

<b>Subject Code</b>	MM5400
<b>Subject Title</b>	Launchpad to Advanced Analytics
<b>Credit Value</b>	0
<b>Level</b>	5
<b>Normal Duration</b>	1-semester
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	None
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Introduce students to programming and debugging issues in code</li> <li>2. Prepare students for advanced courses that requires programming</li> <li>3. Introduce R language as a language of choice in data visualization</li> </ol>
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>a. Learn the art of programming in R</li> <li>b. Perform statistics and code them in R</li> <li>c. Present analysis results in a disseminable charts and summary tables</li> </ol>
<b>Subject Synopsis/ Indicative Syllabus</b>	<p>The bootcamp gradually builds on R-programming giving students hands-on experience with R-assignments linked to the daily topics. No prior knowledge of programming or statistics is necessary</p> <p>-----</p> <p>Part I: Programming</p> <ul style="list-style-type: none"> <li>- The logic of programming</li> <li>- Errors and debugging code</li> <li>- Code re-use</li> <li>- Utilizing online platforms such as Github for solutions</li> </ul> <p>-----</p> <p>Part II: Statistics</p> <ul style="list-style-type: none"> <li>- Statistical assumptions</li> <li>- Commonly use statistical tests</li> <li>- Regressions (binary/logistic)</li> <li>- Interpretation of statistical results</li> </ul> <p>-----</p> <p>Part III: Disseminating findings</p> <ul style="list-style-type: none"> <li>- Graphing, plotting, charting data</li> <li>- Standard format for statistical results</li> </ul>
<b>Teaching/Learning Methodology</b>	<p>40 hours of daily class activities including tutorials on the concepts. Instructor will walk through each tutorial assignment in class. Students can reflect on the day's learning at home</p> <p>Daily R programming assignments slowly build up expertise in the art of programming. Students should be able to work on the assignments on their regular laptop in class or at home.</p>

<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
			a	b	c		
	<b>Continuous Assessment</b>	<b>100%</b>					
	1. Class Participation	100%	✓	✓	✓		
	Total	100 %					
<p><b>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</b></p> <p>To pass this subject, students are required to obtain Pass in the Continuous Assessment component. Students must show active participation during the bootcamp. Much of the learning and practice will be carried out through in-class discussion and exercises, which will help student achieve the learning outcomes indicated.</p>							
<b>Student Study Effort Expected</b>	Class contact:						
	▪ Bootcamp						40 Hrs.
	Total student study effort						40 Hrs.
<b>Reading List and References</b>	<p>Matloff, N. (2011). The Art of R Programming: A Tour of Statistical Software Design. No Starch Press. Retrieved from <a href="https://www.amazon.com/Art-Programming-Statistical-Software-Design/dp/1593273843">https://www.amazon.com/Art-Programming-Statistical-Software-Design/dp/1593273843</a></p> <p>Wickham, H. (2016). ggplot2: Elegant Graphics for Data Analysis (Use R). Springer. Retrieved from <a href="https://www.amazon.com/ggplot2-Elegant-Graphics-Data-Analysis/dp/331924275X">https://www.amazon.com/ggplot2-Elegant-Graphics-Data-Analysis/dp/331924275X</a></p> <p>McGibney, D. P. (2023). Applied Linear Regression for Business Analytics with R: A Practical Guide to Data Science with Case Studies (International Series in Operations Research &amp; Management Science, 337). Springer. Retrieved from <a href="https://www.amazon.com/Applied-Linear-Regression-Business-Analytics/dp/303121479X">https://www.amazon.com/Applied-Linear-Regression-Business-Analytics/dp/303121479X</a></p>						