Assessment plan for the curriculum of the Master's degree programme in Biomolecular Sciences, 2026-2027

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1. Vision on assessment

1. Assessment guides and evaluates student learning towards knowledge and understanding of phenomena in the field of biomolecular sciences.
2. Assessment stimulates the integration of knowledge and skills in a research-based educational context, including the development of (academic) communication skills, collaboration in projects, creative and analytical thinking, and the acquisition of methodological expertise relevant for research in the field of biomolecular sciences.
3. Assessment stimulates the student's ability to perform scientific research in an independent manner: including designing experiments and data collection; critically analyze and interpret results; and effectively communicate the conclusions to an interdisciplinary audience.

2. Assessment guidelines

Please explain the general assessment procedures that are used in the programmes. For example, 4-eyes principle in test design, standardised grading forms, rubrics.

1. Assessment strategies incorporate a mix of formative and summative assessment activities.
2. Formative assessment can be organized online and onsite, all summative assessment is organized onsite.
3. Resits follow the original assessment strategy, unless this is not feasible. In any event, the result of a resit must be a valid and reliable assessment of the student's mastery of the intended learning outcomes.
4. Unless explicitly prohibited in the description of the relevant course unit on Ocasys, students may use AI tools in assignments in which they have to create written products. In assignments in which students have to create written products, how AI tools can be used needs to be defined for all stages of the writing process. When writing assignments make use of AI tools, the assignment must include elements in which the student explains the way the tool is used.
5. Oral exams need to be supervised by at least two examiners, where one person leads the discussion/asks the questions, and the other takes notes or in some other way records the process.
6. In a MSc research project, colloquium, or other learning activity where a student is supervised individually, the student is expected to deliver a final product of sufficient quality after two rounds of feedback (one in an early stage, focusing on design and global structure, the other with detailed comments when a first complete draft is available). If a third round of feedback is needed to achieve a product of sufficient quality, supervisors will take this into account in the determination of the final grade, along with other relevant information.

3. Learning outcomes of the degree programme

Learning outcomes for the degree programme, further specified learning outcomes (where relevant) and/or specified for tracks within the degree programme. Please add extra rows if necessary.

	Learning Outcome *At the end of the programme, the graduate*
1	a) has acquired in depth knowledge on one or more scientific disciplines within the field of Biomolecular Sciences and can use this knowledge to explain in detail the relevant concepts, using the appropriate terminology; b) has acquired cross disciplinary knowledge of issues across scientific disciplines within the field of Biomolecular Sciences and can use this knowledge to explain current societal and scientific challenges;
2	can design, and conduct scientific research, and systematically organize his/her work in scientific research;
3	can independently investigate and critically evaluate scientific literature;
4	can identify new developments in the relevant disciplines, and can become familiar with these developments;
5	can formulate realistic, and original solutions to complex problems;
6	can participate in and contribute to a multidisciplinary team;
7	can effectively communicate acquired knowledge, insights and skills to others, both in writing and in oral presentation;
8	can identify societal and ethical implications of scientific research and is able to critically reflect on his/her actions in this context;
9	can independently acquire new knowledge and skills that are relevant for his/her professional career, in science, in policy & management or society.

4. Overview of assessment methods, test moments for course units, and examiners

This table shows all the course units for each year of the programme and assessment methods. Please add extra rows if necessary.

Year	**Period**	**Course**	**EC**	**Assessment methods** *Multiple answers may apply*	**Does (part of the) assessment have a formative function?**	**Test moment(s)** *Multiple answers may apply* (e.g. mid-term, continuous assessment, exam week, etc)	**First examiner**	**Second examiner**
	1A1	Introduction to Biomolecular Research	5	P	No	End	Prof.dr. M.W. Fraaije	Dr. A.M.W.H. Thunnissen
	1A2	Molecular dynamics	5	WE/P	No	End	Prof. Dr. S.J. Marrink	Dr. A.H. de Vries
	1A2	Tools and approaches of systems biology	5	WE	Yes	End, Halfway	Prof. Dr. M. Heinemann	Dr. A. Milias Argeitis
	1A3	Molecular Modeling and Analysis in Structural Biology	5	WE	Yes	End, Halfway	Prof. dr. A. Guskov	Dr. A.M.W.H. Thunnissen
	1A3	Advanced Light Microscopy	5	AST/ P/WE	Yes	End, Halfway	Dr. F. Bianchi	Dr. R. Vlijm
	1B1	Advanced Membrane Biology	5	WE/P	Yes	End	Prof. Dr. B. Poolman	Prof. dr. D.J. Slotboom
	1B1	Next-generation sequencing methods and data analysis	5	AST/ P	No	End, Halfway, Start	Dr. A. de Jong	Dr. D. Incarnato
	1B2	Protein and Enzyme Engineering	5	P/ AST	No	End, Halfway	Prof. Dr. G. Maglia	Prof. Dr. ir. M.W. Fraaije
	1B2	Advanced Mammalian Cell Biology	5	WE/MC/ P	Yes	End, Halfway	Dr. A. Kortholt	Dr. F. Bianchi

Year	Period	Course	EC	**Assessment methods** *Multiple answers may apply*	**Does (part of the) assessment have a formative function?**	**Test moment(s)** *Multiple answers may apply* (e.g. mid-term, continuous assessment, exam week, etc)	**First examiner**	**Second examiner**
	1B3	Advanced genetic engineering (and complex gene regulatory circuitries)	5	P, WE	Yes	End	Prof. Dr. T.E.F. Quax	Dr. Max Furst
	1B3	Electron Microscopy of Biological Macromolecules	5	AST, M, WE	No	End, Halfway	Dr. A. Belyy	Dr. M.C.A. Stuart
	2b/1a	International Genetically Engineered Machine competition (iGEM) (Biennial)	20	R	No	Halfway	Dr. A.M.W.H. Thunnissen	Prof. Dr. G. Moll

The abbreviations for the relevant teaching methods are explained in the legend of the table.
Examples of assessment methods include:

- *Written Exam (WE)*
- *Multiple Choice (MC)*
- *Oral Exam (OR)*
- *Midterm (M)*
- *Report (R)*
- *Presentation (P)*
- *Assignment (AST)*

5. Relationship between course units and details of the learning outcomes

Please note in the table below the course units per block in the programme. Indicate which learning outcomes are assessed in which courses by adding an X in the relevant cell. Please add extra rows if necessary.
An X means that the learning outcome is explicitly assessed (not merely addressed) in the course.

		Learning outcomes of the degree programme																		
		1	2	3	4	5	6	7	8	9										
Period	**Course**	**Year 1 –compulsory courses*** 4 courses available from block 1A2 till 1B3 need to be taken as compulsory courses; simultaneously offered courses can be taken as elective in the second year.																		
1A1	Introduction to Biomolecular Research	X	X	X	X	X	X	X	X	X										
1A2	Molecular dynamics	X	X	X		X		X												
1A2	Tools and approaches of systems biology	X	X	X	X			X		X										
1A3	Molecular Modeling and Analysis in Structural Biology	X	X	X		X		X		X										
1A3	Advanced Light Microscopy	X	X		X			X		X										
1B1	Advanced Membrane Biology	X	X	X	X	X		X												
1B1	Next-generation sequencing methods and data analysis	X	X	X	X	X	X	X	X	X										
1B2	Protein and Enzyme Engineering	X	X	X		X		X		X										

		Learning outcomes of the degree programme																		
1B2	Advanced Mammalian Cell Biology	X	X	X	X	X		X		X										
1B3	Advanced genetic engineering (and complex gene regulatory circuitries)	X	X	X	X	X		X	X	X										
1B3	Electron Microscopy of Biological Macromolecules	X	X	X	X			X												
2	Research Project 1	X	X	X	X	X	X	X	X	X										
Period	**Course**	**Year 1 Electives (if applicable)**																		
Period	**Course**	**Year 2 compulsory courses**																		
	Research Project 2	X	X	X	X	X	X	X	X	X										
	Colloquium	X		X	X	X		X	X	X										
Period	**Course**	**Year 2 Electives (if applicable)**																		
2b/1a	International Genetically Engineered Machine competition (iGEM)	X	X	X	X	X	X	X	X	X										