Subject Description Form

<table>
<tr><td>Subject Code</td><td>APSS6003</td></tr>
<tr><td>Subject Title</td><td>Advanced Quantitative Methods</td></tr>
<tr><td>Credit Value</td><td>3</td></tr>
<tr><td>Level</td><td>6</td></tr>
<tr><td>Pre-requisite / Co-requisite/ Exclusion</td><td>Nil</td></tr>
<tr><td>Assessment Methods</td><td>
<table>
<tr><td>100% Continuous Assessment</td><td>Individual Assessment</td><td>Group Assessment</td></tr>
<tr><td>1. Term Paper/Quiz</td><td>60 %</td><td>-</td></tr>
<tr><td>2. Seminar presentation</td><td>20 %</td><td>-</td></tr>
<tr><td>3. Participation</td><td>20 %</td><td>-</td></tr>
</table>
The followings apply to the overall grade:
• The grade is calculated according to the percentage assigned;
• The completion and submission of all component assignments are required for passing the subject; and
• Student must pass all component(s) if he/she is to pass the subject.
</td></tr>
<tr><td>Objectives</td><td>This subject is designed to equip students with the advanced knowledge in quantitative research methodology. It aims to facilitate students' understanding of the conceptual and methodological issues behind the quantitative research methods. Through lectures, seminars, and presentations, students are trained to be the consumers and users of various quantitative research methods with hands-on practice of data analysis techniques. They will engage in various advanced topics including mediation and moderation analysis, factor analysis, structural equation modeling, multilevel modeling, and meta-analysis.</td></tr>
<tr><td>Intended Learning Outcomes
(Note 1)</td><td>The course syllabus will include: formulating research questions & hypotheses to serve a specific research objective, considering methodological issues of a research study, validating psychological measurement, analyzing empirical data, and preparing research report.

By the end of this course, students will be able to:
a. Understand the principles, strengths, and limitations of various quantitative research methods;
b. Critically examine the choice of a quantitative research method to answer a research question on hand;
c. Conduct an independent research study through appropriately collecting and analyzing quantitative data;</td></tr>
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	d. Effectively interpret and present the findings analysed by various advanced quantitative methods according to APA format.
Subject Synopsis/ Indicative Syllabus *(Note 2)*	1. Review of basic statistics 2. Regression analysis 3. Moderation analysis 4. Mediation analysis 5. Integration of mediation and moderation 6. Reliability and validity 7. Exploratory factor analysis 8. Structural equation modeling
Teaching/Learning Methodology *(Note 3)*	The course will emphasize practical and basic uses of quantitative research designs and statistical analysis across various social science disciplines. Classroom lecturing will be supplemented by hands-on computer practices using real survey data. Empirical examples will be drawn from local and international studies in social sciences to illustrate the design and application issues of quantitative research methodology.
Assessment Methods in Alignment with Intended Learning Outcomes *(Note 4)*	See table below.

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)			
		a	b	c	d
Term Paper/Quiz	60%	√	√	√	√
Seminar presentation	20%	√	√	√	√
Participation	20%	√	√	√	√
Total	100 %				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Seminar Presentations and Participation
Students are expected to give a seminar presentation to present the findings of a quantitative research project related to their research interest.

Term Paper/Quiz
Students are required to submit an individual paper and complete a term-end quiz related to quantitative data analysis.

Student Study Effort Expected		
	Class contact:	
	▪ Lecture	27 Hrs.
	▪ Seminar	12 Hrs.
	Other student study effort:	
	▪ Computer session	20 Hrs.
	▪ Research project	33 Hrs.
	▪ Seminar presentation	20 Hrs.
	Total student study effort	112 Hrs.

Reading List and References	**Essential** [NF] Navarro, D. J., and Foxcroft, D. R. (2022). *Learning statistics with jamovi: A tutorial for psychology students and other beginners.* [AW] Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage. [BK] Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182. [BA] Beaujean, A. A. (2014). *Latent variable modeling using R: A step-by-step guide*. Routledge. [EL] Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, *12*, 1–22. [FEL] Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175-191. [FEB] Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160. [AH] Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis*. (2nd Ed.). New York: The Guilford Press. [HM] Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*, 924-936. [MJY] Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*, 852–863. [PRH] Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42*, 185–227.

Note 1: Intended Learning Outcomes

Intended learning outcomes should state what students should be able to do or attain upon completion of the subject. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/ Indicative Syllabus

The syllabus should adequately address the intended learning outcomes. At the same time over-crowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology

This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method

This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method purports to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.