

نموذج مصفوفة ارتباط المواد الدراسية بأساليب التعلم وطرائق التقويم - إجراءات إعداد الخطة الدراسية وتحديثها / قسم الفيزياء	QF01/0415-3.0
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Physics	Major	Physics	Department	Science and information technology	College
32	Number of courses		Date of Accreditation	2022-2021	Study Plan No

**Note:** This form is used for major subjects only.

Methods of Measurement and Evaluation	Applied Teaching Methods	Course's Name	Course no
<p>Performance-based evaluation: performance.</p> <p>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</p> <p>Note: questions and answers.</p> <p>Experience work skills</p> <p>Evaluation Tool: Checklist.</p>	<p>Teaching by experience:</p> <ul style="list-style-type: none"> <li>- An introduction to the topic of the experiment.</li> <li>- Conducting an experiment, taking data and analysing it.</li> </ul>	General Physics Lab (1)	0150101
<p>Performance-based evaluation: performance.</p> <p>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</p>	<ul style="list-style-type: none"> <li>- Blended Teaching:</li> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading</li> </ul>	General Physics (2)	0150121

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<p>Note: questions and answers. Experience work skills - Evaluation Tool: Checklist.</p>	<p>activities, problem solving and investigation, videos about the subject (electronically).</p>		
<p>Performance-based evaluation: performance. - Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving). Note: questions and answers. Experience work skills. Evaluation Tool: Checklist.</p>	<p>Teaching by experience: - An introduction to the topic of the experiment. - Conducting an experiment, taking data and analysing it.</p>	General Physics Lab (2)	0150102
<p>Performance-based evaluation: performance. - Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving). Note: questions and answers. Experience work skills. - Evaluation Tool: Checklist.</p>	<p>Direct teaching: (Lecture, questions and answers, workbooks / worksheets, exercises and exercises, reading activities, problem solving and investigation).</p>	Modern Physics	0150231

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<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Mathematical Physics (1)</p>	<p>0150251</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Mathematical Physics (2)</p>	<p>0150252</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets,</li> </ul>	<p>Optics</p>	<p>0150211</p>

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<p>paragraphs (problem solving).</p> <ul style="list-style-type: none"> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</p>		
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Direct teaching: (Lecture, questions and answers, workbooks / worksheets, exercises and exercises, reading activities, problem solving and investigation).</p>	Computational Physics	0150253
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Electronics	0150221

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<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Teaching by experience:</p> <ul style="list-style-type: none"> <li>- An introduction to the topic of the experiment.</li> <li>- Conducting an experiment, taking data and analysing it.</li> </ul>	Electronics lab	0150301
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Electricity and Magnetism (1)	0150321
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets,</li> </ul>	Classical Mechanics (1)	0150311

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<p>paragraphs (problem solving).</p> <ul style="list-style-type: none"> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</p>		
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Direct teaching: (Lecture, questions and answers, workbooks / worksheets, exercises and exercises, reading activities, problem solving and investigation).</p>	Quantum Mechanics (1)	0150331
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Teaching by experience:</p> <ul style="list-style-type: none"> <li>- An introduction to the topic of the experiment.</li> <li>- Conducting an experiment, taking data and analysing it.</li> </ul>	Optometry Lab	0150302

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<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Electricity and Magnetism (2)</p>	<p>0150322</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Thermodynamics</p>	<p>0150341</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets,</li> </ul>	<p>Classical Mechanics (2)</p>	<p>0150312</p>

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<p>paragraphs (problem solving).</p> <ul style="list-style-type: none"> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</p>		
<p>Performance-based assessment: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, paragraphs with a specific answer, paragraphs with an open answer (solving problems).</li> </ul> <p>Note: Questions and answers.</p> <ul style="list-style-type: none"> <li>- Homework and duties.</li> <li>- Communication</li> <li>- Students' writings (article).</li> <li>- Projects</li> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Quantum Mechanics (2)	0150332
<p>Performance-Based Evaluation: Performance.</p> <p>Pen and paper: Quizzes, selected-answer items.</p>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets,</li> </ul>	Methods of Teaching Physics	0150381



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<ul style="list-style-type: none"> <li>- Note: Questions and answers.</li> <li>- Evaluation Tool: menu list.</li> <li>- Research project</li> </ul>	<p>exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</p>		
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Solid State Physics	0150461
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Nuclear Physics	0150431

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Performance-based evaluation: performance.	Teaching by experience: - An introduction to the topic of the experiment. - Conducting an experiment, taking data and analysing it.	Advanced Practical Physics Laboratory	0150401
- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).	Blended teaching: - Live lecture, questions and answers. - Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).	Nano physics	0150432
Performance-based evaluation: - Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving). - Note: questions and answers. Experience work skills	Blended teaching: - Live lecture, questions and answers. - Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about	Statistical mechanics	0150441

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- Evaluation Tool: Checklist.	the material (electronic).		
<ul style="list-style-type: none"> <li>- Performance-based assessment: performance.</li> <li>- Pen and paper: writing a research paper</li> <li>- Note: Questions and answers.</li> <li>- Homework and duties.</li> <li>- Communication</li> <li>- Students' writings (article).</li> <li>- Projects.</li> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Research Symposium in Physics	0150471
<p>Performance-based evaluation:</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading</li> </ul>	Wave And Vibration Physics	0150313

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<ul style="list-style-type: none"> <li>Note: questions and answers.</li> <li>Experience work skills</li> <li>Evaluation Tool: Checklist.</li> </ul>	<ul style="list-style-type: none"> <li>activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>		
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>Note: questions and answers.</li> <li>Experience work skills</li> <li>Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>Live lecture, questions and answers.</li> <li>Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Astrophysics	0150314
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>Note: questions and answers.</li> <li>Experience work skills</li> <li>Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>Live lecture, questions and answers.</li> <li>Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Medical Physics	0150333

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<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Environmental Physics</p>	<p>0150342</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	<p>Atomic and Molecular Physics</p>	<p>0150433</p>
<p>Performance-based evaluation:</p> <p>performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets,</li> </ul>	<p>Laser physics</p>	<p>0150411</p>

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<p>paragraphs (problem solving).</p> <ul style="list-style-type: none"> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</p>		
<p>Performance-based evaluation: performance.</p> <ul style="list-style-type: none"> <li>- Pen and paper: tests, experiment solution report, and open-ended paragraphs (problem solving).</li> <li>- Note: questions and answers.</li> </ul> <p>Experience work skills</p> <ul style="list-style-type: none"> <li>- Evaluation Tool: Checklist.</li> </ul>	<p>Blended teaching:</p> <ul style="list-style-type: none"> <li>- Live lecture, questions and answers.</li> <li>- Workbooks/worksheets, exercises and exercises, reading activities, problem solving and investigation, and videos about the material (electronic).</li> </ul>	Semiconductor Physics	0150421

	At Committee meeting no		Approved by the study plan committee
	Date of the Meeting		Adopted in Section Council no
	Signature of the Dean of College		Signature of the Head of Department