

Course:	<b>Research Method in Physics</b>
Module Level:	Undergraduate
Code:	PNT492
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	6th / Third Year
Module Coordinator:	Febdian Rusydi, Ph.D
Lecturer(s):	Febdian Rusydi, Ph.D and Dr. Suryani Dyah Astuti
Language:	English
Classification within the Curriculum	Compulsory Course / <del>Elective Course</del>
Teaching format / class hours per week during semester:	3 hours of lectures (50 minutes/hour)
Workload:	3 hours of lectures, 3 hours of structural activities, 3 hours of individual study, 14 weeks per semester, and total of 126 hours per semester 4.2 ECTS*
Credit Points:	3
Requirement(s):	Experimental Physics II
Learning Goals/Competencies:	<p><b>General Competence (Knowledge) :</b> Students learn how to apply the scientific method to write a research proposal.</p> <p><b>Specific Competence:</b></p> <ol style="list-style-type: none"> <li>1. Ability to formulate a research problem formulation.</li> <li>2. Ability to design a research workflow.</li> <li>3. Ability to write a research proposal.</li> </ol>

<p>Contents:</p>	<p>This course is to train students to write a proper research proposal. The three focused aspects are (1) formulating a research problem, (2) designing a method to solve the problem, and (3) finally writing them in an adequate proposal.</p> <hr/> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-top: 1px dashed black; border-bottom: 1px dashed black;">Competence</th> <th style="text-align: center; border-top: 1px dashed black; border-bottom: 1px dashed black;">Literature</th> <th style="text-align: center; border-top: 1px dashed black; border-bottom: 1px dashed black;">Chapter</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1 2</td> <td style="text-align: center;">(all) (all)</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1-4</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">(all)</td> </tr> </tbody> </table> <hr/>	Competence	Literature	Chapter	1	1 2	(all) (all)	2	3	1-4	3	4	(all)
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1	1 2	(all) (all)											
2	3	1-4											
3	4	(all)											
<p>Soft Skill Attribute</p>	<p>Effort and ethic.</p>												
<p>Study/Exam Achievements:</p>	<p>Passing grade is D (equivalent of score 40.0 of 100.0 ).</p> <p>The score is determined by one assignment (40%) and one final task (60%).</p> <p>Score to grade conversion:</p> <p>A : 75.00 — 100.00  AB : 70.00 — 74.99  B : 65.00 — 69.99  BC : 60.00 — 64.99  C : 55.00 — 59.99  D : 40.00 — 54.99  E : 00.00 — 39.99</p>												
<p>Learning Methods:</p>	<p>Lecturing, homework, tutorial</p>												
<p>Form of Media:</p>	<p>Whiteboard, projector.</p>												
<p>Literature(s):</p>	<ol style="list-style-type: none"> <li>1. Stephen S. Carey, A Beginner’s Guide to Scientific Methods, 4th edition, Wadsworth, 2011</li> <li>2. Gary G. Tibbetts, How the Great Scientists Reasoned - The Scientific Method in Action, 2013</li> <li>3. Phillip R. Bevington and D. Keith Robinson, Reduction and Error Analysis for the Physical Sciences, 3rd edition, McGraw Hill, 2003</li> <li>4. Pedoman Penulisan Proposal dan Skripsi, Fakultas Sains dan Teknologi, Universitas Airlangga, (must be the newest version)</li> </ol>												
<p>Notes:</p>	<p>*Total ECTS={total hours workloadx50 min}/60 min}/25 hours  Each ECTS is equals with 25 hours</p>												