

**Table 5.2** Course specification

<b>Level:</b> Bachelor
<b>Course title:</b> Fundamentals of photochemistry with chemical kinetics
<b>Status:</b> elective
<b>ECTS:</b> 6
<b>Requirements:</b> none
<b>Course aim</b> <ul style="list-style-type: none"><li>• To enable the acquisition of theoretical and practical knowledge of major photochemical laws and types of photochemical processes,</li><li>• To introduce students with important laws and application of the principles of chemical kinetics,</li><li>• To enable students to perform experiments using appropriate methodology.</li></ul>
<b>Course outcome</b> <p>Upon completion of this course, the student should be able to: understand the basic concepts and principles of photochemistry and chemical kinetics; demonstrate acquired theoretical knowledge; understand principles and theories during solving problems; process experimental results; apply knowledge of kinetic in other fields of chemistry.</p>
<b>Course content</b> <p><i>Theory</i> Selected topics in the following fields: Grotthuss–Draper and Stark-Einstein law, quantum yield, photographic process, primary and secondary photochemical processes, actinometry, photophysical processes, photochemical reactions as a result of activation of molecules under the influence of irradiation. Furthermore, basic concepts related to chemical kinetics, simple and complex chemical reactions, reaction rate in solution and gases, reaction rate theory. Catalysis. Experimental methods in photochemistry and chemical kinetics.</p> <p><i>Practice: Practical classes, OFT, SRW</i> Experimental exercises with determination of characteristic kinetic parameters for some photochemical reactions with a simple mechanism.</p>
<b>Literature</b> <ol style="list-style-type: none"><li>1. K. K. Rohatgi-Mukherjee, Fundamentals of Photochemistry, Wiley Eastern Ltd., New Delhi, Bangalore, Bombay, 1978</li><li>2. B. Wardle, Principles and Applications of Photochemistry, John Wiley and Sons, 2009</li></ol>