Exam History of Science

Date: Tuesday June 7, 2022	Lecturer: dr. D.J. Beckers
Time: 13:30 – 15:45u	Course code: FEW X 400652

In general:
1. Make sure your name and student number are on ALL your work.
2. Answer in English sentences. Spelling and grammar should be correct, either to the English or to the US standards. Just a few buzzwords never constitute an answer. Always explain yourself. Use appropriate examples to illustrate your answer.
3. This exam consists of 12 A-questions and 8 B-questions. The A-questions are about the lectures and the syllabus. The B-questions require you to reflect.
4. If you're entitled to a bonus, you pick eight questions: 5 A-questions and 3 B-questions.
5. If you're *not* entitled to a bonus point, you pick 5 A-questions, answer question B-1 *and* pick three other B-questions.
6. Each question is worth 1 point (or nothing!). Indicate clearly which questions you're answering by mentioning either the number and / or the title of the question in your answer. If you answer more than required, only the first answers will be considered.

A-questions

1. Christian church
To what extent did the Christian church contribute to early medieval mathematics?

2. Universitas
Describe two ways in which the universitas contributed to mathematics in medieval Europe.

3. Leibniz
In what ways did Euler contribute to the universality of mathesis?

4. Moral algebra
To what extent was moral algebra an Enlightenment idea? To what extent was it mathematical?

5. Pure mathematics
Describe the rise of pure mathematics in the early 19th century. What was new about it?

6. Professionalization
How can the role of mathematics in 19th century education be connected to the professionalization of mathematics?

7. Statistics and modernism
In the early 20th century, statistics had both a very mundane, and a very modernistic aspect. Explain that statement, using some specific examples to illustrate your case.

8. Mathematical logic
The role of mathematical logic changed in the 19th and 20th century. In what ways?

9. Mathematics as a production factor
After World War II, mathematics became a "production factor". Elaborate on that statement and provide examples to illustrate the statement.

10. Social science
To what extent did the late 20th-century social sciences represent a *mathematical* practice?

11. Marketing
To what extent has online marketing become a mathematical practice?

12. Systems thinking
Describe the late twentieth-century rise of systems thinking. Mention at least two specific examples to illustrate your narrative.

B-questions:

1. Statistics
Statistics wasn't always a part of mathematics. Describe the 17th/18th century change in the attribution of the subject, and discuss social / economical changes that contributed to that change.

2. Mathematical progress
Does "mathematical progress" help to understand the rising number of mathematical practices in Western culture?

3. Business analyst
Should we regard Frederick Taylor as a business analyst?

4. Fortune telling
Can predicting the future be considered a mathematical practice?

5. Metric system
In what ways is the metric system inherently difficult?

6. Model
The rise of mathematical modeling changed mathematical practices fundamentally. Reflect on that statement.

7. Mathematics education
Does mathematics education reflect the importance society attributes to mathematics?

8. Practices
In what ways does the concept of "practices" help to describe a history of the role of mathematics in (Western) culture?