

#### **Orientation for PhD students**

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Vice-dean for R&D and PhDs studies

#### **Doctoral studies**

- Represents the highest level of university education;
- For those, who are interested in broadening own knowledge in a selected area;
- For those, who are ambitious to contribute to that area their by innovative attitude and own R&D activities.

#### Rights and Duties of PhD students

- Study and Examination Rules of BUT
- Rules for organization of studies at the Faculty of electrical engineering and communication, BUT
  - Dean's directive No. 3/2024
- Scientific Identifiers
  - Directive No. 5/2018
  - Unfortunately, still just in Czech (contact your supervisor!)
- Other study regulations and support documents
  - https://www.fekt.vut.cz/en/students/study\_regulations

#### PhD student activities during studies

- Teaching experience
- R&D activities
  - Publications (at least 1 Jimp @ 50+% authorship)
  - Products
  - Patents
- Study domain
  - Studying courses within the study program at BUT or abroad
- International internship
  - at least 1 month, or active participation in a international R&D project

#### Individual Study Plan – fast check in IS Apollo

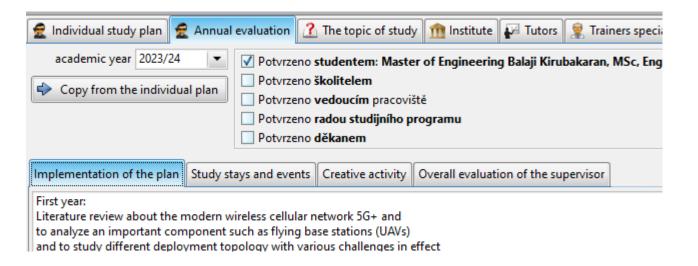
Detail: : Přehled hodnocení a kontroly studia	
👱 The individual study plan 🥷 Annual evaluation 🔝 The	topic of study 🏦 Institute 🗗 Tutors 🧝 Trainers specialists 🌃 Subjects 🔳 Pedagogic practice 🕕 The Diploma Supplement 🖼 Summary of evaluations ar
Overall rating:	
the total number of points 2	The general point conditions  (26 pts) condition of the minimum boundary for the enrollment to 2nd year of study (57 pts) condition of the min. boundaries for filing the application for the state PhD exams (89 pts) condition of the min. boundary for enrollment to 4th year of the study (113 pts) condition of min. boundary at the deadline of submission of the dissertation thesis in (123 pts) condition of min. boundary for the dissertation thesis defence and termination of DS
Evaluation of study results	
of points for completion of courses the total number of points 0	Point conditions for study results  (8 pts) condition of the minimum boundaries for courses or internship for enrollment to 2nd year of the (16 pts) condition of the minimum boundary for the courses or an intership and eng. language for the (22 pts) condition of min. boundary at the deadline of submission of the dissertation thesis in draft
	Back     Save
Evaluation of the pedagogic practice:	
of points for the pedagogic practice 0	Point conditions for pedagogical practice (36 pts max.)  (8 pts) condition of the minimum boundary for the enrollment to 2nd year of study (16 pts) condition of the min. boundaries for filing the application for the state PhD (28 pts) condition of the min. boundary for enrollment to 4th year of the study condition of a min. boundary of (36 pts) at the deadline for submission of in draft dissertation thesis
Evaluation of the scientific-research activities:	
number of points for R <u>D</u> activity 2  Sisplay and edit	Score conditions for research-development activity  (8 pts) condition of the minimum boundary for the enrollment to 2nd year of study (20 pts) condition of the min. boundaries for filing the application for the state PhD exams (40 pts) condition of the min. boundary for enrollment to 4th year of the study (50 pts) condition of min. boundary at the deadline of submission of the dissertation thesis in
	(60 pts) condition of min. boundary for the dissertation thesis defence and termination of DS

## Individual Study Plan – Annual Evaluation

- Report on activity results/update of ISP (in IS Apollo)
- Milestones (MSs):
  - MS 1: End of 1st year (June 30)
  - MS 2: Submitting application for state doctoral exam (by April 30)
  - MS 3: Enrollment into 4th year
  - MS 4: Submitting semi-finished doctoral thesis (end of 7th term;
     February)
  - MS 5: Submitting application for doctoral thesis defense

## Individual Study Plan – Annual Evaluation

- Summary of what "was" and/or "was not (and why)" done
- To be approved at least\* by your supervisor



<sup>\*</sup>In specific cases Annual Evaluation must also be approved by Dept. Head, Doctoral Board, and Dean

#### Study domain

Specialized (track-specific) DS course completed with an exam					
General DS course completed with an exam					
DS course attended abroad and completed with an expert discussion at FEEC					
Internship or study abroad (one co. or uni.)/international project participation					
English course completed with an exam	4				
Aims of the doctoral thesis*	4				
Semi-finished doctoral thesis**	0 - 4				

Minimum score for courses attended and internship or study abroad at the end of the 1st year of DS  Minimum score for subjects attended, internship or study abroad, and English course when submitting state doctoral exam application		
	16	
Minimum score when submitting semi-finished thesis	22	

Points for "Doctoral thesis Aims" are recorded by FEEC SciDept (Jana Noskova) after successfully passing the State Doctoral Exam

<sup>\*\*</sup> Points for "Semi-finished doctoral thesis" are recorded by the supervisor after submitting Semi-finished doctoral thesis

#### **Teaching experience**

Teaching (one period a week, in-semester)*					
Supervising semester project or Bachelor's/Master's thesis; per academic year**	4				
Teaching materials***	4				
Minimum score for teaching experience at the end of the 1st year of DS	8				
Minimum score for teaching experience when submitting state doctoral exam application					
Minimum score for teaching experience when enrolling in the 4th year	28				
Minimum score when submitting semi-finished doctoral thesis					

<sup>\*</sup> Within teaching (numerical, computer, and laboratory practicals), not more than 28 points can be granted

<sup>\*\*</sup> As regards students' projects or theses (semester project, Bachelor's or Master's theses), not more than 8 points are available.

<sup>\*\*\*</sup> Producing at least 20 pages of instructional and teaching materials (classes handbook; participating in the completion of textbooks); designing a laboratory tool; completing a training program.

30

#### **R&D** activities

Original paper in a journal with IF indexed by WoS (Jimp); Patent

Original paper in a journal indexed by SCOPUS (Jsc) or ERIH; book	20			
Original paper at an international konference (D)	10			
Submitting a project proposal to receive a grant	2			
Receiving a foreign grant	20			
Receiving a Czech Republic grant	5			
Applied research and science results (semi-industrial installation and pilot production; validated technology; prototype; applied methodology; functional sample; authorized software; utility model)				
Minimum score for professional and scientific activity at the end of the 1st year	8			
Minimum score for professional, scientific, and technical activity when submitting state doctoral exam application	20			
Minimum score when enrolling in the 4th year	40			
Minimum score when submitting semi-finished doctoral thesis	50			
Minimum score on the doctoral thesis defense date	60			

#### **Overall evaluation - limits**

MS 1	Total minimum score at the end of the 1st year	26
MS 2	Total minimum score when submitting state doctoral exam application	57
MS 3	Total minimum score when enrolling in the 4th year	89
MS 4	Total minimum score when submitting semi-finished doctoral thesis	113
MS 5	Total minimum score on thesis defense and study completion date(s)	123

#### **Publication - classification**

- Journal paper J
  - Jimp Journal with Impact Factor (IF) resp. Article Influence Score (AIS) indexed by Web of Science (=Web of Knowledge, WoS)
  - Jsc Journal indexed by SCOPUS
  - Jost other
- Conference proceedings paper D
  - Paper/Conference is indexed by WoS, SCOPUS, IEEExplore
  - Conference organizer is/is not from Czech Republic

- Paper in journal with IF/AIS indexed in Web of Science Jimp
  - -A102
  - http://apps.webofknowledge.com/
- Paper in peer-reviewed journal indexed in SCOPUS or ERIH  $J_{sc}$ 
  - A103
  - www.scopus.com
  - http://ieeexplore.ieee.org

- Paper in journal approved by Research, Development and Innovation Council of Czech Republic - Jost
  - A302
  - May also be in Czech language (irrelevant for EN programes)
  - http://www.vyzkum.cz/storage/att/B824F2CAD362169FB3F3287B0C 4B6D7A/Seznam%20%C4%8Dasopisu%20pro%20rok%202015.pdf

- Other journal papers Jost
  - A108 Original paper in international, foreign journal
  - A309 Original paper published in Czech or Slovak journal
- Other publications B/C
  - A101 Research book written in internationally recognized language
  - A301 Research book written in Czech

- Paper in conference proceedings indexed in WoS and/or SCOPUS - D
  - -A104
- Paper in conference proceedings (international) Dost
  - -A105
- Paper in conference proceedings (Czech or Slovak) Dost
  - -A304

# Other R&D results/activitites in IS Apollo (valid for PhD students only)

- Applied research results
  - A107, A306, A307 Patents
  - A305 semi-industrial installation and pilot production; validated technology; prototype; applied methodology; functional sample; authorized software; utility mode
- Projects
  - B301 submitting project application
  - B108, B109, B213, B214 Project lead/co-lead of a Czech/Foreign grant (not only project team member)

### Possible Journals (not only)

- Journal with IF/AIS (A102)
  - IEEE Access (ISSN 2169-3536)
  - Sensors\* (ISSN 1424-8220)
  - AEU International Journal of Electronics and Communications (ISSN 1434-8411)
  - Symmetry\* (ISSN 2073-8994)
  - Applied Science Basel\* (ISSN 2076-3417)
  - Electronics\* (ISSN 2079-9292)
  - Optics Express (ISSN 1094-4087)

<sup>\*</sup>MDPI Publisher – try to diverse, where you publish your results (more info by your supervisor)

### Possible Journals (not only)

- Journals in SCOPUS (A103)
  - Axioms (ISSN 2075-1680)

### Financial support for your R&D papers

- Budget of the project led by your supervisor
- After discussion with your department's head
- Fond Open Access VUT
  - <a href="https://www.vutbr.cz/uk/openaccess/fond">https://www.vutbr.cz/uk/openaccess/fond</a>

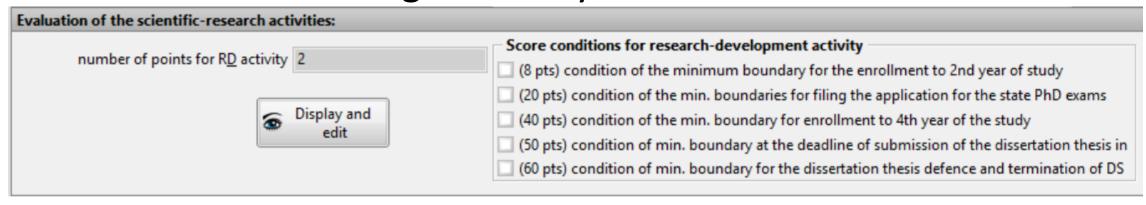


#### **Duty to create Scientific Identifier**

- Author of any R&D results has a duty to create ORCID account/identifier ("My Card" in BUT Intraportal); <u>Directive No. 5/2018</u>
- Creating also ResearcherID and Scopus Author ID are volutary but highly recommended
- Guidelines
  - https://www.vutbr.cz/en/uk/scientific-publishing/author-identifiers
    - https://www.vutbr.cz/en/uk/scientific-publishing/author-identifiers/orcid
    - <a href="https://www.vutbr.cz/uk/podpora-publikovani/identifikatory/researcherid">https://www.vutbr.cz/uk/podpora-publikovani/identifikatory/researcherid</a>
    - https://www.vutbr.cz/uk/podpora-publikovani/identifikatory/scopus-author-id

#### Publish, because...

Minimum limits for regular study cross-checks



- Extra scholarship proportional to reached score
- Tool to address future R&D partner
  - Join publications
  - Study internship

## "What is my gain?!"

- Good satisfaction
- Scholarship and something more, "if I want"
- "Other"
  - Critical thinking and evaluation of own steps
  - Responsibility for own decisions
  - Communication skills, presentation and defense of my ideas
  - Another university diploma

## ...something more, "if I want"

- Participate in projects (supervisor, department, faculty)
  - GA ČR Czech Science Foundation
  - MV ČR Ministry of Interior
  - MPO Ministry of Industry and Trade
  - TA ČR Technology Agency of the Czech Republic
  - International projects (Horizon Europe, NSF-USA, COST Action...)
- Participate in cooperation with industry
  - Contract research
  - Results of such research may fall into R&D activities (prototype, software, patent...)

#### ...something more, "if I want"

- PhD Talent 2024
  - Scholarship 120 kCZK/year for 3 years (paid directly by JCMM)
  - Call deadline: Sept. 24, 2024 (call open Sept. 5, 2024)
- Junior Inter-faculty project BUT
  - One "year" (=10 months) student project (max total budget 200 kCZK)
  - Project call opening: Dec. 2024 Jan. 2025
  - https://www.vutbr.cz/vav/specificky-vyzkum
- PhD Talent FEKT 2025
  - Scholarship 75 kCZK for 2 talented freshmen
  - Call opening: approx. 2/2 June 2025
- Fulbright scholarships
  - Calls open during April 2025

## Study/research internships

#### Erasmus+ programme

- Internships within EU
- Financed by EU (study internships approx. 420-520 EUR/month, research internships 600-700 EUR/month, depends on destination)

#### Freemovers

- Internships mainly outside EU (Argentina, China, South Korea,...)
- Financed from Czech budget (max 30 kCZK/month)
- Support of International mobility of BUT students
  - BUT Institutional plan (ask your Dept. head)
  - Support 30 kCZK/month
- IAESTE Czech Republic
- DZS <u>Czech National Agency for International Education and Research</u>
   <u>https://www.fekt.vut.cz/en/students/going\_abroad</u>

### Dept. of Science and International Relations FEEC

Ing. **Lucie Tomesova**Dept. head



Jana Noskova

Doctoral study agenda







Office hours

Mo: 9:00-11:00; We: 9:00-11:00, 13:00-15:00;

Th: 9:00-11:00, 13:00-14:00

Write an e-mail before your visit

https://www.fekt.vut.cz/en/faculty/structures/dek\_vo

### More People Good-to-Know at FEEC

prof. Vladimir Aubrecht Dr. Stanislav Klusacek

Faculty Dean

Vice-dean for Internationalization

Ing. Jiri Dvoracek

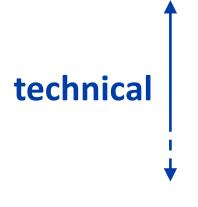
Students' Chamber of the Faculty
Senate Chairman







#### If there is an issue...



PhD student

Student supervisor

Doctoral board chairman

Department Head

VO – doctoral studies

VO head

Vice-dean for R&D

Dean

Vice-rector for studies and student affairs

Rector

#### administrative

## ...expect the most misunderstandings between...



### Supervisor's codex

- Guarantees PhD student's professional development
- Provides regular personal consultations
- Supervises PhD student's continuing education, including the development of pedagogical competencies
- Helps the student to establish professional contacts and integration into the professional community
- Helps the student to manage internship
- Helps the student to present reached R&D results
- Makes the student aware of code of ethics for researechers

#### Students' codex

- Fulfills responsibly and on time obligations and follow planned study schedule
- Communicates actively with the supervisor, informs about progress, obstacles and difficulties
- Aims for creativity and originality in research work
- Publishes original research results, maintains research documentation
- Takes an interest in own professional and expect development
- Is part of the community of the workplace

#### What to do now?

- In cooperation with supervisor prepare and finalize Individual Study Plan in IS Apollo
  - Planned study activities
  - Teaching
  - R&D activities
  - Internship (1 month minimum)
- Check/update bank account information in your "profile"
- Create sci. identifier(s) ORCID, ResearcherID, Scopus Author ID
- Bee seen!!

# Study schedule example (aka I can make it)

Study	Milesto	Study Area	Point	Points	Teaching experience	Point	Points	R&D activitites	Point	Points	Poits total	Min points
year	ne		S	(cum.)		S	(cum.)		s	(cum.)	(cum.)	req. (cum.)
1/W		Technical course 1	4	. 4	PC/num/labs (4 hour/week)	8	8					
		General course 1	2	. 6								
1/S		Technical course 2	4	10	PC/num/labs (4 hour/week)	8	16	Conf. paper (co-author - 20%)	2	2		
		General course 2	2	. 12				Conf. paper (main author - 60%)	6	8		
	MS 1	(min limit is 8)		12	(min limit is 8)		16	(min limit is 8)		8	36	26
2/W		Technical course 3	4	16	PC/num/labs (4 hour/week)	8	24	Project proposal (main investigator)	2	10		
								Indexed journal paper (co-author - 20%)	6	16		
2/S		English (DxX-JA6 or DxX-QJA)	4	20	PC/num/labs (2 hour/week)	4	28	Conf paper (main author - 60%)	6	22		
					Supervisor of 2 bc/mgr theses (4 p./	8	36					
	MS 2	(min limit is 16)		20	(min limit is 16)		36	(min limit is 20)		22	78	57
		PhD proposal/aims	4	. 24								
3/W		Internship	5	29				Indexed journal paper (co-author - 30%)	9	31		
3/S								Indexed journal paper (main author - 50	15	46		
	MS 3	(min limit not defined)		29	(min limit is 28)		36	(min limit is 40)		46	111	89
4/W		Semi-finished thesis (0 to 4 p.)	4	. 33				Conf paper (main author - 60%)	6	52		
	MS 4	(min limit is 22)		33	(min limit is 36)		36	(min limit is 50)		52	121	113
4/S								Indexed journal paper (main author - 50	15	67		
	MS 5	(min limit not defined)		33	(min limit not defined)		36	(min limit is 60)		67	136	123

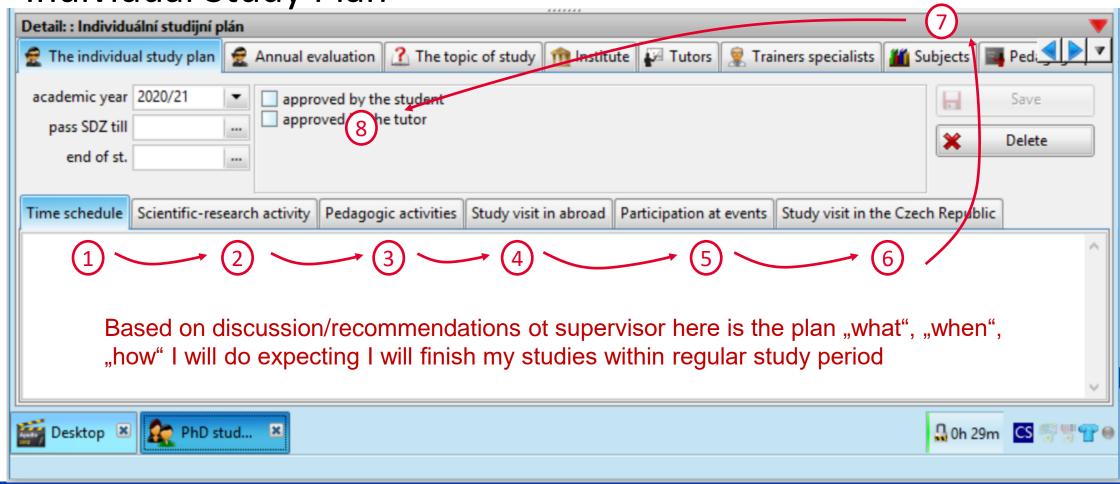
#### IS Apollo – fast intro

Installation - <a href="https://www.vut.cz/is">https://www.vut.cz/is</a>



To switch to EN: after login: Soubor → Language: English

Individual Study Plan

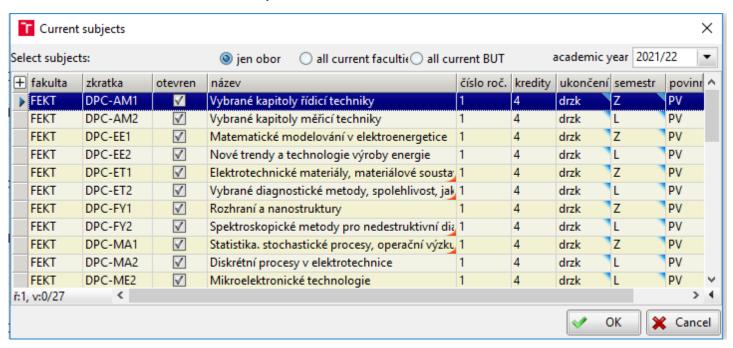




- Individual study plan → Time schedule
  - 1st year
    - Literature survey, first results to publish,...,following study duties,...
  - 2nd year
    - Proposal of own solutions and approaches, their validation by simulations/experiments, evaluation, publication of results, method optimizations,..., following study duties, passing State doctoral exam,..., communication with university XX, XY XZ to plan internship,...
  - 3rd year
    - Further optimization, proposal of new methods/algorithms,..., publication of results,..., critical comparison of "my" and "their" solutions, running the internship at XX, XY or XZ,..., writing a IF paper with my authorship of more than 50%,...
  - 4th year
    - Continue in further development of proposed methods, submitting submitting semi-finished doctoral thesis,..., publication of results, finalization of dissertation thesis and its defense

- (2) Individual study plan  $\rightarrow$  Scientific research activities
  - List of planned activities in current academic year
    - Study/development/analysis/optimization of methods based on..., preparing papers for publication in journals XX, XY,
       XZ...
- Individual study plan → Pedagogic activities
  - List of planned activities in current academic year (if relevant)
    - Lecturing laboratory/numerical/PC exercises of courses...
  - Individual study plan → Study visit in abroad
    - List of planned activities in current academic year
      - Get in contact with colleagues from universities XX, XY, XZ... and dealing possible dates of my internship...
      - Internship at XY university/R&D organization
  - Individual study plan → Participation at events
    - List of planned activities in current academic year
      - Active participation at XX, XY, XZ conferences/events...
  - Individual study plan → Study visit in the Czech Republic
    - List of planned activities in current academic year

- 7
- Subjects → Add
  - Valid courses are those abbreviated as DPC/DKC-xxx or DPA/DKA-xxx
  - English language: either DPX/DKX-JA6 or DPX/DKX-QJA (it is not possible to submit both the systems allows it, but "we" delete)



!!Courses that you select become compulsory!!

- (8)
- Individual study plan
  - Approved by student
  - Approved by supervisor/tutor
  - Apporved by the dept. head
  - Approved by scientific board by Oct. 15
  - Approved by dean

- Správnost a úplnost potvrzena studentem
- Správnost a úplnost potvrzena školitelem
- Odsouhlaseno vedoucím pracoviště
- Odsouhlaseno oborovou radou
- Schváleno děkanem
- !Check inside Dept. (and program Sci. Board) about the "Approved by student" deadline
- "Approved by dean" will be handled by Faculty SciDept.

#### The ISP is printed only twice during your studies!!

- for State Doctoral Exam
- for Dissertation thesis defense

#### **Courses to Select**

- Technical courses (4 points each)
  - Each dept. offers two courses the most close to your study field
  - English for post-graduates (Dxx-JA6) or
     English for the state doctoral exam (Dxx-QJA)
- General courses (2 points each)
  - Scientific publishing A to Z (Dxx-EIZ)
  - Quotations in a research work (Dxx-CVP)
  - Solving of innovative tasks (Dxx-RIZ)
- Other Technical/General courses
  - Passed during your training schools/internships
  - Course on the basics of scientific work (by AV ČR)

## To better become part of our community

- Welcome presentations at your department
- PhD Talent FEKT 2024 October 7
  - Presentations of 2nd year PhD students
- Open Science Day October 10
  - What do we do, if we don't teach
- Evaluation of R&D in the Czech Republic M17+
  - Scheduled for November
- IS Apollo R&D results
  - Scheduled for December

## Good luck in your study and R&D efforts!