for clinical population.
3. To explain the physiological adaptations and maladaptations of exercise in clinical population.
4. To discuss the influence of pharmacological agent on exercise in clinical population.

SYNOPSIS

This module will describe the physiological responses and adaptations during exercise among the clinical population. Students will also be exposed to the application of various exercise principles for clinical populations in order to minimize any associated risk involve during exercise. In addition, students will also be exposed to the influence of pharmacological agents to exercise in clinical populations.

| | Topics |
|----|--|
| 1. | Exercise is Medicine |
| 2. | General health evaluation and risk screening |
| | Exercise and Metabolic Disorder |
| 3. | Obesity <ul style="list-style-type: none">• Physical activity and exercise continuum• Exercise and biological determinants of obesity• Exercise in the prevention and treatment of obesity with exercise |
| 4. | Diabetes <ul style="list-style-type: none">• Defects in Metabolism and Insulin Resistance• Prevention of Type 2 Diabetes Through Exercise Training Managing exercise for type 2 diabetes |
| 5. | Hyperlipidemia <ul style="list-style-type: none">• Prevention of hyperlipidemia via exercise• Managing exercise for hyperlipidemia |
| | Exercise and Cardiopulmonary Diseases |
| 6. | Chronic Heart Failure <ul style="list-style-type: none">• Clinical considerations of exercise for chronic heart failure• Exercise recommendations for chronic heart failure |
| 7. | Hypertension <ul style="list-style-type: none">• Clinical consideration of exercise for hypertension• Prevention and treatment of hypertension with exercise |

| | |
|-----|--|
| 8. | Chronic Obstructive Pulmonary Disease (COPD) & Asthma <ul style="list-style-type: none"> • Clinical consideration of exercise for COPD and Asthma • Exercise recommendations for COPD and asthma |
| | Exercise and the Immune System |
| 9. | Cancer <ul style="list-style-type: none"> • Exercise and Immunity • Exercise recommendations for cancer patients |
| | Neurological, Bones and Joints Disorder |
| 10. | Multiple Sclerosis |
| 11. | Spinal cord injury |
| 12. | Arthritis <ul style="list-style-type: none"> • Prevention of arthritis with exercise intervention • Exercise recommendations for arthritis |
| 13. | Osteoporosis <ul style="list-style-type: none"> • Prevention of osteoporosis with exercise intervention • Exercise recommendations for osteoporosis |
| 14. | Effect of medications on exercise programs |
| 15. | Managing drug prescription in exercise program for clinical population |

REFERENCES

1. Cameron, M., Selig, S. and Hemphill, D (2011). *Clinical exercise: A case-based approach*. Churchill Livingstone, Elsevier, Australia.
2. LeMura, L.M. and Duvillard, S.P. (2004). *Clinical Exercise Physiology: Application and Physiological Principles*. Lippincott Williams & Wilkins. Philadelphia.
3. Durstine, J.L., and Moore, G.E. (2003). *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. 2nd Ed. Human Kinetics. Champaign, IL.
4. Ehrman, J. Gordon, P., Visich, P and Keteyian, S. (2013). *Clinical Exercise Physiology*. 3rd Ed. Human Kinetics. Champaign, IL.
5. Steve Jonas and Edward M. Phillips (2009). *ACSM's Exercise is Medicine: A Clinician's Guide to Exercise Prescription*. Lippincott Williams & Wilkins. Philadelphia.

TCE 508

Exercise Programming for Clinical Populations (4 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able to:

1. To explain the importance of exercise prescription and programming for metabolic disease.
2. To organize an exercise program for patients of metabolic disease.
3. To evaluate the effectiveness of an exercise program for patients with metabolic disease.

SYNOPSIS

The aim of this course is to develop students' skills in prescribing a safe and effective exercise program for individuals with a metabolic condition. This course will discuss the various exercise testing mode appropriate for individuals with a metabolic disease and the interpretation of the results from these tests.

| | Topics |
|-----|---|
| 1. | Promotion of Exercise |
| 2. | Weight management <ul style="list-style-type: none">• Case study |
| 3. | Metabolic conditions |
| 4. | Cardiovascular conditions |
| 5. | Respiratory conditions |
| 6. | Neurological conditions |
| 7. | Cancer |
| 8. | Musculoskeletal conditions |
| 9. | Children <ul style="list-style-type: none">• Paediatric population• Behavioural disorder (ADHD, Autism, Learning Difficulty) |
| 10. | Aging |
| 11. | Pregnancy and Lactation |

REFERENCES

1. Larry J. Durstine and Geoffrey E. Moore 2009. ACSM's exercise management for persons with chronic diseases and disabilities. 3rd Ed. Human Kinetics. Champaign, IL
2. American College of Sports Medicine 2010. ACSM's Resource Manual for Guidelines for exercise testing and prescription, 6th Ed. Lippincott, Williams and Wilkins, Baltimore MD
3. James S. Skinner 2005. Exercise testing and exercise prescription for special cases. 3rd Ed. Lippincott Williams and Wilkins. Baltimore MD

TCE 509

Health Psychology (3 units)

LEARNING OUTCOMES

At the end of this clerkship, the candidates will be able:

1. To demonstrate the application of fundamental theories in psychology for health behaviors
2. To relate psychological theories and underlying concepts of health behavioral changes
3. To be able to evaluate and critique the appropriate approaches for individualize behavioral modification programs in clinical settings

SYNOPSIS

The aim of this module is to expand students' understanding of psychological theories adapted to human and psychological health settings. Specifically, students will learn factors that contribute to healthy and unhealthy lives.

| | Topics |
|----|---|
| 1. | Introduction to Health Psychology |
| 2. | Health Behavior & Primary Intervention |
| 3. | Stress and Coping |
| 4. | The Patient in the treatment setting |
| 5. | Management of Chronic and Terminal Illness |
| 6. | Relaxation techniques and coping skills (stress management) |
| 7. | Supporting patient and family |
| 8. | Crisis intervention (Psychological First Aid) |
| 9. | Understanding and dealing with addiction |

REFERENCES

1. Shelley E. Taylor 2012. Health Psychology. McGraw-Hill.
2. Ian P. Albery & Marcus Munafò. Key Concepts in Health Psychology. SAGE Publications
3. David F. Marks, Michael Murray, Brian Evans, Carla Willig, Cailine Woodall & Catherine M. Sykes. Health Psychology: Theory, Research & Practice
4. Yuval Neria, Sandro Galea & Fran H. Norris 2009. Mental Health and Disasters. Cambridge University Press
5. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry 10th Edition

TCE 510

Injuries and Rehabilitation (3 units)

LEARNING OUTCOMES

At the end of this clerkship, the candidates will be able:

1. To describe the basic understanding on how injured tissue heals.
2. To discuss the types of injuries from head to toe that is commonly experienced by the athletes.
3. To discuss injury prevention steps and emergency action plan.

SYNOPSIS

This module will review the human anatomy relating to sports injury and highlights the underlying mechanisms involved in injured tissue healing. In addition, students will be exposed to the various types of injury commonly experienced by athletes and the preventive steps taken to avoid these injuries.

| | Topics |
|-----|---|
| | Fundamentals of Rehabilitation |
| 1. | Concept of Rehabilitation |
| 2. | Concept of Healing |
| 3. | Examination and Assessment |
| 4. | Tissue Injury, Inflammation and Repair |
| 5. | Pain and Pain relief |
| | Therapeutic Exercise Parameters and Techniques |
| 6. | Range of Motion and Flexibility |
| 7. | Manual Therapy Techniques |
| 8. | Functional Exercise |
| 9. | Aquatic Therapeutic Exercise |
| | Therapeutic Modalities |
| 10. | Cold and Superficial Heat |
| 11. | Clinical uses of electrical stimulation |
| 12. | Massage therapy |

| | |
|-----|--------------------------|
| | Injuries |
| 13. | Musculoskeletal injuries |
| 14. | Fractures |
| 15. | Providing emergency care |

REFERENCES

1. Cartwright L.A. and Ritney, W.A (2005). Fundamentals of Athletic Training. 2nd Ed. Human Kinetics. Champaign, IL.
2. Houglum, P.A and Perrin, D.H (2005). Therapeutic exercise for musculoskeletal injuries. 2nd Ed. Human Kinetics. Champaign, IL.
3. Denegar, C.R, Saliba, E, and Saliba, A. (2006). Therapeutic modalities for musculoskeletal injuries. 2nd Ed. Human Kinetics. Champaign, IL.
4. Flegel, M.J (2008). Sport First Aid. 4th Ed. Human Kinetics. Champaign, IL.

TMR 504

Professional And Research Skills (3 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To acquire communication skills and able to prepare and present papers using the latest information technology and communication methods.
2. To identify various organisations that provide local and foreign research grants as they will be provided guidance in the fundamentals of research methodologies including statistical requirements and the use of statistical software for data analysis.
3. To understand the importance for Informatics Science, specifically related to Bioinformatics, Clinical Informatics as well as Laboratory Information Systems.

SYNOPSIS

This course will commence with an introduction to medical research and general skills essential for a researcher. This course comprises of lectures, laboratory/studio internship, presentations and coursework.

| | Topic |
|-----|---|
| 1. | Introduction to library research |
| 2. | E-library system and Endnote program |
| 3. | Research ethics I & II |
| 4. | Research proposal and grant application |
| 5. | Creativity, innovation and commercialization |
| 6. | Research management skills |
| 7. | Multimedia skills |
| 8. | Communication skills |
| 9. | Teamwork in research |
| 10. | Introduction to medical statistics and research methodology |
| 11. | Statistical requirement in research proposal |
| 12. | Statistical analysis of experimental results |
| 13. | Use of software in statistical analysis |
| 14. | Introduction to bioinformatics and medical bioinformatics |

| | |
|-----|--|
| 15. | Scientific and academic writing |
| 16. | Bioinformatics research facility at USM and Malaysia |

REFERENCES

1. Bell, J. and Opise, C. (ed) Learning from Research: Getting more from your data. Open University Press. Latest edition: 2002 (Available at IPPT, ISBN:9780335206605).
2. Bland, M. (ed) An Introduction to Medical Statistics. Oxford University Press. Latest edition: 2000 (Available at IPPT, ISBN:9780192632692).
3. Claverie (ed) Bioinformatic for Dummies. John Wiley & Son Inc. Latest edition: 2006 (Available at IPPT).
4. Horris, C. (ed) Networking for Success: The NLP Approach to a Key Business and Social Skill. Oak Tree Press. Latest edition: 2000 (to order)
5. Horwood, T. (ed) Freelance Proofreading and Copy Editing: A Guide. Action Print Press. Latest edition: 1995 (Available at PPT).
6. Khosrow-pour, M. (ed) Web-based Instructional Learning. McGraw-Hill. Latest edition: 2002 (Available at IPPT).
7. Lest, A.M. (ed) Introduction to Bioinformatics. Oxford University Press . Latest edition: 2008 (to order)
8. Murrel, G. [et al] (ed) Research in Medicine: Planning a project, writing a thesis. Cambridge University Press. Latest edition: 1999 (Available at IPPT).
9. Pallant, J. (ed) SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using SPSS for Windows (Version 10). Open University Press. Latest edition: 2001 (Available at IPPT, ISBN:9780335208906).
10. Parry, H. (ed) Successful Business Presentation. Croner Publishing. Latest edition: 1994 (Available at IPPT – In order).
11. Pickering, P. (ed) How to make the most of your workday. Careean Press Incorporated. Latest edition: 2001 (Available at IPPT, ISBN:9781564145369).
12. Rahman, S. (Eds) Multimedia Networking Technology, Management and Applications. Idea Group Publishing. Latest edition: 2001 (Available at IPPT- In order).
13. Rotondo, J. and Rotondo, M. (eds) Presentation skills for managers. McGraw Hill. Latest edition: 2001 (Available at IPPT – In order).
14. Spank, S. and Templeton, M. (eds) Quick guide to great presentation skills. McGraw Hill. Latest edition:1998 (to order).
15. Turabian, K.L (ed) A Manual for Writers of Term Papers, Theses and Dissertations. University of Chicago Press. Latest edition: 1996 (Available at IPPT – In order).

TCE 511

Clinical Exercise Practicum (8 units)

LEARNING OUTCOMES

At the end of this course, the candidates will be able:

1. To gain 360 hours work experience in an appropriate setting in a supervised clinical environment.
2. To plan and facilitate a safe and effective exercise interventions and provide assessment & education services for chronic disease populations, specifically Musculoskeletal, Neuromuscular, Metabolic and Cardiorespiratory disease.
3. To develop clinical reasoning skills and expand the students awareness of the range of professional roles and relationships for Exercise Physiologists and the contexts of practice in the wider community.

SYNOPSIS

This module will require students to undertake supervised clinical practice in affiliated hospitals (public and private), clinics and community settings as required to be an accredited Clinical Exercise Physiologists.

| | Topics |
|--------------------------|--|
| Week 1 | <p>Day 1 and Day 2 Lecture 1: Introduction to Clinical Practicum</p> <ul style="list-style-type: none"> • Cultural competence • Course content, clarify course assessment and revise professional standards <p>Lecture 2: Workshop: Professional Development</p> <ul style="list-style-type: none"> • Health Care in Malaysia • Practicum Reports • Job Applications & Interviewing skills <p>Day 3 Seminar on Exercise is Medicine</p> <p>Day 4 and Day 5 Practicum 8 hrs/day x 2 days = 16 hours</p> |
| Week 2 to Week 5 | <p>Week 2 to Week 5 Practicum 8 hrs/day x 20 days = 160 hrs</p> |
| Week 6 | <p>Day 1 and Day 3 Practicum 8 hrs/day x 3 days = 24 hrs</p> <p>Day 4 and Day 5 Seminar</p> <ul style="list-style-type: none"> • Case Study on Exercise for Clinical Population • Lectures • Student Presentation |
| Week 7 to Week 10 | <p>Week 7 to Week 10 Practicum 8 hrs/day x 20 days = 160 hrs</p> |

EVALUATION FORMAT

There are two components for the MSc (Clinical Exercise Science) program:

1. The formal taught courses accounting for 33 credit units.
2. The clinical exercise practicum accounting for 8 credit units.

Total credit units: 41

ASSESSMENT OF THE FORMAL TAUGHT COURSES

The formal taught courses will be graded and recorded as Grade Point Average (GPA) and the final GPA over the two semesters will be recorded as cumulative GPA (cGPA). The marking of the answer scripts will be based on the standard mark from 0 % to 100 % for a perfect answer. This mark will be converted to the GPA based on the following system:

| Mark (%) | Grade | Grade Point | Result |
|----------|-------|-------------|-------------|
| 80 - 100 | A | 4.00 | PASS |
| 70 - 79 | A- | 3.67 | |
| 64 - 69 | B+ | 3.33 | |
| 58 - 63 | B | 3.00 | |
| 52 - 57 | B- | 2.67 | |
| 46 - 51 | C+ | 2.33 | |
| 40 - 45 | C | 2.00 | FAIL |
| 36 - 39 | C- | 1.67 | |
| 32 - 35 | D+ | 1.33 | |
| 28 - 31 | D | 1.00 | |
| 25 - 27 | D- | 0.67 | |
| 0 - 24 | F | 0.00 | |

For each module, continuous assessment will contribute 40% of the final mark while the end of the semester examination will contribute the other 60%.

The breakdown of the marking scheme is as follows:

A. Continuous Assessment

| Break down | Marks (%) |
|---|-----------|
| Log book/Lab report/Practical report | 10 |
| Quiz/Mid-Term test | 10 |
| Assignment | 10 |
| Presentation/Journal club/Problem based learning/Article review | 10 |
| TOTAL | 40 |

B. Semester Examination

At the end of the module there will be a semester examination, comprising of:

- i. MCQ (TRUE/FALSE) = 1 hour
- ii. Short Essay/Long Essay = 2 hours

The total marks for MCQ and Essay will represent 60% of the final marks.

C. The Final Grade.

The final grade for the module will be based on the summation of the Continuous Assessment (40%) and the semester exam (60%).

ASSESSMENT OF THE PRACTICUM COMPONENT

For the practicum component, candidates will be assessed as PASS or FAIL based on the reports submitted by the Program Chairman and the assessment reports by the field supervisor.

REQUIREMENT FOR GRADUATION

In order to graduate, candidates must satisfy requirement 1 and 2 below:

Requirement 1:

- i. a CGPA of at least 3.0, and
- ii. a GPA of not less than 2.33 for each of the formal taught courses.

And

Requirement 2:

A GPA of not less than 2.33 for the practicum module.

TEACHING VENUES

1. Academic Blok, AMDI, Sains@Bertam, Kepala Batas
2. AMDI Gymnasium
3. Selected Hospital and Rehabilitation Centres (clinical exercise practicum)
4. Multimedia Room/Computer Laboratory
5. Multidisciplinary Laboratory (MDL), Sains@Bertam, Kepala Batas
6. Centre for Knowledge, Communication and Technology (PPKT) teleconferencing

STUDENT FACILITIES

As registered USM students, you are entitled to student facilities in AMDI or USM campus.

1. Lecture Hall and Tutorial Rooms, AMDI
2. Multimedia Room/Computer Laboratory, AMDI
3. AMDI Library, Sains@Bertam and Perpustakaan Hamzah Sendut, USM Main Campus
4. Outpatient treatment at Medical and Dental Clinic, AMDI Clinical Trial Complex (CTC) and Pusat Sejahtera (USM Main Campus Clinic)

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Academic Calendar 2019-2020. (Dates are subject to change). Fall 2019. September 2: Labor Day Holiday (No Classes). September 3: Opening Day (No Classes). May 18-August 6: Twelve-Week Session (No Friday Classes; 11 class meetings if M schedule; 12 class meetings if T or W or R schedule; no class 5/25, 7/4). May 25: Memorial Day Holiday (No Classes). June 15-July 9: Second Four-Week Session (No Friday Classes; 16 classes if M-R schedule; no class 7/4). June 29-August 6: Second Six-Week Session (No Friday Classes; 18 class meetings if MTW schedule; 12 class meetings if MW or TR schedule). July 4: Independence Day Holiday (No Classes). July 13-August 6: Third Four-Week Session (No Friday Classes; 16 class meetings if M-R schedule). 2019-2020 Academic Year. Visit the OWU Events Calendar for the latest list of lectures, performances, athletics events, and other public events. Dates of all events listed on the academic and events calendars are subject to change. Grades due at 4:30 p.m. Spring Semester. Wednesday, January 15, 2020. Classes Begin. Thursday, January 23, 2020. Last Day to Add/Drop Full-Semester and First-Module Courses. Thursday, February 13, 2020. Last Day to Withdraw from First-Module Courses. Tuesday, March 3, 2020. Exams in First-Module Courses. Wednesday, March 4, 2020. JUPEB DURATION: The programme shall run for One academic session of Two semesters beginning from September 2019 to July 2020. During this period, students would be exposed to broad based intensive academic training which would prepare them for the JUPEB examination. ADMISSION REQUIREMENTS INTO THE JUPEB PROGRAMME: Candidates must possess a minimum of 5 [~] level credits (SSCE/WASCE/NECO/GCE/NABTEB), including English Language obtained at not more than two sittings in subjects relevant to their proposed courses at FUOYE or any other university.

Academic Year 2019-2020. This calendar includes an addendum listing religious holidays for use in requesting excused absences according to University Policy, Excused Absences for University Extracurricular Activities and Religious Holidays. For religious holidays not listed, contact the Office of the Chaplain. April 8th–26, Monday–Friday: Enrollment for fall 2019 continuing students for all undergraduates and for graduates in Dedman College, Lyle and Meadows. May, July, August (TBA): Academic Advising, Enrollment and Orientation conferences for new first-year and transfer undergraduate students. The January Term consists of two primary sessions: Dallas January Session and SMU-in-Taos January Session. Each primary session has different deadline dates. The authorities of the Nasarawa State University, Keffi (NSUK) have released the admission list containing the names of candidates offered provisional admission into the university various undergraduate programmes for the 2019/2020 academic session. Candidates that participated in the Nasarawa State University, Keffi (NSUK) 2019/2020 post UTME screening exercise can now check their admission status online.