



**BSTU meeting,  
Minsk 10.03.2016**



**Erasmus+**

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# **Analysis of the survey of master graduates employers**

**(within the framework of the project "Physics" Erasmus + EU)**

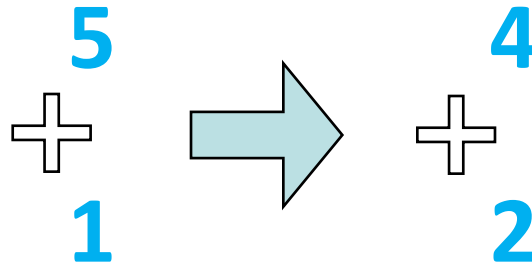
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# What is the survey about?

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## Inspiration:



## Expected results:

- Pooling ideas **how to form** the 2-year industry-oriented master-level education;
- Figuring out **what potential employers think** about qualification requirements for graduates of practice-oriented masterships;
- Identifying **training requirements** to graduates of masterships for the "4 + 2" system;
- Defining of the need and requirements for the organization of master students **internships** .

# Who was interviewed?

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## List of participants:

- GrSU, GSU and BSTU;
- BSU departments of Semiconductor physics, Laser physics, Energy physics;
- Research Institute for Nuclear Problems of BSU;
- Belarusian Physical Society;
- Republic Association of Nanoindustry.

**Full analysis is in document at emails**

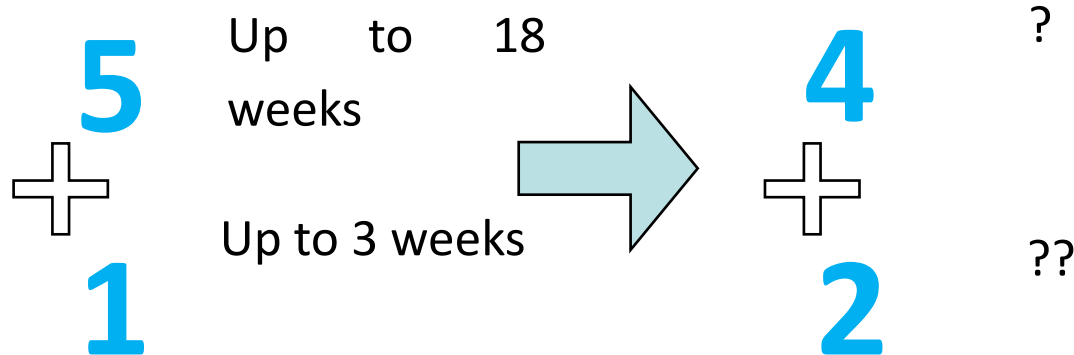
# Questions about internships

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## Place:

- Chosen individually; depends on future job and theme of PhD theses;

## Duration:



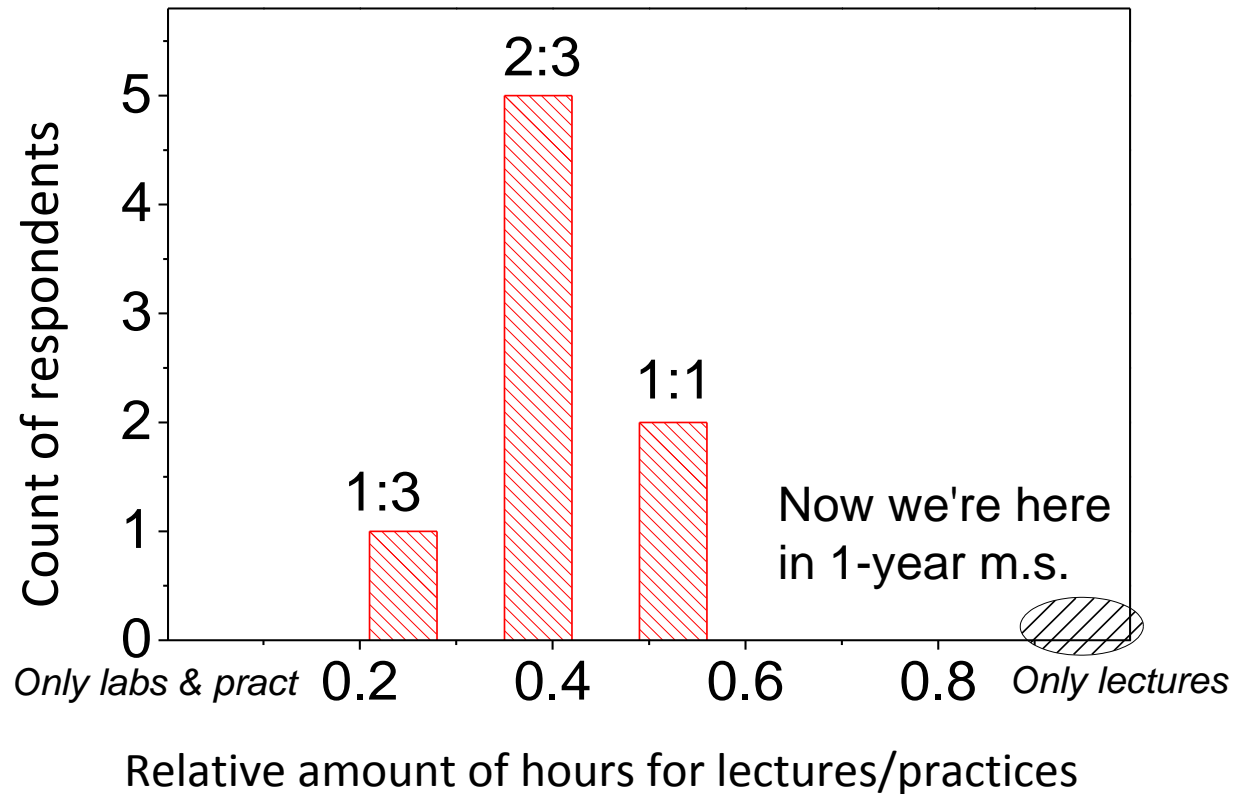
- Do we need to save this amount of time? (**18 + 3 = ? + ??**);
- “Amount of time should be flexible!” – Republic Association of Nanoindustry (RANI).

# The curriculum discussion

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## Ratio between time for lectures/labs'n'practices:

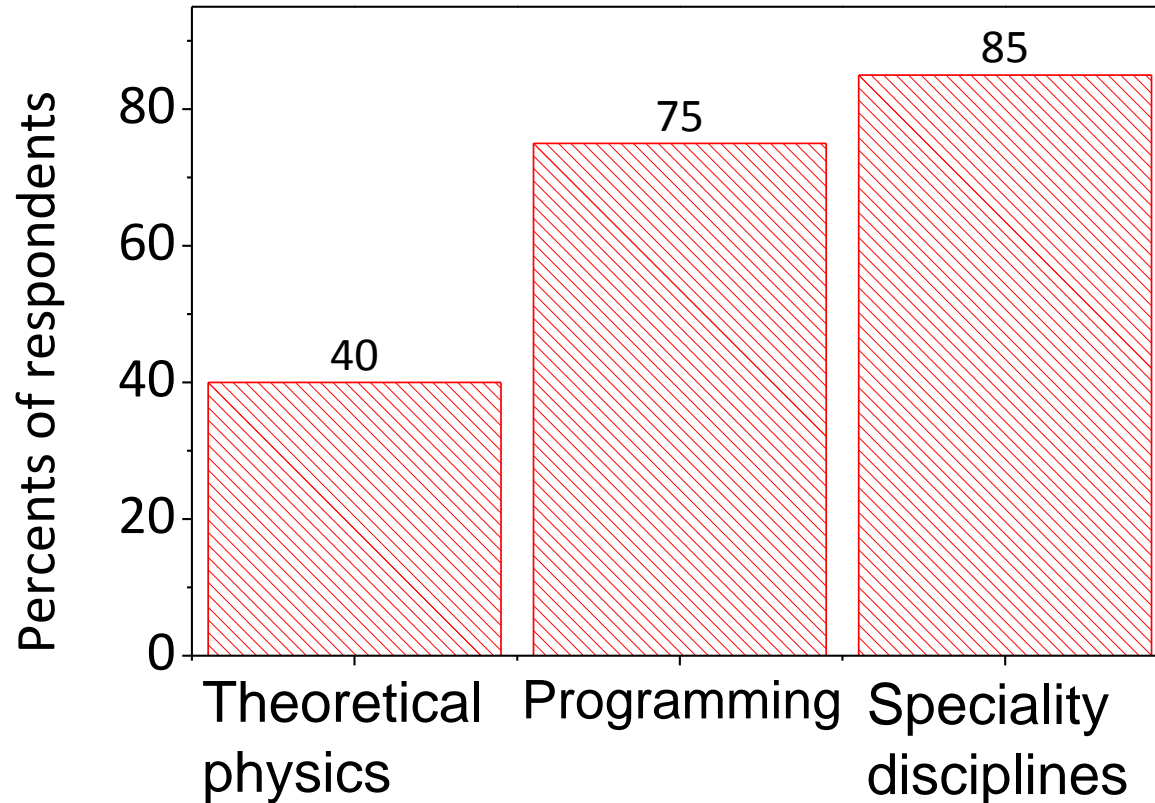
What should be the ratio of theoretical/practical training of master-students in the university, research institute or company?



# The curriculum discussion

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## Most mentioned common preferred topics of subjects

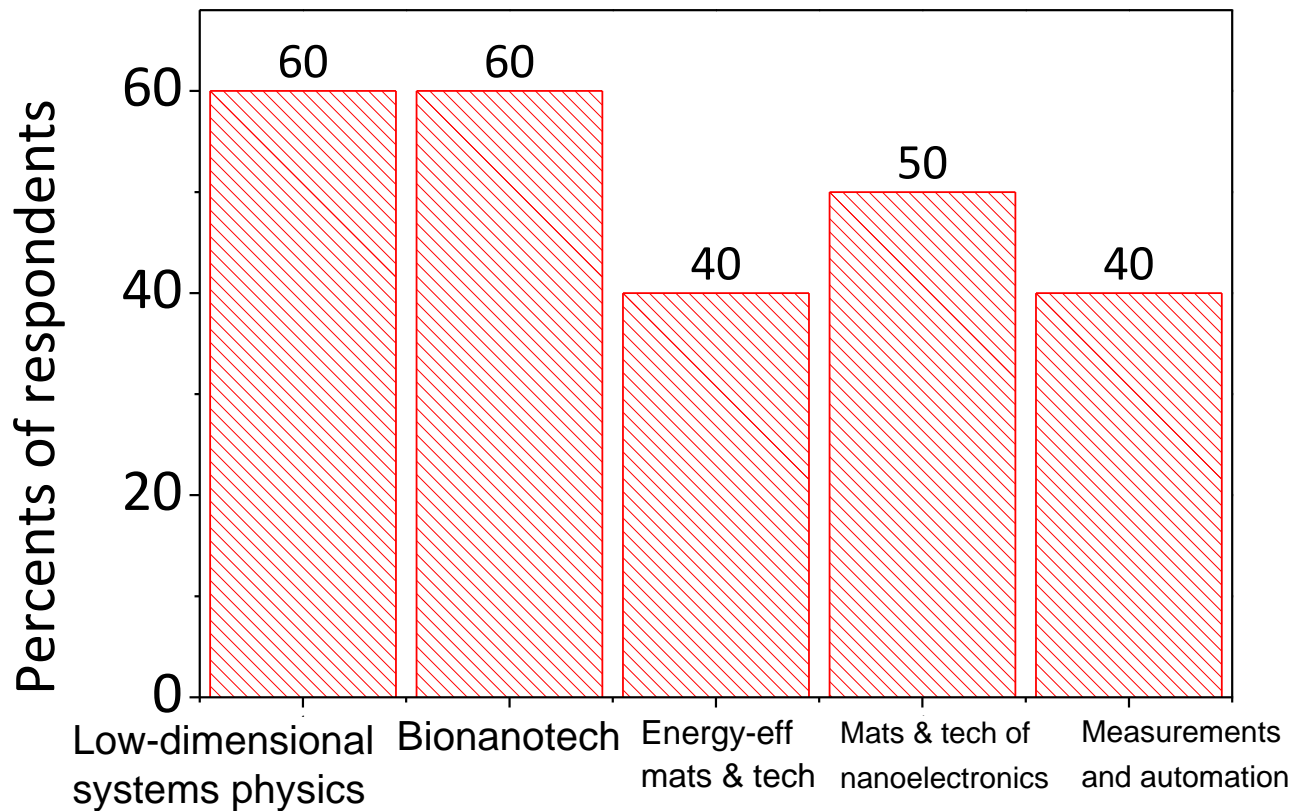


**Majority of respondents noted the importance of the mastering the principles of modern high-tech equipment work and exploitation**

# The curriculum discussion

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## Most mentioned specific subjects



**Where is 70% for programming?**

- **Automation and microprocessors?**
- **Computer-related math and tools for scientific computation?**

# Training and work in company

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**How much time does it take to make student able to work “self-sufficiently” in company?**

- For 16-18 weeks (the period of internship at the first stage of higher education) at the place of future work except of RANI answer: “Up to 1 year”.

**What do you think can be improved in the educational process to reduce this time?**

- It is recommended to enhance the fundamental training of master-students in physical and mathematical disciplines and improve their general skills, reducing the time dedicated to humanitarian disciplines.

**To which percent of master-level graduates company can offer to stay on a permanent job after practice?**

- Respondents indicated that about 50-80 % of master-level undergraduates can stay after practice on a permanent job.



# Conclusions

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## It is reasonable to

- **Think how to keep balance of internship in “4+2” and “5+1” and prepare the labor market**
  - ❑ At least need to be sure that employers are informed about additional weeks which are needed to make worker self-sufficient;
- **Consider the recommendations for MS. curricula:**
  - ❑ Increase the amount of special disciplines and various types of programming;
  - ❑ Introduce courses dedicated to nano- and biotechnology;
  - ❑ Proportion of theoretical and practical training for master-level students is recommended from 1/3 to 2/3.
- **Recommendations from RANI may be considered as *votum separatum* and better not just averaged with others.**



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**Thank you for your attention!**

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