MEDICINE AND SOCIETY MODULE (FF2613) SESSION 2020/2021

I. DIRECTORY OF TEACHING & SUPPORT STAFF (Tel: 03- 9145XXXX)

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II. INTRODUCTION TO MEDICINE AND SOCIETY II

The module discusses the concept of prevention and control of communicable and non-communicable diseases. Special attention is given to the prevention and control of emerging and re-emerging diseases that are of public health concern. This module also introduces basic comprehension on demography, vital statistics, fertility data and population expansion. Basic knowledge on occupational safety and health, as well as the need for hazard assessment and control measures at workplace are also explored. The students will be exposed to the existing occupational safety and health acts and regulations. This module also introduces the students to the technique of conducting research from proposal preparation and data collection until data analysis and report writing. Basic statistical techniques such as descriptive statistics and inferential statistics will be introduced to the students as they conduct their research.

III. PRE-REQUISITES

The students should have basic knowledge of medicine and society in Year 1, Semester 2.

IV. MODULE LEARNING OUTCOMES

By the end of this module, students should be able to:

I. apply public health techniques in epidemiology, statistics, demography and occupational health in prevention and control of diseases.
II. explain the basic needs for health services for specific groups of population such as workers, children and mothers.
III. conduct research and analyze a data set.

V. TEACHING-LEARNING TOPICS AND SPECIFIC OBJECTIVES

Concept Lectures

At the end of the lectures, students should be able to:

CL1 Epidemiology in Medicine

- comprehend the concept and definition of epidemiology.
- know the scope and usefulness of epidemiology.
- recognize the development of epidemiology and its role in medicine.
- describe the relationship between agent, host, environment and human in diseases transmission.

CL2 Principles in Control and Prevention of Diseases

- comprehend the definition of diseases prevention, control, elimination and surveillance.
- explain isolation and quarantine.
- discuss the principles of diseases prevention.
- describe methods of control and prevention used for communicable and non-communicable diseases.
- define descriptive epidemiology.
- recognize disease distribution according to people, place and time.
- explain disease distribution by giving certain examples.

CL3 Epidemic Investigation

- differentiate between epidemic and endemic.
- discuss the methods used in epidemic investigation.
- identify the epidemic curve and calculate the attack rate.
- describe the steps in epidemic control measures.

CL4 Disease Surveillance

- comprehend the definition and concept of disease surveillance.
- discuss diseases under the Ministry of Health Surveillance Program.
- outline the International Health Surveillance and role of WHO.

CL5 Disease Epidemiology in Malaysia

- recognize the common diseases in Malaysia.
- explain the trend of communicable and non-communicable diseases in Malaysia.
- identify factors that may influence the trend of communicable and non-communicable diseases occurrence.
- identify the incidence of communicable and non-communicable diseases among multi-racial population in Malaysia.

CL6 Control and Prevention of Non-Communicable Diseases

- describe the principles of non-communicable disease prevention and control.
- outline the prevention programmes carried out by the Ministry of Health, Malaysia.

CL7 Health Statistics and Indicators

- describe health statistics and indicators used by the Ministry of Health, Malaysia.
- explain and suggest mitigation measures that are appropriate according to the indicators.

CL8 Research Methodology – Study Designs

- know how studies are designed, methodology and appropriate statistics methods that can be used in presenting the results of the study.

CL9 Research Methodology – Data Collection

- know different methods of sampling data
- know different methods of data collection
- understand the need for data exploration.

CL10 Principles of Demography

- define the demography, health statistics and important database.
- relate demography and health.
- illustrate the usefulness of demography.
- know the notification system in Malaysia.
- differentiate between fertility and fecundity.
- discuss factors involved in fertility.
- discuss the effect of fertility on population changes.
- measure fertility and problems in measuring it.

CL11 Descriptive Analysis

- identify types of descriptive statistics commonly used in research.
- Able to conduct descriptive analysis.
- differentiate between descriptive and analytic statistics.

CL12 Analysis of Quantitative Data – T-test

- distinguish different types of analysis of quantitative data commonly used in medical research.
- Able to analyze quantitative data using T- test

CL13 Analysis of Quantitative Data – Correlation & Regression

- distinguish different types of analysis of quantitative data commonly used in medical research.
- Able to analyze quantitative data using Correlation & Regression.

CL14 Analysis of Qualitative Data – Chi-Square & Proportionate Test

- distinguish different types of analysis of qualitative data commonly used in medical research.
- Able to analyze qualitative data using Chi-Square & Proportionate Test.

CL 15 Non-Parametric Analysis

- Able to decide when to use parametric and non-parametric analysis
- Able to analyze using different types of non-parametric analysis commonly used in medical research.

CL16 Principles of Occupational Safety and Health

- define occupational safety and health.
- recognize the concept of man and machine interface.
- recognize hazard assessment and control measures at workplace.

Self-Learning Package (SLP) – download from https://drtamil.me

At the end of the SLP topics, students should be able to:

SLP1. Vaccines and Immunity

- recognize the concept of immunity and immunization.
- outline the history and type of vaccines.
- identify vaccination programs in Malaysia.

SLP2. Occupational Safety and Health Legislations

- recognize the existing occupational safety and health acts and regulations in Malaysia.
- define occupational safety and accident.
- discuss the occupational accident prevention programs.
- explain the occupational injury compensation legislation.

Practical

PE1 Control and Prevention of Communicable Diseases

- explain the stages involved in prevention of diseases based on natural history of the disease.
- explain the concept of multi-factorial causes of a disease.
- describe the principle of communicable diseases prevention.
- define isolation, quarantine, prevention and control.
- describe characteristics of prevention and control of certain diseases.

PE2. Screening Test

- define sensitivity, specificity and predictive values.
- explain what a good screening test is.

PS1 Descriptive Statistics

- Preceded by CL 10 Descriptive Analysis.
- identify types of descriptive statistics commonly used in research.
- differentiate between descriptive and analytic statistics.

PS2 Analysis of Quantitative Data – T-test

- Preceded by CL 11 T-test
- identify different types of analysis of quantitative data commonly used in medical research.
- Able to analyze quantitative data using T- test

PS3 Analysis of Quantitative Data – Correlation & Regression

- Preceded by CL12 Correlation & Regression
- identify different types of analysis of quantitative data commonly used in medical research.
- Able to analyze quantitative data using correlation and linear regression.

PS4 Non-Parametric Analysis

- Preceded by CL 13 Analysis of Qualitative Data & CL 14 Non-Parametric Analysis
- Able to analyze qualitative data using Chi-Square & Proportionate Test
- Able to use non-parametric analysis in analyzing data.

Mini Tests

Mini Test 1

- Epidemiology & Demography

Mini Test 2

- Statistics & Occupational Health

Problem-Based Learning (PBL)

PBL1. On My Goat! – A goat herder with Brucellosis infection due to work exposure.

At the end of the PBL topics, students should be able to:

- recognize the importance of epidemiological surveillance activity in prevention of communicable diseases.
- describe the universal precaution practice at workplace.
- recognize the importance of early notification in disease control.

Research Project

At the end of practical and research project sessions, students should be able to:

- develop basic concept of asking and thinking in scientific way.
- collect, manage and analyze research data in such scientific method.

Research Project 1

- determine title, objective, hypothesis and references. Draft research proposal and questionnaire.

Research Project 2

- present research proposal to the group and finalize the questionnaire.

Research Project 3

- conduct data collection and key-in data in statistical software.

Research Project 4

- conduct data analysis and prepare for presentation.

Research Project 5 a & b

- present research results and write report.

VI. TEACHING-LEARNING METHODOLOGY

In the past, we relied upon traditional face to face method of lectures, tutorials, practical and quizzes. Augmented by online materials such as videos, interactive slides and online quizzes. In this age of Covid-19 and new norms, we will make do with online lectures via Microsoft Teams, recorded lectures on YouTube, and fully utilizing UKM LMS which is UKMFolio at https://ukmfolio.ukm.my.

VII. RESOURCE MATERIALS

1. Campbell, M.J. & Swinscow, T.D.V. 2009. Statistics at Square One. 11th Edition. BMJ Books.
2. Jamalludin, A.R. 2015. Guidelines for Methods and Statistics in Medical Research (Springer Briefs in Statistics). 1st Edition. Springer
3. Rothman, K. 2019. Modern Epidemiology. 4th edition. Lippincott Williams & Wilkins.
4. Chan Y.H., 2003-2005. Basic Statistics for Doctors Series. Singapore Medical Journal. Available from http://drtamil.me/ (password yhchan)
    - 101: Data Presentation (June 2003)
    - 102: Quantitative Data - Parametric & Non-Parametric Tests (August 2003)
    - 103: Qualitative Data - Tests of Independence (October 2003)
    - 104: Correlational Analysis (December 2003)
    - 201: Linear Regression Analysis (Feb 2004)
5. Swinscow, T. D. V. 2001. Statistics at Square One. BMJ Publishing Group; 10th edition. Freely available from http://www.bmj.com/collections/statsbk/
6. Blog for notes & videos at https://drtamil.me/ffff2613 & https://tinyurl.com/fk6163Stats
7. Facebook Group at https://www.facebook.com/groups/teamstats/
8. PowerPoint at https://www.slideshare.net/drtamil/
9. Video at https://www.youtube.com/drtamil (please subscribe)

Appendix 1

How to do the online practical 1 (deadline 16/10/2020 8am))

1. Download the practical from https://drtamildotme.files.wordpress.com/2015/08/amali-1-2015.pdf. Use these formulas from https://drtamildotme.files.wordpress.com/2014/10/formula.pdf as reference.
2. Do the Practical 1 Descriptive Statistics on paper first. Get all the answers.
3. Log in into http://goo.gl/forms/HDmIiw6WFD
4. Match the questions on screen to the questions in the practical. Start answering; you have 2 hours to finish the 8 questions. Good luck.
5. This exercise will contribute 2.5 marks to your final marks.

How to do the online practical 2 (deadline 23/10/2020 8am)

1. Download the practical from https://drtamildotme.files.wordpress.com/2015/09/amali2-2015_2.pdf. Use these formulas from https://drtamildotme.files.wordpress.com/2014/10/formula.pdf as reference.
2. Do the Practical 2 T-test on paper first. Get all the answers.
3. Log in into http://goo.gl/forms/92H5UPbQVI
4. Match the questions on screen to the questions in the practical. Start answering; you have 2 hours to finish the 16 questions. Good luck.
5. This exercise will contribute 2.5 marks to your final marks.

How to do the online practical 3 (deadline 23/11/2020 8am)

1. Download the practical from https://drtamildotme.files.wordpress.com/2015/10/amali3-2015.pdf. Use these formulas from https://drtamildotme.files.wordpress.com/2014/10/formula.pdf as reference.
2. Do the Practical 3 Correlation on paper first. Get all the answers.
3. To help you calculate the Pearson Correlation for Q2 and Linear Regression for Q4, please download this Excel file https://drtamildotme.files.wordpress.com/2015/10/ff2613-ps3.xlsx and complete it.
4. Log in into http://goo.gl/forms/ZF3cEWyYNI
5. Match the questions on screen to the questions in the practical. Start answering; you have 2 hours to finish the 9 questions. Good luck.
6. This exercise will contribute 2.5 marks to your final marks.

How to do the online practical 4 (deadline 03/12/2020 8am)

1. Download the practical from https://drtamildotme.files.wordpress.com/2014/10/amali4-ifolio.pdf. Use these formulas from https://drtamildotme.files.wordpress.com/2014/10/formula.pdf as reference.
2. Do the Practical 4 Non-parametric on paper first. Get all the answers.
3. Log in into http://goo.gl/forms/sV87Dx4S6g
4. Match the questions on screen to the questions in the practical. Start answering; you have 2 hours to finish the 17 questions. Good luck.
5. This exercise will contribute 2.5 marks to your final marks.

Appendix 2

Guide on Research Project

Prepare	Activity during class	Tasks after class
Session 1 - A lecturer is assigned to each group consisting of 10 to 16 members. - Determine which group you're assigned to. - Get the attendance list for that group.	• Check attendance • Facilitate group in a brainstorming session to determine research project title, general objectives, specific objectives, methodologies and conceptual framework. • Ensure the selected methodology will generate qualitative variables and quantitative variables to be analyzed. • The selected research project title should be something the group can do within the specified time and limited resources.	• Make sure that they have divided tasks among themselves like literature review, background information etc. • Group members need to meet each other in their own time for discussion and finish the proposal. This research proposal will be discussed during the next session. This proposal includes the questionnaire. • Identify the group contact person and how to contact him. Create a WhatsApp group if necessary.
Session 2 - Prepare some materials on how to use Google Form and Excel.	• Check attendance • Discuss their proposal and finalize the questionnaire. • Using guide such as https://www.slideshare.net/drtamil/hack18-using-google-forms-for-quiz , get the students to upload their questionnaire on Google Form and share the link with their respondents. • Remind them to download the data in Excel format.	• Students are encouraged to finish collecting data before the third session. • A copy of the questionnaire should be brought to the third session. • If there is an IT-literate student, the data can be prepared in a "spreadsheet" such as Excel and brought to the third session.
Session 3 - Please bring a notebook with SPSS or any statistical software to class.	• Check attendance • Demonstrate how to import data from Excel into SPSS/etc., or whichever statistical software that is available. • Demonstrate how to do statistical analysis using the software. • Video and notes on how to conduct the analysis is available from https://drtamil.me/2016/05/09/spss-how-to-videos/	• Students complete all the analysis as a group, based on the hypotheses that they want to prove. • Prepare a research presentation using PowerPoint and practice the presentation to finish within 10 minutes for each group. • Bring that PowerPoint to session 4 to be presented to the lecturer-in-charge.
Session 4 - Please bring a notebook with Camtasia Studio or any screen recording program to record their presentation.	• Check attendance • Listen to the students' presentation. • Give constructive comments and suggest corrections if necessary.	• Students to record presentation using Camtasia Studio or any similar apps https://www.slideshare.net/drtamil/using-camtasia-studio-to-create-content • Edit the video and upload to YouTube https://ppukmdotorg.wordpress.com/2016/03/05/sharing-videos-on-the-ifolio/ . • Forward video link to module coordinator.

Appendix 3

No.	Date	Time	Topic	Lecturer
1	07/09/2020	8-10 am	Briefing by the Dean and Coordinators	AP Dr Azmi Mohd. Tamil
2	09/09/2020	9 am	CL01 Epidemiology in Medicine	AP Dr Mohd Rohaizat Hassan
3	10/09/2020	10.30am	CL02 Principles in Control and Prevention of Diseases	AP Dr Norfazilah Ahmad
4	18/09/2020	10.30am	CL03 Epidemic Investigation	AP Dr Nazarudin Safian
5	21/09/2020	2 pm	New Tools For Learning	AP Dr Azmi Mohd. Tamil
6	23/09/2020	9 am	CL04 Disease Surveillance	AP Dr Azmawati Mohd Nawi
7	23/09/2020	10.30am	CL05 Disease Epidemiology in Malaysia	AP Dr Mohd Rohaizat Hassan
8	23/09/2020	11.30am	Diseases	AP Dr Azmawati Mohd Nawi
9	24/09/2020	8 am	CL07 Health Statistics and Indicators	AP Dr Azimatun Noor Aizuddin
10	24/09/2020	9 am	PE1 Control and Prevention of Communicable Diseases	AP Dr Norfazilah Ahmad
11	28/09/2020	9 am	CL08 Study Designs	Prof Dr Zaleha Md Isa
12	28/09/2020	10.30am	CL09 Data Collection	Prof Dr Zaleha Md Isa
13	28/09/2020	11.30am	CL10 Principles of Demography	AP Dr Idayu Badilla Idris
14	01/10/2020	8 am	SLP1. Vaccines and Immunity	AP Dr Rosnah Sutan
15	01/10/2020	9 am	PE2 Screening Test	AP Dr Azmi Mohd. Tamil
16	05/10/2020	2 pm	Minitest 1	AP Dr Azmi Mohd Tamil & Lynn
17	07/10/2020	10.30 am	CL11 Descriptive Analysis	AP Dr Azmi Mohd. Tamil
18	09/10/2020	10.30 am	CL12 T-test & ANOVA	AP Dr Azmi Mohd. Tamil
19	16/10/2020	10.30 am	PS1 Descriptive Statistics / Research 1	All Lecturers/Tutors
20	23/10/2020	10.30 am	PS2 T-test / Research 2	All Lecturers/Tutors
21	09/11/2020	11.30 am	CL13 Pearson Correlation & Linear Regression	AP Dr Azmi Mohd. Tamil
22	18/11/2020	8 am	CL14 Analysis of Qualitative Data	AP Dr Azmi Mohd. Tamil
23	23/11/2020	8 am	CL15 Non-Parametric Analysis	AP Dr Azmi Mohd. Tamil
24	23/11/2020	9 am	PS3 Correlation & Regression / Research 3	All Lecturers/Tutors
25	30/11/2020	10.30 am	CL16 Principle of Occupational Safety and Health	Dr Halim Ismail
26	02/12/2020	9 am	SLP2. Occupational Safety and Health Legislations	Dr Halim Ismail
27	03/12/2020	10.30 am	PS4 Non-Parametric Analysis / Research 4	All Lecturers/Tutors
28	08/12/2020	2 pm	P5.1 Presentation of Research Findings	All Lecturers
29	10/12/2020	10.30 am	P5.2 Presentation of Research Findings	All Lecturers
30	14/12/2020	2 pm	Minitest 2 (Please delete 17/12/20)	AP Dr Azmi Mohd. Tamil & Lynn
31	22/12/2020	10.30 am	PBL3.1 Occupational Injury	Assigned Lecturers
32	28/12/2020	8 am	PBL3.2 Occupational Injury	Assigned Lecturers

CONTENT SUMMARY

Teaching-Learning Method	Number of sessions	Duration per session (hours)	Total Contact Hours
Concept Lecture	16	16 sessions X 1 hour	16
Self-Learning Package	2	2 sessions X 1 hour	2
Practical and Research Project	8	6 sessions X 2 hours	14
		2 sessions X 1 hours	
Mini Tests	2	2 sessions X 2 hours	4
Problem-Based Learning	1	1 sessions X 4 hours	4
Total	**29**		**40**