Course Syllabus

Academic year: 2018-2019

<table>
<thead>
<tr>
<th>Institution</th>
<th>University of Petroșani</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>Mechanical and Electrical Engineering</td>
</tr>
<tr>
<td>Field of study</td>
<td>Industrial engineering</td>
</tr>
<tr>
<td>Level</td>
<td>Bachelor</td>
</tr>
<tr>
<td>Program of study</td>
<td>Machine Building Technology</td>
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</tbody>
</table>

Course | Mathematical analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>2BB1OD03</th>
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</thead>
<tbody>
<tr>
<td>Year of study (semester)</td>
<td>II (III)</td>
</tr>
<tr>
<td>Number of hours</td>
<td>56</td>
</tr>
<tr>
<td>Number of credits</td>
<td>5</td>
</tr>
<tr>
<td>Professor</td>
<td>Professor eng.,Ph.D. KECS Wilhelm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>CROWDS AND FUNCTIONS. Multitudes and crowd operations. The geometric representation of the sets and. Functions. Types and classes of functions. The cardinality of a crowd.</td>
</tr>
</tbody>
</table>


10. CURVILINEAR INTEGRALS. Integrates the curvature of the second species (or in relation to the coordinates). Calculation formula of the second case curvilinear. Properties of the second case curvilinear. Integral curvilinear along a closed curve. The conditions that a complete curvilinear (of the second) do not depend on the integration path. Integrating the first curvilinear (or in relation to the length of the curve arc). The properties of the first curvilinear integrals. Dependence between the first and second case curvilinear integers. Applications of the first curvilinear integrals.


<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>13.</td>
<td>SURFACE INTEGRALS. Forms of representation of a surface portion. Formulas for calculating the area of a surface portion. Oriented surfaces. The definition of the surface integrity with respect to the area (the first type surface integral). Properties. Calculation principle. The definition of the surface integrity with respect to the coordinates (surface type integrals of the second type). Properties and calculation principle. Applications of the surface integrity.</td>
</tr>
</tbody>
</table>