

**Subject : Computer Applications (1)**

**Class: Second Year**

**Hours : 1hrs ( Theoretical ) , 2hrs ( Practical )**

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**Objectives:**

The student must know the use of engineering software programs related to its rules and theories has been taught to student previously.

<b>Week</b>	<b>Syllabus</b>
<b>1</b>	<b>Introduction to Surfer v.10.</b>
<b>2&amp;3</b>	<b>Review theories and formulas using in surveying.</b>
<b>4&amp;5&amp;6</b>	<b>Explain of Surfer program interface and use the program to draw the contour lines in limited area.</b>
<b>7&amp;8&amp;9</b>	<b>Explain of icons and description of input data.</b>
<b>10</b>	<b>Discussion of the program results based on input data.</b>
<b>11&amp;12</b>	<b>Examples and assignments with discuss the procedure of input and output data.</b>
<b>13&amp;14&amp;15</b>	<b>Using the program to find the amount volumes of cut and fill for any construction based on the design level proposed earlier, theories, procedure and examples.</b>
<b>16&amp;17</b>	<b>Introduction to Prokon v.2.4.</b>
<b>18&amp;19</b>	<b>Review theories and formulas using in drawing of shear and moment diagrams.</b>
<b>20&amp;21&amp;22</b>	<b>Explain of Prokon program interface and use the program to draw the diagrams of shear and moments and analysis of beam.</b>
<b>23&amp;24&amp;25</b>	<b>Explain of icons and description of input data.</b>
<b>26</b>	<b>Discussion of the program results based on input data.</b>
<b>27&amp;28</b>	<b>Examples and assignments with discuss the procedure of input and output data.</b>
<b>29&amp;30</b>	<b>Using the program to find the results of many problems in behavior of beams and columns and problems of strength of materials, theories, procedure and examples.</b>

## **References:**

- 1- Crane, R. (1997) *A Simplified Approach to Image Processing: Classical and Modern Techniques in C*, Prentice Hall PTR, Upper Saddle River, NJ, 317 pp. ISBN: 0-13-226416-1.
- 2- Pitas, I. (2000) *Digital Image Processing Algorithms and Applications*, John Wiley and Sons, New York, 419 pp. ISBN: 0-471-37739-2.
- 3- Prokon, Ltd. 2005. User Manual, Version 2.1, (attached to software CD).
- 4- Golden Software, Inc. 2009. User Manual, Version 10, CO 80401-1866, USA.