1. Coverage

Over the last few years, the software engineering community has developed some important education means. The Software Engineering Body of Knowledge (SWEBOK) [1] classifies the SE knowledge using 15 knowledge areas (KA), 99 topics and 305 sub-topics. In our approach, the SWEBOK is used to select notions covered by the SE project courses variants.

2. Design

Variation Points

- SE knowledge areas
- SE tools & technologies
- Application domains
- Course administration and management

Product Derivation

- Top-down
- Bottom-up-and-down
- Hybrid

Qualities

- Functional suitability
- Performance efficiency
- Compatibility
- Reliability
- Security
- Maintainability
- Portability

Work Summary

The MESSEP approach offers to instructors a product-line approach to SE project courses allowing to derive its own course in an efficient way. Our approach is illustrated using several courses that we designed and performed in different universities and at different education levels. Since 2012, we have derived five SE project course variants using our approach in three different education institutions.

Reference Card

<table>
<thead>
<tr>
<th>KA</th>
<th>Sub-Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>KA1</td>
<td>Software Requirements: (80%)</td>
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<tr>
<td>KA2</td>
<td>Software Design: (46%)</td>
</tr>
<tr>
<td>KA3</td>
<td>Software Construction: (39%)</td>
</tr>
<tr>
<td>KA4</td>
<td>Software Maintenance: (63%)</td>
</tr>
<tr>
<td>KA5</td>
<td>Professional Practice: (63%)</td>
</tr>
<tr>
<td>KA6</td>
<td>Software Configuration Management: GitHub (3), Git (3)</td>
</tr>
<tr>
<td>KA7</td>
<td>Software Engineering Management:</td>
</tr>
<tr>
<td>KA8</td>
<td>Software Engineering Economics:</td>
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</tbody>
</table>

SE Course Product Variant Coverage Comparison Diagram

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References