## Programme curriculum

Programme, level of studies INFORMATICS (BA DEGREE STUDIES)
Cycle from academic year 2023/2024
Predicted number of students starting the cycle 30
Year I Semester I

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number of groups | Total hours | $\begin{aligned} & \text { ECTS } \\ & \text { Points } \end{aligned}$ | Reference to programme learning outcomes |
| 1. | Computer architecture | lecture | 15 | Exam | 1 | 15 | 3 | K_W01,K_U04, K_U06, K_U30, K_K01 |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
| 2. | Computer networks and Internet | lecture | 15 | Exam | 1 | 15 | 5 | $\begin{array}{\|c} \hline \text { K_W01, K_W04, K_U02, K_U04, K_U06, K_U15, K_U17, } \\ \text { K_U24, K_U30, K_K01, K_K02 } \end{array}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 3. | Introduction to computer science | lecture | 30 | Exam | 1 | 30 | 7 | K_W01, K_W03, K_W04, K_W06, K_U01, K_U02, K_U04, K_U06, K_U07, K_U08, K_U11, K_U17, K_K01, K_K02 |
|  |  | laboratory | 45 | Graded Pass | 2 | 90 |  |  |
| 4. | Introduction to differential and integral calculus | lecture | 30 | Exam | 1 | 30 | 5 | K_W02, K_W05, K_U03, K_U21, K_U22, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 5. | Linear algebra | lecture | 15 | Exam | 1 | 15 | 5 | K_W02, K_U03, K_U21, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 6. | Logic | lecture | 10 | Exam | 1 | 10 | 2 | zgodnie z uchwatq Senatu KUL |
|  |  | class | 15 | Graded Pass | 2 | 30 |  |  |
| 7. | Protection of intellectual property | lecture | 15 | Graded Pass | 1 | 15 | 1 | K_W08 |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Foreign language | $\left\lvert\, \begin{aligned} & \text { toreIgn } \\ & \text { language } \end{aligned}\right.$ \|classes | 30 | Graded Pass |  |  | 2 | zgodnie z uchwałq Senatu KUL |
| 2. | Physical education | class | 30 | Pass |  |  | 0 | zgodnie z uchwałq Senatu KUL |

* The student undergoes training: Health and safety procedures training, Student rights and obligations, Student culture and ethos

| NUMBER OF TEACHING HOURS PER SEMESTER <br> PER STUDENT: | 355 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | $\mathbf{3 0}$ |

## Programme curriculum

Programme, level of studies INFORMATICS (BA DEGREE STUDIES)

## Cycle from academic year 2023/2024

Predicted number of students starting the cycle 30
Year I Semester II

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number of groups | Total hours | ECTS <br> Points | Reference to programme learning outcomes |
| 1. | Algorithms of numerical analysis | lecture | 15 | Exam | 1 | 15 | 3 | $\begin{gathered} \text { K_W03, K_W06, K_U04, K_U07, K_U08, K_U11, K_U17, } \\ \text { K_U20, K_U22, K_K01 } \end{gathered}$ |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
| 2. | Analytic geometry | lecture | 15 | Exam | 1 | 15 | 3 | K_W02, K_U03, K_U21, K_U22, K_K01 |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
| 3. | Computer graphics | laboratory | 15 | Graded Pass | 2 | 30 | 2 | K_W11, K_U01, K_U02, K_U04, K_U17, K_U25, K_K01, K_K02 |
| 4. | Discrete mathematics | lecture | 30 | Exam | 1 | 30 | 5 | K_W09, K_U21, K_U22, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 5. | Entrepreneurship | workshops | 15 | Graded Pass | 2 | 30 | 1 | zgodnie z uchwałq Senatu KUL |
| 6. | Fundamentals of algorithms and programming | lecture | 30 | Exam | 1 | 30 | 6 | K_W01, K_W03, K_W06, K_U02, K_U04, K_U07, K_U08, K_U09, K_U11, K_U12, K_U17, K_K01, K_K02 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 7. | Operating systems | lecture | 15 | Exam | 1 | 15 | 4 | $\begin{gathered} \text { K_W01, K_W04, K_U01, K_U02, K_U04, K_U17, K_U19, } \\ \text { K_K01, K_K02, K_K04 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 8. | Tutoring | workshops | 15 | Graded Pass | 2 | 30 | 1 | zgodnie z uchwałq Senatu KUL |
| 9. | Websites design | laboratory | 30 | Graded Pass | 2 | 60 | 3 | K_W01, K_W06, K_U02, K_U04, K_U05, K_U17, K_K01, K_K04 |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Foreign language | foreign <br> language classes | 30 | Graded Pass |  |  | 2 | zgodnie z uchwałq Senatu KUL |
| 2. | Physical education | class | 30 | Pass |  |  | 0 | zgodnie z uchwałq Senatu KUL |


| NUMBER OF TEACHING HOURS PER SEMESTER <br> PER STUDENT: | 360 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | $\mathbf{3 0}$ |

## Programme curriculum

## Programme, level of studies INFORMATICS (BA DEGREE STUDIES)

Cycle from academic year 2023/2024
Predicted number of students starting the cycle
30
Year II Semester III

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number of groups | Total hours | ECTS <br> Points | Reference to programme learning outcomes |
| 1. | Computer modeling and simulations | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \hline \text { K_W01, K_W05, K_W06, K_W11, K_U03, K_U06, K_U11, } \\ \text { K_U17, K_K01 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 2. | Databases I | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \hline \text { K_W01, K_W04, K_W10, K_U02, K_U04, K_U14, K_U17, } \\ \text { K_U22, K_U23, K_U26, K_U27, K_U30, K_K01, K_K02 } \\ \hline \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 3. | Foundations of probabilistic methods | lecture | 30 | Exam | 1 | 30 | 5 | K_W09, K_U22, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 4. | History of philosophy | lecture | 30 | Exam | 1 | 30 | 2 | zgodnie z uchwałq Senatu KUL |
| 5. | Object-oriented programming | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \hline \text { K_W01, K_W03, K_W06, K_U04, K_U06, K_U07, K_U08, } \\ \text { K_U10, K_U11, K_U12, K_U17, K_K01 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Foreign language | foreign language classes | 30 | Graded Pass |  |  | 2 | zgodnie z uchwałq Senatu KUL |
| SPECIALISATION COURSES (Student choose one specialisation) |  |  |  |  |  |  |  |  |
| Specialisation: programming and information processing |  |  |  |  |  |  |  |  |
| 1. | Data protection | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W03, K_W04, K_W06, K_W10, K_U02, K_K01, K_K05 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| Specialisation: computer graphics and multimedia |  |  |  |  |  |  |  |  |
| 1. | Mathematical basics for computer graphics | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W02, K_W11, K_U02, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 1 | 30 |  |  |


| NUMBER OF TEACHING HOURS PER SEMESTER <br> PER STUDENT: | 360 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | $\mathbf{2 9}$ |

## Programme curriculum

Programme, level of studies INFORMATICS (BA DEGREE STUDIES)
Cycle from academic year 2023/2024
Predicted number of students starting the cycle 30
Year II Semester IV

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number <br> of groups | Total hours | ECTS <br> Points | Reference to programme learning outcomes |
| 1. | Algorithms and data structures | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \hline \text { K_W01, K_W03, K_W06, K_U06, K_U08, K_U10, } \\ \text { K_U11, K_U12, K_U17, K_K01, K_K02 } \\ \hline \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 2. | Artificial intelligence | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \text { K_W01, K_W10, K_U02, K_U04, K_U09, K_U10, } \\ \text { K_U16, K_U23, K_K01 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 3. | Object-oriented programming II | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \hline \text { K_W01, K_W03,K_W06, K_U04, K_U07, K_U08, } \\ \text { K_U10, K_U11, K_U12, K_U17, K_K01 } \\ \hline \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 4. | Project management | lecture | 15 | Exam | 1 | 15 | 3 | $\begin{gathered} \hline \text { K_W01, K_W04, K_W06, K_U01, K_U04, K_U17, } \\ \text { K_K01, K_K02, K_K04, K_K05 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 5. | Statistical analysis of data | lecture | 30 | Exam | 1 | 30 | 5 | K_W09, K_U22, K_U28 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Foreign language | foreign language classes | 30 | Graded Pass |  |  | 2 | zgodnie z uchwałq Senatu KUL |
|  |  | exam |  | Exam |  |  | 1 |  |
| SPECIALISATION COURSES (Student choose one specialisation) |  |  |  |  |  |  |  |  |
| Specialisation: programming and information processing |  |  |  |  |  |  |  |  |
| 1. | Internet applications development | tutorial | 30 | Graded Pass | 1 | 30 | 5 | K_W06, K_U02, K_U04, K_U05, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| Specialisation: computer graphics and multimedia |  |  |  |  |  |  |  |  |
| 1. | Methods and algorithms for computer graphics | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W11, K_U02, K_U04, K_U25, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 1 | 30 |  |  |

* student choose practical placement - 3 weeks ( 120 h ) during summer holiday (course credit in 5th semester)

| NUMBER OF TEACHING HOURS PER SEMESTER <br> PER STUDENT: | 375 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | $\mathbf{3 1}$ |

## Programme curriculum

## Programme, level of studies INFORMATICS (BA DEGREE STUDIES)

Cycle from academic year 2023/2024
Predicted number of students starting the cycle 30
Year III Semester V

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number of groups | Total hours | ECTS <br> Points | Reference to programme learning outcomes |
| 1. | Ethics | lecture | 25 | Exam | 1 | 25 | 1 | zgodnie z uchwałq Senatu KUL |
| 2. | Marriage and family in Christian anthropology | tutorial | 25 | Graded Pass | 1 | 25 | 2 | zgodnie z uchwałq Senatu KUL |
| 3. | Optimization methods | lecture | 15 | Exam | 1 | 15 | 3 | $\begin{gathered} \hline \text { K_W01, K_W03, K_W06, K_U07, K_U11, K_U20, } \\ \text { K_U22, K_K01, K_K02 } \end{gathered}$ |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
| 4. | Python language programming | lecture | 15 | Exam | 1 | 15 | 3 | $\begin{gathered} \text { K_W01, K_W06, K_U04, K_U08 K_U11, K_U17, } \\ \text { K_K01, K_K02, K_K05, K_K06 } \end{gathered}$ |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
| 5. | Software engineering | lecture | 30 | Exam | 1 | 30 | 5 | $\begin{gathered} \text { K_W04, K_W06, K_U02, K_U04, K_U13, K_U14, } \\ \text { K_U17, K_U23, K_U29, K_U30, K_K01, K_K02, } \\ \text { K_K04, K_K05 } \end{gathered}$ |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Laboratory of programming* | laboratory | 30 | Graded Pass | 2 | 60 | 3 | K_W06, K_W08, K_U08, K_U17, K_K06 |
| 2. | Seminar** | seminar | 30 | Pass | 1 | 30 | 2 | $\begin{gathered} \hline \text { K_W08, K_U02, K_U17, K_U18, K_U23, K_U29, } \\ \text { K_U30, K_K01, K_K03, K_K05 } \end{gathered}$ |
| 3. | Practical placement | practical placement | 120 | Pass |  |  | 4 | $\begin{gathered} \text { K_ W07, K_W08, K_U01, K_U02, K_U04, K_U17, } \\ \text { K_K01, K_K02, K_K03, K_K04, K_K06 } \end{gathered}$ |
| SPECIALISATION COURSES (Student choose one specialisation) |  |  |  |  |  |  |  |  |
| Specialisation: programming and information processing |  |  |  |  |  |  |  |  |
| 1. | Graph and network theory | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W03, K_W04, K_W06, K_U02, K_U04, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 2. | Machine learning | laboratory | 30 | Graded Pass | 2 | 60 | 3 | K_W03, K_W05, K_W06, K_W09, K_W10, K_U02, K_U03, K_U04, K_U06, K_K01, K_K05, K_K06 |
| Specialisation: computer graphics and multimedia |  |  |  |  |  |  |  |  |


| 1. | Internet graphic design | laboratory | 30 | Graded Pass | 1 | 30 | 3 | K_W11, K_U02, K_U04, K_U25, K_K01 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2. | Multimedia programming | tutorial | 30 | Graded Pass | 1 | 30 | 5 | K_W03, K_W04, K_W11, K_U02, K_U04, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 1 | 30 |  |  |

* student choose 1 laboratory (list of optional courses in the annex no. 9)
** student choose 1 seminar (list of optional courses in the annex no. 9)

| NUMBER OF TEACHING HOURS PER SEMESTER <br> PER STUDENT: | 320 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | 31 |

## Programme curriculum

## Programme, level of studies INFORMATICS (BA DEGREE STUDIES)

Cycle from academic year 2023/2024
Predicted number of students starting the cycle
30
Year III Semester VI

|  | COMPULSORY COURSES |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Course name | Type of class | Number of teaching hours | Form of assessment | Number of groups | Total hours | ECTS <br> Points | Reference to programme learning outcomes |
| 1. | Algorithms and computational complexity | lecture | 15 | Exam | 1 | 15 | 3 | $\begin{gathered} \text { K_W01, K_W03, K_W06, K_U04, K_U07, K_U08, K_U09, } \\ \text { K_U17, K_U22, K_K01, K_K02 } \end{gathered}$ |
|  |  | laboratory | 15 | Graded Pass | 2 | 30 |  |  |
|  | ELECTIVE COURSES |  |  |  |  |  |  |  |
| 1. | Labolatory of programming* | laboratory | 30 | Graded Pass | 2 | 60 | 3 | K_W06, K_W08, K_U08, K_U17, K_K06 |
| 2. | Programming project** | laboratory | 30 | Pass | 3 | 90 | 3 | K_W08, K_U02, K_U04, K_U08, K_U17, K_U23, K_U30 |
| 3. | Seminar*** | seminar | 30 | Pass | 3 | 90 | 2 | K W08, K U02, K U17, K U18, K U23, K U29, K U30, |
| 4. | BA project and preparation for a diploma examination | assignment |  | Pass |  |  | 10 | K_K01, K_K03, K_K05 |
| SPECIALISATION COURSES (Student choose one specialisation) |  |  |  |  |  |  |  |  |
| Specialisation: programming and information processing |  |  |  |  |  |  |  |  |
| 1. | Databases II | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W10, K_U02, K_U04, K_U26, K_U27, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 2 | 60 |  |  |
| 2. | Practice of programming | laboratory | 30 | Graded Pass | 2 | 60 | 3 | K_W04, K_W06, K_U02, K_U04,K_U13, K_K01, K_K06 |
| Specialisation: computer graphics and multimedia |  |  |  |  |  |  |  |  |
| 1. | Computer image analysis | lecture | 30 | Graded Pass | 1 | 30 | 5 | K_W03, K_W04, K_W06, K_W11, K_U02, K_U04, K_K01 |
|  |  | laboratory | 30 | Graded Pass | 1 | 30 |  |  |
| 2. | Computer animation | laboratory | 30 | Graded Pass | 1 | 30 | 3 | K_W11, K_U02, K_K01 |

* student choose 1 laboratory (list of optional courses in the annex no. 9)
** student choose 1 programming project (list of optional courses in the annex no. 9)
*** student choose seminar (list of optional courses in the annex no. 9), student is required to prepare BA project

| NUMBER OF TEACHING HOURS PER <br> SEMESTER PER STUDENT: | 210 |
| :--- | ---: |
| ECTS POINTS PER SEMESTER PER STUDENT: | 29 |


| NUMBER OF TEACHING HOURS PER CYCLE |  |
| :--- | ---: |
| PER STUDENT: | 1980 |
| ECTS POINTS PER CYCLE PER STUDENT: | 180 |

