

# COURSE GUIDE – extended form

Academic year 2026 – 2027

## 1. Program information

1.1 University	Université de Rouen Normandie
1.2 Faculty	
1.3 Department	UFR Sciences et technologies
1.4 Field	Engineering and Quality for Bioproducts
1.5 Study level	Master
1.6 Specialization	Chemical and Biochemical Process Technology - CBPT

## 2. Course information

2.1.1 Course name	Surfaces coating and décontamination						
2.1.2 Course code	2.1.3. Course category Fundamental/Specialized/Complementary)						
2.2 Course instructor	J Vieillard, G Ladam, P Thébault						
2.3 Course instructors for applied activities (S, L, P, Pr)	n/a						
2.4 Year of study <sup>2</sup>	2	2.5 Semester <sup>3</sup>	3	2.6 Evaluation type <sup>4</sup>	E	2.7 Course type <sup>5</sup>	DOB

## 3. Amount of time estimated for course activities (hours / term)

3.1 Hours /week	3	3.2 course	1,5	3.3a sem.	1,5	3.3b laboratory	3.3c project	3.3.d. practice	
3.4 Total hours from curriculum <sup>6</sup>	42	3.5 course	25	3.6a sem.	21	3.6b laboratory	3.6c project		
Time spent for related activities <sup>7</sup>									Hours
Study of recommended books, course support, scientific papers and course notes									24
Study in library and practical skills development									15
Preparation of seminars / laboratory works / project phases / home works / presentations									15
Evaluation <sup>8</sup>									3
Other activities:									
3.7 Total hours of individual study <sup>9</sup>	59								
3.8 Total hours per semestre <sup>10</sup>	108								
3.9 Number of credits	4								

## 4. Prerequisites (optional)

4.1 curriculum <sup>11</sup>	Concepts of materials, chemistry, and microbiology
4.2 learning outcomes	

## 5. Requirements

5.1 Conditions for course delivery <sup>12</sup>	Blackboard, video projector
5.2 Seminar / Laboratory / Project delivery requirements <sup>13</sup>	Blackboard, video projector, optimization software (EXCEL, GAMS or similar)

## 6. Overall objective of the course

*The course aims to provide students with a foundational understanding of the control of the choice of material and the management of material-product and material/living matter interactions*

## 7. Learning outcomes

<b>Knowledge</b>	The students / graduates:  Have the knowledge of the issues and the different approaches to develop antibacterial and biomolecule-functionalized surfaces. Introduction to surface characterization methods.
<b>Skills</b>	The students / graduates: Know how to identify problems related to surfaces in bio-industries and be able to propose solutions adapted to the material.
<b>Responsibility and autonomy</b>	The student / graduate:  <i>respects ethical principles, standards, and values in the correct and timely completion of professional tasks, by adopting a rigorous, efficient, and responsible work strategy in decision-making and problem-solving;</i> <i>assumes responsibility for contributing to professional knowledge and practices and/or for reviewing the strategic performance of teams;</i> <i>engages in continuous professional development in their field by appropriately using effective lifelong learning methods and techniques.</i>

### 8. Teaching methods

The teaching process will involve participatory lectures and debates, supported by PowerPoint presentations made available to students. These presentations include images and diagrams to make the information easier to understand and assimilate. Each lecture will begin with a brief review of the topics covered in the previous session.

The teaching method is also based on discovery learning models, facilitated through both direct and indirect exploration of reality (e.g., experiments, demonstrations, modelling). Additionally, action-based methods will be employed, such as practical exercises, hands-on activities, and problem-solving tasks.

### 9. Course content

9.1. Courses <sup>15</sup>	Teaching methods	Time allocation
9.1.1. Surface functionalization 1 (Prof J. Veillard)	Interactive lecture	3 hours
9.1.2. Surface functionalization 2 (Prof. G. Ladam)	Guided discussions	10 hours
9.1.3. Antimicrobial surfaces (Prof. P. Thébault)	Clarifying explanations	12 hours

### 10. Evaluation

Activity type	10.1 Evaluation criteria	10.2 Evaluation method	10.3 Percentage of the final grade (recommended to be proportional to the number of hours allocated to each type of activity)
10.4 Type of evaluation: Exam / Assessment	<i>Completeness and correctness of knowledge.</i> <i>Logical coherence, fluency, strength of argumentation.</i> <i>Capacity for analysis, personal interpretation, originality, creativity.</i> <i>Degree of mastery of specialized terminology and communication skills.</i> <i>Ability to apply acquired skills.</i>	<i>Systematic observation of students (individual/team assignments – assignments must be completed during the week between lectures, preparation of a report – case study).</i>	100%
		<i>Formative assessment test (ongoing evaluations throughout the semester).</i>	

	<i>Ability to process data and solve given problems.</i>	<i>Summative assessment test (final evaluation).</i>	<i>X</i>	
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10.6 Conditions for passing
A minimum grade of ECTS' E or up is the minimal learning outcomes required for the course and the awarding of the corresponding study credits.

Date:

Course instructor:

Course instructors for applied activities:

Date of approval by the department:

Head of Department

Date of approval by the Faculty Council:

Dean,