



CURRICULUM

(Enrolment 2020)

APPROVED

by Academic Council

Igor Sikorsky Kyiv Polytechnic Institute

_____ Mykhaylo ILCHENKO

_____ 2020

Level Master

Speciality 131 - Applied mechanics

Educational and Professional program _____

Dynamics and strength of machines

Graduation Department Dynamics and strength of machines and strenght of materials

Form of study full-time

(full-time, part-time)

Faculty (Institute) Institute of Mechanical Engineering

Qualification MASTER DEGREE in Applied Mechanic

Study duration 1 year 4 months

Base level Bachelor degree

I. Schedule of educational process

| YEAR | September | | | | October | | | | November | | | | December | | | | January | | | | February | | | | March | | | | April | | | | May | | | | June | | | | July | | | | August | | | | | | | |
|------|-----------|---|---|---|---------|---|---|---|----------|----|----|----|----------|----|----|----|---------|----|----|----|----------|----|----|----|-------|----|----|----|-------|----|----|----|-----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 |
| I | | | | | | | | | | | | | | | | | | | E | E | H | H | | | | | | | | | | | | | | | | | | | E | E | H | H | H | H | H | H | H | H | H | H |
| II | P | P | P | P | P | P | P | P | R | R | R | R | R | R | R | R | R | R | R | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Symbols: Learning period Examination Practice Research Assessment Holiday

II. Summary table of time budget (Weeks)

| YEAR | Learning period | Examination | Practice | Assessment | Research | Holiday | Total |
|------|-----------------|-------------|----------|------------|----------|---------|-------|
| I | 36 | 4 | | | | 12 | 52 |
| II | | | 8 | | 10 | | 18 |

III. Practice

| Type of practice | YEAR | Weeks |
|----------------------|------|-------|
| Pre-diploma Practice | 3 | 8 |

IV. Graduates assessment

| Subjects | Form of graduates assessment (exam, graduation project) | YEAR |
|--------------------------------|---|------|
| Master's Thesis Implementation | Master's Thesis Defense | 3 |

V. Plan of Educational process

| Code | educational components | Distribution for terms (semesters) | | | | ECTS Credits | Number of hours | | | | |
|--|--|------------------------------------|-------------|-----------------|-------------|--------------|-----------------|----------------------------|-----------|------------|------------|
| | | Exams | Final tests | Individual task | Module test | | Total | Lectures/practical lessons | | | Self-study |
| | | | | | | | | Lectures | Practical | Laboratory | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1. NORMATIVE educational components | | | | | | | | | | | |
| 1.1. General training cycle | | | | | | | | | | | |
| GC1 | Intellectual Property and Patenting | | 1 | | 1 | 3 | 90 | 36 | 18 | | 36 |
| GC2 | Fundamentals of Engineering and Sustainable Development Technologies | | 1 | | 1 | 2 | 60 | 18 | 18 | | 24 |
| GC3 | Workshop of Foreign Language Professional Communication | | 2 | 1 | 2 | 3 | 90 | | 72 | | 18 |
| GC4 | Project Management in Science-intensive Engineering | | 2 | | 2 | 3 | 90 | 18 | 36 | | 36 |
| Total number of part 1.1 | | | 4 | 1 | 4 | 11 | 330 | 72 | 144 | | 114 |

| 1.2. Vocational training cycle | | | | | | | | | | | |
|---|---|---|-----|---|----|------|------|-----|-----|-----|------|
| PC1 | Information Systems and Technologies in Aircraft Engineering | 1 | | 1 | 1 | 4,5 | 135 | 18 | | 36 | 81 |
| PC2 | Numerical and Analytical Methods for Analyzing the Dynamics and Strength of Machines and Motion Stability | | 1 | | 1 | 3 | 90 | 18 | 18 | 18 | 36 |
| PC3 | Course work on Numerical and Analytical Methods for Analyzing the Dynamics and Strength of Machines and Motion Stability | | 2 | | | 1 | 30 | | | | 30 |
| PC4 | Course project on Numerical and Analytical Methods for Analyzing the Dynamics and Strength of Machines and Motion Stability | | 1 | | | 1,5 | 45 | | | | 45 |
| PC5 | Strength and Fatigue of Materials | 1 | | 1 | 1 | 4 | 120 | 36 | 18 | | 66 |
| PC6 | Foundations of Experimental Methods of Research | 1 | | | 1 | 4 | 120 | 36 | | 18 | 66 |
| PC7 | Probabilistic Methods in Mechanics | | 1 | 1 | 1 | 4,5 | 135 | 45 | 36 | | 54 |
| Research (scientific) component | | | | | | | | | | | |
| PC8 | Scientific Work on the Topic of Master's Thesis | | 1,2 | | | 4 | 120 | 9 | 36 | | 75 |
| PC9 | Pre-diploma Practice | | 3 | | | 14 | 420 | | | | 420 |
| PC10 | Work on a Master's Thesis | | | | | 16 | 480 | | | | 480 |
| Total number of part 1.2 | | 3 | 7 | 3 | 5 | 56,5 | 1695 | 162 | 108 | 72 | 1353 |
| TOTAL of NORMATIVE educational components | | 3 | 11 | 4 | 9 | 67,5 | 2025 | 234 | 252 | 72 | 1467 |
| 2. ELECTIVE educational components | | | | | | | | | | | |
| 2.1. General training cycle (Optional subjects from University catalogue) | | | | | | | | | | | |
| ΠB1 | Educational component 1 F- Catalog | | 2 | 2 | 2 | 5 | 150 | 45 | | 45 | 60 |
| ΠB2 | Educational component 2 F- Catalog | 2 | | | 2 | 5 | 150 | 36 | 36 | | 78 |
| ΠB3 | Educational component 3 F- Catalog | 2 | | | 2 | 5 | 150 | 36 | | 36 | 78 |
| ΠB4 | Educational component 4 F- Catalog | | 2 | | 2 | 4 | 120 | 36 | | 36 | 48 |
| ΠB5 | Educational component 5 F- Catalog | 2 | | | 2 | 3,5 | 105 | 27 | 9 | | 69 |
| Total number of part 2.1 | | 3 | 2 | 1 | 5 | 22,5 | 675 | 180 | 45 | 117 | 333 |
| TOTAL of ELECTIVE educational components | | 3 | 2 | 1 | 5 | 22,5 | 675 | 180 | 45 | 117 | 333 |
| TOTAL | | 6 | 13 | 5 | 14 | 90 | 2700 | 414 | 297 | 189 | 1800 |

Approved by University Academic Council, Meeting protocol № 4 from 10.03. 2020

Head of the Department _____ / . Sergii PYSKUNOV

Dean of the Faculty _____ / __ Mykola BOBYR