



2019 г.

## Profiling: Laser physics

**Form of Education:** full-time

## II. Summary (in weeks)

| Y<br>E<br>A<br>R<br>S | September |  |    |  | October |  |    |    | November |  |    |  | December |   |    |  | January |   |    |   | February |   |    |   | March |    |    |   | April |   |    |  | May |   |    |   | June |   |    |   | July |   |    |   | August |   |    |   | Academic Studies | Exams | Internship | Research | Master's Thesis | Vacation | Total |    |    |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|-----------|--|----|--|---------|--|----|----|----------|--|----|--|----------|---|----|--|---------|---|----|---|----------|---|----|---|-------|----|----|---|-------|---|----|--|-----|---|----|---|------|---|----|---|------|---|----|---|--------|---|----|---|------------------|-------|------------|----------|-----------------|----------|-------|----|----|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                       | 1         |  | 8  |  | 15      |  | 22 |    | 29       |  | 6  |  | 13       |   | 20 |  | 27      |   | 4  |   | 11       |   | 18 |   | 25    |    | 1  |   | 8     |   | 15 |  | 22  |   | 29 |   | 6    |   | 13 |   | 20   |   | 27 |   | 4      |   | 11 |   |                  |       |            |          |                 |          |       | 18 |    | 25 |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       | 7         |  | 14 |  | 21      |  | 28 |    | 05       |  | 12 |  | 19       |   | 26 |  | 02      |   | 09 |   | 16       |   | 23 |   | 30    |    | 06 |   | 13    |   | 20 |  | 27  |   | 03 |   | 10   |   | 17 |   | 24   |   | 31 |   | 07     |   | 14 |   |                  |       |            |          |                 |          |       | 21 |    | 28 |  | 04 |  | 11 |  | 18 |  | 25 |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       | 10        |  | 17 |  | 24      |  | 31 |    | 01       |  | 08 |  | 15       |   | 22 |  | 29      |   | 05 |   | 12       |   | 19 |   | 26    |    | 02 |   | 09    |   | 16 |  | 23  |   | 30 |   | 06   |   | 13 |   | 20   |   | 27 |   | 03     |   | 10 |   |                  |       |            |          |                 |          |       | 17 |    | 24 |  | 31 |  | 07 |  | 14 |  | 21 |  | 28 |  | 04 |  | 11 |  | 18 |  | 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| I                     |           |  |    |  |         |  |    |    |          |  |    |  | 18       |   |    |  | :       | : | :  | = | =        |   |    |   |       | 17 |    |   |       |   |    |  | :   | : | :  | : | =    | = | =  | = | =    | = | =  | = | =      | = | =  | = | =                | =     | =          | 35       | 7               |          |       |    | 10 | 52 |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| II                    |           |  |    |  |         |  |    | 14 |          |  |    |  | :        | = | =  |  |         |   | 8  |   |          | : | X  | X | X     | X  | /  | / | /     | / | // |  |     |   |    |   |      |   |    |   |      |   |    |   |        |   |    |   |                  |       |            |          |                 |          |       |    |    |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Legend: ☐ — Academic Studies      ☒ — Internship      ☐ — Master's Thesis  
☐ — Exams      ☐ — Research      ☐ — Vacation

| No    | The name of the module, academic discipline, course project (course work)    | Exams | End-of-term test | Academic hours |                |             |                 |           |                 | Semesters            |                |         |                      |                |         |                      |                |         |                     |                |         | Competence Code    |
|-------|------------------------------------------------------------------------------|-------|------------------|----------------|----------------|-------------|-----------------|-----------|-----------------|----------------------|----------------|---------|----------------------|----------------|---------|----------------------|----------------|---------|---------------------|----------------|---------|--------------------|
|       |                                                                              |       |                  | Total          | Total in class | As follows: |                 |           |                 | I year               |                |         |                      |                |         | II year              |                |         |                     |                |         |                    |
|       |                                                                              |       |                  |                |                | Lectures    | Laboratory work | Workshops | Seminar classes | 1 semester, 18 weeks |                |         | 2 semester, 17 weeks |                |         | 3 semester, 14 weeks |                |         | 4 semester, 8 weeks |                |         |                    |
|       |                                                                              |       |                  |                |                |             |                 |           |                 | Total                | Total in class | Credits | Total                | Total in class | Credits | Total                | Total in class | Credits | Total               | Total in class | Credits |                    |
| 1.    | State Component                                                              |       |                  | 1560           | 462            | 246         | 72              | 120       | 24              | 846                  | 318            | 24      | 534                  | 144            | 15      | 90                   |                | 3       | 90                  |                | 3       |                    |
| 1.1.  | Modulus «Technical applications of theoretical physics»                      |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                    |
| 1.1.1 | Condensed state physics                                                      | 1     |                  | 216            | 90             | 46          |                 | 44        |                 | 216                  | 90             | 6       |                      |                |         |                      |                |         |                     |                |         | UC -1, 2<br>DPC -1 |
| 1.1.2 | Applied problems in thermodynamics and statistical physic                    | 1     |                  | 216            | 90             | 46          |                 | 44        |                 | 216                  | 90             | 6       |                      |                |         |                      |                |         |                     |                |         | UC -1, 2<br>DPC -2 |
| 1.1.3 | Physics of energy and wave processes                                         | 1     |                  | 108            | 48             | 36          |                 |           | 12              | 108                  | 48             | 3       |                      |                |         |                      |                |         |                     |                |         | UC -1, 2<br>DPC -3 |
| 1.1.4 | Modern problems of physics                                                   |       | 2                | 108            | 48             | 36          |                 |           | 12              |                      |                |         | 108                  | 48             | 3       |                      |                |         |                     |                |         | UC -1, 2<br>DPC -4 |
| 1.2.  | Modulus «Mathematical methods in physics»                                    |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                    |
| 1.2.1 | Mathematical modeling methods for physical processes                         | 2     | 1                | 324            | 138            | 54          | 52              | 32        |                 | 216                  | 90             | 6       | 108                  | 48             | 3       |                      |                |         |                     |                |         | UC -3,<br>DPC -5   |
| 1.2.2 | Computational methods in physics and physical experiment                     | 2     |                  | 108            | 48             | 28          | 20              |           |                 |                      |                |         | 108                  | 48             | 3       |                      |                |         |                     |                |         | UC -3,<br>DPC -6   |
| 1.3   | Modulus «Research activities associated with the subject of master's thesis» |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         | UC -1-3            |
| 1.3.1 | Research seminar                                                             |       | 1,2,3,4          | 360            |                |             |                 |           |                 | 90                   |                | 3       | 90                   |                | 3       | 90                   |                | 3       | 90                  |                | 3       |                    |
| 1.3.2 | Course paper on the subjects of thesis                                       |       |                  | 120            |                |             |                 |           |                 |                      |                |         | 120                  |                | 3       |                      |                |         |                     |                |         |                    |
| 2.    | Higher Education Institution Component                                       |       |                  | 2166           | 834            | 474         | 156             | 44        | 160             | 216                  | 90             | 6       | 600                  | 240            | 15      | 864                  | 324            | 27      | 486                 | 180            | 15      |                    |
| 2.1   | Modulus «Functional analysis and group theory applications in physics»       |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         | SC -1              |
| 2.1.1 | Functional analysis and group theory applications in physics                 | 1     |                  | 216            | 90             | 46          |                 | 44        |                 | 216                  | 90             | 6       |                      |                |         |                      |                |         |                     |                |         |                    |
| 2.2   | Modulus «Applied physics»                                                    |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                    |
| 2.2.1 | Technique of modern experiment                                               |       | 2                | 120            | 48             | 36          |                 |           | 12              |                      |                |         | 120                  | 48             | 3       |                      |                |         |                     |                |         | SC -2              |
| 2.2.2 | Surface physics and chemistry                                                | 2     |                  | 120            | 48             | 36          |                 |           | 12              |                      |                |         | 120                  | 48             | 3       |                      |                |         |                     |                |         | SC -3              |
| 2.2.3 | Nuclear technologies in material science                                     | 2     |                  | 120            | 48             | 36          |                 |           | 12              |                      |                |         | 120                  | 48             | 3       |                      |                |         |                     |                |         | SC -4              |
| 2.2.4 | Laser processing of materials                                                |       | 3                | 90             | 36             | 36          |                 |           |                 |                      |                |         |                      |                |         | 90                   | 36             | 3       |                     |                |         | SC -5              |
| 2.2.5 | Optical and laser instrument engineering                                     |       | 3                | 90             | 36             | 20          |                 |           | 16              |                      |                |         |                      |                |         | 90                   | 36             | 3       |                     |                |         | SC -6              |
| 2.3   | Modulus «Modern optoelectronics»                                             |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                    |
| 2.3.1 | Advanced optoelectronic systems and computerization of optical measurements  | 2     |                  | 120            | 48             | 36          |                 |           | 12              |                      |                |         | 120                  | 48             | 3       |                      |                |         |                     |                |         | SC -7              |
| 2.3.2 | Laboratory works «Advanced optoelectronic and laser systems»                 |       | 2                | 120            | 48             |             | 48              |           |                 |                      |                |         | 120                  | 48             | 3       |                      |                |         |                     |                |         | SC -8              |
| 2.4   | Modulus «Advanced laser systems»                                             |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                    |
| 2.4.1 | Advanced laser systems                                                       | 3     |                  | 198            | 72             | 48          |                 |           | 24              |                      |                |         |                      |                |         | 198                  | 72             | 6       |                     |                |         | SC -9              |

| No    | The name of the module, academic discipline, course project (course work)                  | Exams | End-of-term test | Academic hours |                |             |                 |           |                 | Semesters            |                |         |                      |                |         |                      |                |         |                     |                |         | Competence Code |
|-------|--------------------------------------------------------------------------------------------|-------|------------------|----------------|----------------|-------------|-----------------|-----------|-----------------|----------------------|----------------|---------|----------------------|----------------|---------|----------------------|----------------|---------|---------------------|----------------|---------|-----------------|
|       |                                                                                            |       |                  | Total          | Total in class | As follows: |                 |           |                 | I year               |                |         |                      |                |         | II year              |                |         |                     |                |         |                 |
|       |                                                                                            |       |                  |                |                | Lectures    | Laboratory work | Workshops | Seminar classes | 1 semester, 18 weeks |                |         | 2 semester, 17 weeks |                |         | 3 semester, 14 weeks |                |         | 4 semester, 8 weeks |                |         |                 |
|       |                                                                                            |       |                  |                |                |             |                 |           |                 | Total                | Total in class | Credits | Total                | Total in class | Credits | Total                | Total in class | Credits | Total               | Total in class | Credits |                 |
| 2.4.2 | Quantum mechanics of molecular systems                                                     |       | 3                | 198            | 72             | 48          |                 |           | 24              |                      |                |         |                      |                |         | 198                  | 72             | 6       |                     |                |         | SC -10          |
| 2.5   | Modulus «Nonlinear optics and spectroscopy» <sup>1</sup>                                   |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                 |
| 2.5.1 | Quantum and nonlinear effects in optics                                                    | 3     |                  | 198            | 72             | 48          |                 |           | 24              |                      |                |         |                      |                |         | 198                  | 72             | 6       |                     |                |         | SC -11          |
| 2.5.2 | Specialized laboratory works «Laser-emission spectroscopy»                                 |       | 3                | 90             | 36             |             | 36              |           |                 |                      |                |         |                      |                |         | 90                   | 36             | 3       |                     |                |         | SC -12          |
| 2.6   | Modulus «Circuitry of photonics» <sup>1</sup>                                              |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                 |
| 2.6.1 | Liquid crystals and polymers in photonics                                                  | 4     |                  | 90             | 36             | 36          |                 |           |                 |                      |                |         |                      |                |         |                      |                |         | 90                  | 36             | 3       | SC -13          |
| 2.6.2 | Spectroscopy and diagnostics of micro- and nanoobjects                                     | 4     |                  | 198            | 72             | 48          |                 |           | 24              |                      |                |         |                      |                |         |                      |                |         | 198                 | 72             | 6       | SC -14          |
| 2.6.3 | Specialized laboratory works «Photonics of micro- and nanoobjects»                         |       | 4                | 198            | 72             |             | 72              |           |                 |                      |                |         |                      |                |         |                      |                |         | 198                 | 72             | 6       | SC -15          |
| 3.    | Optional Subjects                                                                          |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                 |
| 3.1   | Creative Teaching Techniques at Higher School/ Pedagogy and Psychology of Higher Education |       | /1               | /108           | /56            | /30         |                 | /26       |                 |                      |                |         |                      |                |         | /108                 | /56            | /3      |                     |                |         | UC -4           |
| 4.    | Series of Disciplines for Candidate Exams and Additional Training                          |       |                  |                |                |             |                 |           |                 |                      |                |         |                      |                |         |                      |                |         |                     |                |         |                 |
| 4.1   | Philosophy and Methodology of Science <sup>2</sup>                                         | /2    |                  | /240           | /104           | /60         |                 | /44       | /140            | /60                  |                | /100    | /44                  | /6             |         |                      |                |         |                     |                |         | UC-5            |
| 4.2   | Foreign Language <sup>2</sup>                                                              | /2    | /1               | /220           | /140           |             |                 | /140      |                 | /110                 | /70            | /3      | /110                 | /70            | /3      |                      |                |         |                     |                |         | UC-6            |
| 4.3   | Information Technologies: Basics <sup>2</sup>                                              |       | /1               | /108           | /72            | /36         | /36             |           |                 | /108                 | /72            | /3      |                      |                |         |                      |                |         |                     |                |         | UC -7           |

|                             |      |      |     |     |     |     |      |     |    |      |     |    |     |     |    |     |     |    |  |
|-----------------------------|------|------|-----|-----|-----|-----|------|-----|----|------|-----|----|-----|-----|----|-----|-----|----|--|
| Number of Hours             | 3726 | 1296 | 720 | 228 | 164 | 184 | 1062 | 408 | 30 | 1134 | 384 | 30 | 954 | 324 | 30 | 576 | 180 | 18 |  |
| Number of Hours per Week    |      |      |     |     |     |     |      | 23  |    |      | 23  |    |     | 23  |    |     | 23  |    |  |
| Количество курсовых работ   | 1    |      |     |     |     |     |      |     |    |      | 1   |    |     |     |    |     |     |    |  |
| Number of Exams             | 13   |      |     |     |     |     |      | 4   |    |      | 5   |    |     | 2   |    |     | 2   |    |  |
| Number of End-of-term tests | 13   |      |     |     |     |     |      | 2   |    |      | 4   |    |     | 5   |    |     | 2   |    |  |

б

| IV. Internship   |          |       |         | V. Research |       |         | VI. Final Certification |  |
|------------------|----------|-------|---------|-------------|-------|---------|-------------------------|--|
| Internship Title | Semester | Weeks | Credits | Semester    | Weeks | Credits | Master's Thesis         |  |
| Research         | 4        | 4     | 6       | 4           | 4     | 6       |                         |  |

## VII. Competence Matrix

| Competence Code | Competence                                                                                                                                                                                                                                                                                                   | Module Code, Discipline Code |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| UC -1           | Abilities to use the scientific cognition techniques (analysis, comparison, systematization, abstracting, modeling, data verification, decision-making, etc.) in independent research activities, to generate and to realize innovative ideas                                                                | 1.1.1-1.1.4, 1.3             |
| UC -2           | Abilities to solve practical tasks using the knowledge acquired in theoretical physics; to realize the professional research and technological activities; to comprehend creatively scientific, engineering, and design information; to analyze the process of solving scientific and technological problems | 1.1.1-1.1.4, 1.3             |
| UC -3           | Ability to use the fundamental mathematical knowledge for data analysis and verification, estimation of information completeness in the process of professional activities; if required, to find or synthesize insufficient information; to realize the activities in conditions of uncertainty              | 1.2.1, 1.2.2, 1.3            |
| UC -4           | Ability to realize pedagogical activities in educational institutions; to master and introduce the effective educational and information communication technologies, pedagogical innovations                                                                                                                 | 4.1                          |
| UC -5           | Mastering of scientific cognition methods; ability to analyze the content and level of philosophical-methodological problems when accomplishing the tasks of research and innovative activities                                                                                                              | 4.2                          |
| UC -6           | Mastering of foreign languages for communication in interdisciplinary and research fields, in different forms of international collaboration, research and innovative activities                                                                                                                             | 4.3                          |
| UC -7           | Skills to use advanced information technologies for solving of research and innovative problems                                                                                                                                                                                                              | 4.4                          |
| DPC -1          | Ability to use the methods of theoretical physics for description of condensed matter, to apply the acquired knowledge in the process of independent design and development work, to extend the competence to new fields of modern technologies                                                              | 1.1.1                        |
| DPC -2          | Abilities to analyze and professionally use modern methods of thermodynamics and statistical physics, to perform analytical and numerical calculations, to use the obtained results for the creation of new technological products                                                                           | 1.1.2                        |
| DPC -3          | Ability to use the methods of vibration and wave theory for description of real systems and energy processes in these systems                                                                                                                                                                                | 1.1.3                        |
| DPC -4          | Ability to use the achievements of modern physics for solving of applied problems; using of theoretical techniques to analyze behavior of nonlinear dynamic systems                                                                                                                                          | 1.1.4                        |
| DPC -5          | Ability to construct and to refine mathematical models of physical phenomena, to realize them with the use of advanced information technologies; to analyze the proposed product in context of the latest achievements of mathematical modeling                                                              | 1.2.1                        |
| DPC -6          | Ability to understand and to apply professionally the computational experiment techniques; to perform efficient numerical computations of physical objects and processes                                                                                                                                     | 1.2.2                        |

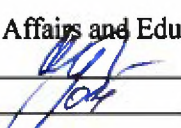
| Competence code | Competence                                                                                                                                                                                                                               | Код модуля, учебной дисциплины |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| SC -1           | Ability to use the notions of modern mathematics in analysis of the objects of physical research, to use the functional analysis and group theory methods when solving the applied physics problems                                      | 2.1                            |
| SC -2           | Ability to design and conduct physical experiments, to master advanced techniques of structural and phase analysis, of nanostructures probing and modification                                                                           | 2.2.1                          |
| SC -3           | Ability to select optimal methods for the surface formation with the desired properties, to master computational methods for the basic characteristics of crystals and structures in the surface region                                  | 2.2.2                          |
| SC -4           | Ability to use knowledge about the laws of nuclear physics, nuclear reactions, and features of interactions between ionizing radiation and matter in development of the technologies enabling the creation and modification of materials | 2.2.3                          |
| SC -5           | Ability to use knowledge of the physical processes underlying the interactions between laser radiation and condensed media for the development and introduction of laser material-processing technologies                                | 2.2.4                          |
| SC -6           | Ability to use knowledge of laser physics and technique in design of laser systems for scientific research and practical measurements                                                                                                    | 2.2.5                          |
| SC -7           | Ability to use for research purposes the knowledge about the design, operation principles of advanced optical and optoelectronic devices and systems                                                                                     | 2.3.1,                         |
| SC -8           | Ability to develop the methods and procedures for scientific research and practical measurements with the help of modern high-tech optical, optoelectronic, and laser devices or systems                                                 | 2.3.2                          |
| SC -9           | Ability to use modern spectroscopic laser systems in research, technology, and medicine                                                                                                                                                  | 2.4.1                          |
| SC -10          | Ability to use the methods of self-consistent field, density functional theory, and the electron correlation effects for simulation of the structural and spectral characteristics of molecular systems                                  | 2.4.2                          |
| SC -11          | Ability to use the concepts of nonlinear optics and knowledge of molecular system photonics, of nonlinear-optical effects in research activities and for the development of technological applications for laser physics                 | 2.5.1                          |
| SC -12          | Ability to use the laser-emission spectroscopy methods in experimental studies                                                                                                                                                           | 2.5.2                          |
| SC -13          | Ability to develop photonics circuitry with the use of functional materials, polymers, and liquid crystals                                                                                                                               | 2.6.1                          |
| SC -14          | Ability to use the techniques enabling evaluation of the spectral characteristics of photonic structures, nano- and microobjects when solving the fundamental and applied problems                                                       | 2.6.2                          |
| SC -15          | Ability to use in research activities the experimental methods and diagnostic systems for micro- and nanoobjects                                                                                                                         | 2.6.3                          |

It is developed on the basis of the standard curriculum, approved 21.03.2019 г. (Registration number № G 31-2-012/пр.-тип.)

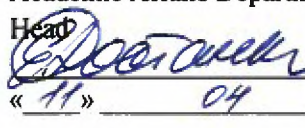
<sup>1</sup> The enumerated moduli and their contents are annually revised and qualified by the Faculty Council in accordance with the proposals of the relevant departments and personnel recruiting organizations.

<sup>2</sup> Series of Disciplines for Candidate Exams and Additional Training «Philosophy and Methodology of Science», «Foreign Language», «Information Technologies: Basics» are studied according to the choice of a student.

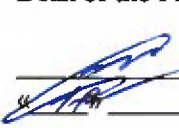
**AGREED**

Vice-Rector  
for Academic Affairs and Education Innovations  
  
« 11 » 2019 Olga I. Chupris

**AGREED**

Academic Affairs Department,  
Head  
  
« 11 » 04 2019 Alena A. Dastanka

**AGREED**

Dean of the Physics Faculty  
  
« 11 » 04 2019 Mikhael S. Tivanov