

GUIDELINE OF STUDYING PROGRAM (GBPP)

Least Square Computation I (TGD 120-2SKS)



By:

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Subject Title : Least Square Computation I

Code Number/SKS : TGD 120/2 SKS

Brief Description: The subject of Least Square Computation I study in elementary knowledge concerning Least Square was required student in course of study of geodesy science area. Including domination of elementary concepts of statistic and Least Square Computation Basic. Domination of information nowadays related to growth of technology and science in geodesy study expected can master and formulated by student.

General Instructional Target: In final of lecturing, student expected can comprehend, explaining and defining all growths of minimum geodesy science area science and technology 80% from entirety of taught items.

Number	Specific Instructional Target	Main Topic	Sub Main Topic	Time Estimate	Reference
1.	Student expected can explain Least Square Computation minimum 80% from entirety of taught topics.	Introduction of Least Square Computation	1. Make explanation about the understanding of Least Square Computation with its application in the Geodesy's field. 2. Understand about minimum principle concept (The least square computation basic	1x150	Mikhail, E. M. (1976), <i>Observation and Least Squares</i> , Dun Donnelly Publishers, New York Modell, M.E. (1992), <i>Data Analysis, Data Modelling, and Classification</i> , McGraw

			principle). 3. Explain about data analysis concept using statistic science and least square computation.		Hill International Edition, New York Purworaharjo, U. (1998), <i>Ilmu Hitung Perataan</i> , Institut Teknologi Bandung, Bandung Spiegel, M.R. (1996), <i>Statistika</i> , Penerbit Erlangga, Jakarta
2.	Student expected can explain Least Square Computation minimum 80% from entirely of taught topics.	1. Understanding of Statistika role in the field of Geodesy. 2. Failure Theory 3. Type of Failure 4. Basic of Statistic	1. Explanation of understanding and role of statistika in the field of geodesy 2. Explanation of data definition and measure data organization (raw data) in tabular and histogram 3. Explanation of technique compilation of raw data in the form of data distribution (frequency curve and tabel) (6x50	Mikhail, E. M. (1976), <i>Observation and Least Squares</i> , Dun Donnelly Publishers, New York Modell, M.E. (1992), <i>Data Analysis, Data Modelling, and Classification</i> , McGraw Hill International Edition, New York Purworaharjo, U. (1998),

			<p>histogram).</p> <p>4. Explanation of theoretical value concept and practical value along with his symbol</p>		<p><i>Ilmu Hitung Perataan</i>, Institut Teknologi Bandung, Bandung Spiegel, M.R. (1996),</p>
			<p>5. Explanation of classic mistake theory</p> <p>6. Mistake definition along with his symbol.</p> <p>7. Comprehending concept result of pregnant measure of mistake</p> <p>8. Explaining source, kinds of and mistake class</p> <p>9. Explaining and differentiating accuration concept and presisi.</p> <p>10. Explanation of understanding of and population of sampel</p> <p>11. Explanation of concept of statistika diskriptif and inductive</p> <p>12. Explanation of middle value definition (Mean), Median and</p>		<p><i>Statistika</i>, Penerbit Erlangga, Jakarta</p>

			<p>Modus</p> <p>13. Explanation of variation definition, mean value deviation (deviation mean), standard deviation and varians (standard of deviation).</p> <p>14. Explanation of wight definition and correction</p> <p>15. Explanation of principal concept of minimum calculating</p> <p>16. Explanation kinds of geometric condition.</p>		
3.	Student expected can explain Least Square Computation minimum 80% from entirely of taught topics.	<p>1. Parametric Least Square</p> <p>2. Condition Least Square</p> <p>3. Mix Least Square</p> <p>4. Error Eclipse</p>	<p>1. Explaining kinds of mathematics relation between measure with unknown parameter.</p> <p>2. Comprehending and applying technique resolving of equation of correction.</p> <p>3. Explanation of variansi result of</p>	8x50	<p>Mikhail, E. M. (1976), <i>Observation and Least Squares</i>, Dun Donnely Publishers, New York</p> <p>Modell, M.E. (1992), <i>Data Analysis, Data Modelling, and</i></p>

			parameter times 4. Explanations of variansi result of parameter times. 5. Explanations of variansi in a parameter function		<i>Classification</i> , McGraw Hill International Edition, New York Purworaharjo, U. (1998), <i>Ilmu Hitung Perataan</i> , Institut Teknologi Bandung, Bandung
			6. Problem practices calculate least square of parameter method. 7. Determination to the number of conditions of geometrik which do not each other linking. 8. Explanation of conditional resolving technique. 9. Explaining variance measure result of least square. 10. Finishing problem calculate least square of conditional method. 11. Explanation of function of implisit non-linier (mix adjustment model). 12. Explanation of resolving of		Spiegel, M.R. (1996), <i>Statistika</i> , Penerbit Erlangga, Jakarta

			<p>equation of combination</p> <p>13. Finishing problem practice calculate combination least square method.</p>		
			<p>14. Review of lecture's topic about parametric, conditional and combination least square method</p> <p>15. Practice enrichment of parametric, condition and mix least square method problem.</p> <p>16. Explaining definition and usefulness of Error Eclipse</p> <p>17. Explaining measure and orientation of Error Eclipse</p>		