2019 BUDGET MEETING

Materials and Production



AALBORG UNIVERSITY DENMARK

AAU's new budget model

From 1 January 2019, Aalborg University will implement a new budget model.

The model determines how AAU's financial resources are allocated to the departments:

- Increase in income +49 million kroner
- Increase in tax -50 million kroner
- Interim arrangement with TECH is stopped (40 million kroner)
- More financial resources will be allocated to central initiatives (digitalization, GDPR, Viden for Verden, etc.) before resources are allocated to the Faculties.



• 2 x 5% of the budget is earmarked for strategic activities:

- > Activity "gymnasier"
- First Math/Physic
- > E-learning
- Healthcare interdisciplinary and focus:
 - Hospital engineering
 - > Electrospinning of advanced scaffolds for tissue engineering
 - Hospital physics
 - Innovation HUB with university hospital
- > Educations in Esbjerg





- Administrative reorganization means new costs and new tasks to the departments
- ENG asks for start of 20 PhD students in 2019 (not all included in budget)
- Result for Faculty: Cost-cutting periods for some departments
- Result for M&P: A smaller budget and more tasks and obligations.



Budget model 2019 ENG

Samlet ENG Budget 2019									
Budgetposter	BIO	BYG	ENERGI	MATH	M&P	SBi	AK	Total	
STÅ indtægt i alt	42.904.002	34.196.091	24.998.287	10.969.080	58.280.320	1.249.319	12.363.204	184.960.304	
Deltidsuddannelse indtægt i alt	126.260	95.513	43.968	80.724	4.008.813	2.712.000		7.067.279	
Udenlandske selvbetalere i alt i kr.	538.200	1.076.400	1.435.200		1.076.400			4.126.200	
Uddannelsesindtægter i altPX	43.568.463	35.368.004	26.477.455	11.049.805	63.365.534	3.961.319	12.363.204	196.153.783	
VIP kroner - rekvireret ved andre institutter	-3.463.550	-2.826.000	-2.180.400	-2.252.950	-5.957.250	-15.400		-16.695.550	
VIP kroner - leveret til andre institutter	2.032.550	5.739.150	2.138.400	8.789.850	8.134.400	2.272.150	266.750	29.373.250	
VIP kroner - leveret til fakultet og forskerskole	1.013.100	579.150	1.841.950	1.068.650	568.150	55.550		5.126.550	
VIP kroner - rekvistioner netto i altPX	-417.900	3.492.300	1.799.950	7.605.550	2.745.300	2.312.300	266.750	17.804.250	
Grundbevilling	22.200.000	17.600.000	35.400.000	5.300.000	28.600.000	6.600.000		115.700.000	
Fordelt beløb fra parameter uddannelse til institutter	12.775.264	10.185.576	7.438.419	3.271.553	17.498.474	606.851		51.776.138	
Ekstern forskningsvirksomhed i kroner (UK95) til institutter	4.619.390	3.148.452	8.452.452	371.226	3.848.613	2.571.484		23.011.617	
BFI-point til institutter	2.954.965	3.096.237	14.386.930	1.456.531	4.473.752	2.396.106		28.764.521	
Ph.dgrader til institutter	1.643.687	986.212	4.931.061	164.369	2.629.899	1.150.581		11.505.808	
Basisforskningsmidler i altPX	44.193.306	35.016.477	70.608.862	10.563.678	57.050.739	13.325.022		230.758.084	
Heltidsuddannelse - AAU Ledelsesmidler (5%)	3.210.757	2.559.901	1.869.469	822.226	4.397.823	152.518		13.012.694	
Fordelt beløb af Forskning - AAU Ledelsesmidler (5%)	2.512.791	2.243.598	3.261.974	505.302	2.959.085	862.258		12.345.008	
Heltidsuddannelse - FAK Ledelsesmidler (20%)	4.590.081	14.519.583	2.028.683	8.595.060	10.691.676	11.625.693		52.050.776	
FS-bidrag fra institutter (23,3%)	23.339.785	21.599.767	24.491.864	7.375.480	32.754.033	14.478.210	2.880.627	126.919.765	
FU-bidrag fra institutter (5,3%)	5.309.050	4.913.252	5.571.111	1.677.684	7.450.488	3.293.327	655.250	28.870.161	
FAK-bidrag fra institutter ENG (13,0%)	13.082.300	12.106.994	13.728.057	4.134.067	18.359.127	8.115.254	1.614.634	71.140.435	
Forbrugsmulighed i altPX	55.926.363	54.579.850	62.255.362	25.954.389	82.646.508	6.352.318	7.479.443	295.194.234	



M&P 2019 Budget

- Significant increase in external turnover (2018: 51 million kroner 2019: 60 million kroner)
 - > Co-financing is relatively decreasing but increasing in numbers (-2 million kroner)
 - Overhead is increasing (+3,6 million kroner)
- 47 open positions (34 projects, 8 changes/extensions, 5 open). Several requests for new positions turned down.
- VIP salary increase (+8 million kroner), but buy-out increases (+9 million kroner)
- TAP salary increases (+2,2 million kroner, 1.6 million kroner due to administrative reorganization). TAP buy-out increases (+1 million kroner).



- Costs related to educations are moved from School to Department (censors, student travels, PR, etc.) + 4,4 million kroner.
- Annuum is unchanged (20.000 kroner per employee divided between group and section)
- Strategic funds in sections are maintained (total 0,5 million kroner)
- Only 0,6 million kroner at department level for strategic issues (2x5%) we have to implement this in our daily activities
- Investments: 3,5 million kroner for X-power 0,5 million kroner for others.
- A tight budget in balance with no reduction of permanent staff and with few strategic funds available.



MP Budget 2019 - income

In 1,000 dkr	2018		2019				
	Budg	get	Budg	et	Difference		
Income	Department	Projects	Department	Projects	Department	Projects	
1.1 Faculty income (indtægtsramme)	-91.852		-141.210		49.358		
1.2. Other income	-225		-240		15		
1.3 Projects		-48.177		-61.797		13.620	
Total	-92.077	-48.177	-141.450	-61.797	49.373	13.620	
2.1. Overhead	-12.485		-16.139		3.654		
2.1 Co-financing		-2.319		-4.441		2.122	
Total	-12.485	-2.319	-16.139	-4.441	3.654	2.122	
2.3 Co-financing: Equipment (40%)	-2.402		-3.200		798		
Other Faculty income	-1.527		-1.325		-202		
Total	-3.929		-4.525		596		
Total income	-108.491	-50.496	-162.114	-66.238	53.623	15.742	

MP Budget 2019 - costs

In 1,000 dkr	2018 Budget		202	19		
			Bud	get	Difference	
Cost	Department	Projects	Department	Projects	Department	Projects
3.1.2 Operation costs (annuum etc.)	9.004	6.393	9.334	6.875	-330	-482
Equipment (over 100,000 dkr.)	1.753	2.053	4.000	4.000	-2.247	-1.947
Total	10.757	8.446	13.334	10.875	-2.577	-2.429
3.2.1 VIP-salaries	73.902		81.997		-8.095	
3.2.2 VIP-buy out	-26.574	26.752	-35.599	35.563	9.025	-8.811
3.2.3 TAP-salaries	16.817		19.055	90	-2.238	-90
3.2.4 TAP-buy out	-2.228	2.289	-3.388	3.373	1.160	-1.084
3.2.5 Løntilskud mv.	916		930	25	-14	-25
3.2.6 Refusioner	-808		-1.083		275	
Total	62.025	29.041	61.912	39.051	113	-10.010
4.1. Overhead		12.987		16.311		-3.324
4.1.3 Co-financing projects	2.319		4.441		-2.122	
Total	2.319	12.987	4.441	16.311	-2.122	-3.324
Rent (FIB 14+16+Skjernvej+CPH)	24.305		23.090		1.215	
FAK-tax (AAU tax 13,0%)			18.359		-18.359	
FU-tax (AAU tax 5,3%)			7.450		-7.450	
FS-tax (AAU tax 23,3%)	7.790		32.754		-24.964	
Maintenance/other cost	900		711		189	
Total	32.995		82.364		-49.369	
Total costs	108.096	50.474	162.050	66.238	-53.954	-15.764
Result	-395	-22	-64	0	331	-22



Questions?





Notat om aktivitetsplanlægning og arbejdsbelastning på Institut for

Materialer og Produktion

Ledelsen i Institut for Materialer og Produktion har nedsat en arbejdsgruppe, som har arbejdet med en ny model for registrering og planlægning af aktiviteterne på instituttet.

Arbejdsgruppen har bestået af Institutleder Kjeld Pedersen, viceinstitutledere Astrid Heideman Lassen og Jens H. Andreasen samt TR Lars Rosgaard. Desuden har sekretariatet deltaget i arbejdet.

Arbejdsgruppen har haft følgende formål for arbejdet med en model for planlægning og registrering af aktiviteter på instituttet:

- At aktiviteterne fordeles mellem medarbejderne på en retfærdig, gennemskuelig og forudsigelig måde.
- At beskytte yngre forskere.
- At understøtte forskningsgrupperne, som den planlægningsmæssige og kollegiale enhed på instituttet.
- At skabe et beslutningsgrundlag for kapacitetsplanlægning.

1. Aktivitetsplanlægning

Arbejdsgruppen lægger vægt på, at forskningsgruppen spiller en central rolle for planlægning og fordeling af opgaver mellem gruppens medlemmer, så fordelingen bliver så retfærdig og faglig god som muligt. Det er i gruppen, man kan vurdere, hvor mange og hvilke opgaver den enkelte kan håndtere, og det er i gruppen, der er overblik over, hvem der skal bruge tid på at skrive ansøgninger, publikationer osv. Der skal være plads til, at grupperne vurderer belastningen individuelt. Hvis fordeling inden for gruppen ikke fungerer skal det løses ledelsesmæssigt og ikke gennem matematiske modeller.

Alle VIP ansatte forventes at undervise. Udenlandske medarbejdere skal så vidt muligt undervise på lige fod. Det kræver lidt planlægning, men vurderes at være muligt.

Sekretariatet udarbejder forud for hvert semester en template til undervisningsplanlægning for hver gruppe, heraf fremgår kurser o.lign. samt forventet antal vejledninger. Gruppen skal inden for en fastsat tidsgrænse bemande undervisningen.

Hvis der er behov for koordinering mellem grupper f.eks. om fordeling af vejledninger tager sektionslederen initiativ til en afklaring heraf så tidligt som muligt.

Ved gruppens fordeling af undervisningsopgaver bør der tages særligt hensyn til yngre forskere, som har behov for at opbygge deres karriere. De bør derfor ikke belastes med mere undervisning end:

- Adjunkt max. 40% undervisning.
- Postdoc max 20% undervisning ved fuld frikøb
- Postdoc max 40% undervisning ved fuld institutfinansiering
- Phd. max. max. 150 t/undervisning pr. semester. PhD forventes primært at udføre vejledning og enkelte kursusgange.

Det er op til gruppen at indarbejde dette i planlægningen. Der følges op ledelsesmæssigt f.eks. ved GRUS, MUS o.lign.

Lederne tager initiativ til jævnlig forventningsafstemning i sektionerne om niveauet for arbejdsbelastningen ved forskellig undervisning f.eks. kursusgange ift. ETCS f.eks. på sektionsmøder.

2. Aktivitetsregistrering

Arbejdsgruppen foreslår, at der sker en registrering af den enkeltes aktiviteter, men at denne individuelle opgørelse er et dialogværktøj mellem den enkelte og dennes leder, og derfor ikke udsendes til resten af instituttet.

På tværs i instituttet sker dialogen med udgangspunkt i en opgørelse over aktiviteterne fordelt på gruppeniveau. Se vedhæftet eksempel.

Ved aktivitetsregistrering medtages:

- Rekvireret undervisning og administration
- Frikøbt tid i projekter
- Større opgaver på tværs af instituttet: viceinstitutledere, sektionsledere, TR samt deltagelse i Akademisk Råd, SU, AMIU og institutråd
- Phd vejledning (70 timer pr. semester, medmindre timerne frikøbes på et projekt)
- Gruppen tildeles administrativ tid svarende til 50 timer årligt pr. lektor/professor. Gruppen fordeler selv denne tid til gruppens medlemmer.

Herudover har arbejdsgruppen drøftet om der skal indgå andet i tidsregistreringen. Dette arbejdes der videre med.

Det er målet, at der sker en retfærdig fordeling af kapaciteten mellem grupperne. Modellen kan synliggøre, men ikke løse kapacitetsudfordringer. De skal håndteres ledelsesmæssigt gennem budgetlægning, personaleplanlægning, undervisningsplanlægning mv.

Fra efteråret 2018 nedlægges skolerne, hvorved systemet med rekvirering af undervisning må forventes at ophøre. Fra 2019 må vi derfor forvente, at vi selv skal fastsætte normen for registrering af undervisning evt. med udgangspunkt i, hvad vi "tjener" på undervisning (STÅ). Det tager vi stilling til, når vi har afklaring af budget(model) 2019.

Proces og Evaluering

Arbejdsgruppen foreslår, at modellen drøftes i SU den 3. maj 2018, hvorefter den afprøves ved planlægning af E18.

Modellen evalueres og tilrettes bl.a. med inddragelse af SU i efteråret 18

Ramme til									
		Rekvireret	Budgetteret	administratio	Rekvireret	Budgetteret	Ramme til	Kapacitet til	
	Kapacitet	undervisning	frikøb 2018	n 2018	Undervisning	frikøb 2018	administratio	øvrige	
Forskningsgruppe	2018 (timer) ¹	2018 (timer) ²	(timer) ³	(timer) ⁴	2018 (pct)	(pct)	n 2018 (pct)	opgaver	
Behavioural operations									
and innovation									
management	14.130	6.206	5.025	300	44%	36%	2%	18%	
Biomechanics	9.914	2.017	5.816	350	20%	59%	4%	17%	
Celog	8.363	3.732	3.144	200	45%	38%	2%	15%	
CIP	37.406	16.214	14.440	1.321	43%	39%	4%	15%	
FYSIK (MP)	21.078	3.564	13.102	250	17%	62%	1%	20%	
Logistics and Supply									
Chain	12.824	5.649	2.295	200	44%	18%	2%	36%	
Mass Customization	8.715	5.231	2.977	100	60%	34%	1%	5%	
Materials Science and									
Engineering	26.301	10.140	8.241	2.535	39%	31%	10%	20%	
Operations Research	11.617	2.290	5.730	150	20%	49%	1%	30%	
Robotics and									
automation	22.196	6.993	11.969	300	32%	54%	1%	13%	
Robotics, Vision and									
Machine Intelligence	12.178	3.361	4.393	757	28%	36%	6%	30%	
Solid and									
Computational									
Mechanics	25.402	6.896	10.508	300	27%	41%	1%	30%	
Grand Total	210.124	72.294	87.639	6.763	35%	41%	3%	21%	

Bilag 1: Budgetteret fordeling af aktiviteter på Institut for Materialer og Produktion 2018.

¹ Kapaciteten beregnes som 1642 timer pr. budgetteret årsværk

² Rekvireret undervisning forår 2018 og forventet undervisning efterår 18

³ Frikøb budgetteret i oprettede projekter samt i bufferprojekter

⁴ Rammen beregnes som 50 timer pr. fastansat (lektor og professor) samt fastsat tid til ledelse, tillidsrepræsentant samt større opgaver for forskerskolen.

Evaluation criteria for career advancements at MP

Several aspects must be addressed to to have a flexible assessment of candidates, both with hiring of new employees and promotion to new positions.

The assessment criteria shall apply both for internal and external candidates in an identical manner. An assessment of the qualifications needs to take into consideration a number of independent assessment dimensions. On the other hand, no one can perform on top on all criteria. A candidate needs to be very good in at least a couple of the following dimensions. High priority should, however, be given to research qualifications and teaching experiences.

It is important to stress that fulfilment of the criteria described below does not automatically guarantee advancement from postdoc or assistant professor to associate professor level. Positions at permanent levels are part of long-term combined research and educational strategies at the department.

The choice of a suitable candidate for a given position needs to accommodate the needs and priorities of the Department, Section, but also Research Group at the given point in time.

The points below describe important points in the assessment.

General description of assessment criteria

1. Research qualifications

- o Extent of research achievements
 - Number of publications and first authorship publications
 - Quality and impact factor of journals and conferences
 - Citations (such as h-index or absolute number)
- o Trend in publications

2. Teaching

- o Relevant teaching experience
- o Special initiatives in the area of teaching
- Quality of teaching
- Pedagogical education
- Involvement in student projects
- Involvement in study administration
- Experience with problem based learning

3. Research collaboration with industry and society.

- o Involvement in research projects with industrial partners
- \circ $\;$ Involvement in student projects in collaboration with industry
- Dissemination towards Industry and Society

o Participation in networks

The assessment should take into consideration the network of the candidate within industry at a local or international level and the ability to utilize the network to create research grants.

4. Research Project Involvement

- o Experience with research applications
- Involvement in research projects with other university partners.
- o Experience with management and implementation of research projects
- Patents and innovation

5. International Experience

- o Research stays at international research environments
- o International research collaborations

6. Contribution to Organizational Development

- \circ $\;$ Participation in formal coordination committees
- Initiating organizational development

Criteria for the position as Assistant Professor at the Department of Materials and Production

A suitable candidate for an Assistant Professor position should have a profile, which makes him/her likely to embark on a successful career at the department. He/she should hold a doctoral degree that is relevant to the Department's research focus and strategic direction. Moreover, the candidate should be able to present a promising research strategy for the coming years and show the potential to publish research output in international peer reviewed journals (e.g. according to the WOS list or the Danish BFI list). It is considered an advantage to have some prior experience with teaching/supervision.

The criteria described below are examples of activities and performance, which increase the likelihood of 1) being assessed qualified by an assessment committee, and 2) being considered relevant for the position:

Research qualifications

- o Extent of research achievements
 - Number of publications and first authorship publications
 - Quality and impact factor of journals and conferences
 - Papers in progress with a reputable journal
 - Co-authorship with international researchers
 - Reviewer activities for journals and conferences
 - Presentations at reputable conferences, seminars and workshops etc.
- o Trend in publications

Teaching

- Relevant teaching experience
- o Involvement in student projects
- o Experience with problem based learning

Research collaboration with industry, society and academia.

- o Involvement in research projects with industrial partners
- o Involvement in research projects with other university partners
- o Involvement in student projects in collaboration with industry
- o Dissemination towards Industry and Society
- o Participation in networks

Research Project Involvement

 Experience with external funding, e.g. involvement in preparation of research applications and execution of research projects with colleagues from the research group, or department, or externals to the university

International Experience

- o Research stays at international research environments
- o Participation in International research communities

After employment of an Assistant Professor, he/she together with Research Group Coordinator and Head of Section need to prepare a development plan for what to achieve in order to qualify for a career after completion of the Assistant Professorship. That development plan will assign priorities to the aforementioned assessment dimensions, in order to encourage a more complete and rounded profile. This development plan will be followed up during the subsequent MUS talks.

Criteria for the position as Associate Professor at the Department of Materials and Production

Promotion to Associate Professor signals the maturity of an Assistant Professor into becoming a well-rounded academic. In order to be considered for promotion to the position of Associate Professor at the department, candidates are therefore required to have established their own research profile, to be active teachers, and to be value-adding members of their research community.

The criteria described below are examples of activities and performance that increase the likelihood of 1) being assessed qualified by an assessment committee, and 2) being considered relevant for the position.

Research qualifications

- Extent of research achievements, as evaluated by:
 - Number of publications in journals on the WOS list and the Danish BFI-list
 - Quality and impact factor of journals and conferences
 - Co-authorship with international researchers
 - Research monographs published with leading international publishers
 - Demonstrated research impact, for example measured by WOS, SCOPUS, Google Scholar citations, etc.
 - Reviewer activities for journals and conferences
 - Presentations at reputable conferences, seminars and workshops etc.
 - The organization of conferences, workshops, and conference tracks
 - Participation in research networks
- o Trend in publications

Teaching

- Relevant teaching experience
- Involvement in student project
- Experience with PBL
- o Good teaching evaluations
- o Course responsibility and course development experience
- Completion of pedagogical training, including PBL
- Supervision of Bachelor and Master students

Teaching is an important aspect at any university, so it is expected that an Associate Professor has well-rounded qualifications in teaching and exercises them in practice.

Research collaboration with industry, society and academia.

- Relationships with the surrounding business community that provides access to research and teaching
- o Involvement in research projects with industrial partners
- o Involvement in research projects with other university partners
- o Involvement in student projects in collaboration with industry
- o Dissemination towards Industry and Society
- Participation in networks

The assessment should take into consideration the network of the candidate within industry at a local or international level and the ability to utilize the network to create research grants.

Research Project Involvement

- Experience with research application and external funding, e.g. involvement in preparation of research applications and execution of research projects with colleagues from the research group, or department, or externals to the university
- o Experience with management and implementation of research projects
- \circ $\,$ Creation of patents and/or innovation $\,$

International Experience

- o Research stays at international research environments
- Participation in International research collaboration

It is expected that an Associate Professor should have developed an international network and showed his/her ability to operate within an international context.

Contribution to Organizational Development

- o Contributions to departmental activities/responsibilities
- Organization of and presentation at the department's research seminars
- o Administrative coordination tasks for the department

Criteria for the position as <u>Professor MSO</u> at the Department of Materials and Production

Experienced Associate Professors with a promising research agenda that is considered pivotal for the department's research strategy can seek promotion for a Professor MSO position. The specific task forming the basis of the position and its relation to the department strategy must be clearly defined.

The criteria described below are examples of activities and performance that increase the likelihood of 1) being assessed qualified by an assessment committee, and 2) being considered relevant for the position.

Research qualifications

- Extent of research achievements, as evaluated by:
 - Number of publications in journals on the WOS list and the Danish BFI-list
 - Quality and impact factor of journals and conferences
 - Co-authorship with international researchers
 - Research monographs published with leading international publishers
 - Demonstrated research impact, for example measured by WOS, SCOPUS, Google Scholar citations, etc.
 - Editorial board membership in peer-reviewed journals
 - Editorship of books and/or special issues of peer-reviewed journals
 - Reviewer activities for journals and conferences
 - Presentations at reputable conferences, seminars and workshops etc.
 - The organization of conferences, workshops, and conference tracks
 - Participation in research networks
 - Facilitation of a research environment

Teaching

- Relevant teaching experience
- o Administration and management of study programs
- New course development
- Excellent teaching evaluations
- o Supervision of Bachelor, Master and PhD students
- Teaching awards or other recognitions

Teaching is an important aspect at any university, so it is expected that a Professor MSO has well-rounded qualifications in teaching and exercises them in practice.

Research collaboration with industry and society.

- Relationships with the surrounding business community that provides access to research and teaching
- o Involvement in research projects with industrial partners
- o Involvement in student projects in collaboration with industry
- o Dissemination towards Industry and Society
- Participation in networks

The assessment should take into consideration the network of the candidate within industry at a local or international level and the ability to utilize the network to create research grants.

Research Project Involvement

- Experience with research application and external funding, e.g. through design and coordination of research applications and execution of research projects with colleagues from the research group, or department, or externals to the university
- o Experience with management and implementation of research projects
- \circ $\,$ Creation of patents and/or innovation
- Ability to attract external funding

International Experience

- o Research stays at international research environments
- Participation in International research collaboration
- Organization of international conferences etc.
- Recognized by international research communities through e.g. participation in PhD assessment committee work

It is expected that a Professor MSO should have developed an international network and showed his/her ability to operate within an international context.

Contribution to Organizational Development

- o Contributions to departmental activities/responsibilities
- o Organization of and presentation at the department's research seminars
- o Administrative coordination tasks for the department
- Participation in and leadership of research groups
- o Administrative responsibilities for the department or university
- Activities to promote and support the department or colleagues at the department
- Dissemination to society in various forms, e.g. statements to the media, presentations and shorter articles
- Participation in regulatory bodies, research councils, commissions etc.

Criteria for the position as Full Professor at the Department of Materials and Production

To be promoted to the position of full professor, the candidate must have achieved an international reputation for excellence in research. Moreover, it is expected that the candidate has an ongoing research agenda on the current level of excellence and impact. The candidate should also demonstrate research leadership by establishing the basis for other researcher's activities at the department and by engaging them in various forms (e.g. at seminars and workshops). Furthermore, the candidate must contribute to the achievement of the departments overall strategy.

High-quality teaching at all levels is necessary to obtain the position of Full Professor, which includes the transfer of the current body of knowledge and the effective communication with students reflected in superior teaching evaluations. Moreover, dissemination of current research is of high importance in supporting the profile of the department.

The criteria described below are examples of activities and performance that increase the likelihood of 1) being assessed qualified by an assessment committee, and 2) simultaneously being considered relevant for the position.

Research qualifications

- Extent of research achievements, as evaluated by:
 - Number of publications and first authorship publications in journals on the WOS list and the Danish BFI-list
 - Quality and impact factor of journals and conferences
 - Co-authorship with international researchers
 - Research monographs published with leading international publishers
 - Demonstrated research impact, for example measured by WOS, SCOPUS, Google Scholar citations, etc.
 - Editorial board membership in peer-reviewed journals
 - Editorship of books and/or special issues of peer-reviewed journals
 - Reviewer activities for journals and conferences
 - Presentations at reputable conferences, seminars and workshops etc.
 - The organization of conferences, workshops, and conference tracks
 - Participation in research networks
 - Facilitation of a research environment

Teaching

- Relevant teaching experience
- o Administration and management of study programs
- New course development
- o Excellent teaching evaluations
- Supervision of Bachelor, Master and PhD students
- Teaching awards or other recognitions

Teaching is an important aspect at any university, so it is expected that a Full MSO has excellent qualifications in teaching and exercises them in practice.

Research collaboration with industry, society and academia.

- Relationships with the surrounding business and political community that provides access to research and teaching
- Leading research projects with industrial partners
- o Involvement in research projects with other university partners
- o Involvement in student projects in collaboration with industry
- Dissemination towards Industry and Society
- Participation in industrial networks

The assessment should take into consideration the network of the candidate within industry at a local or international level and the ability to utilize the network to create research grants.

Research Project Involvement

- Highly experienced with research application and external funding, e.g. through design and coordination of research applications and execution of research projects with colleagues from the research group, or department, or externals to the university
- o Highly experienced with management and implementation of research projects
- Creation of patents and/or innovation
- $\circ \quad \text{Ability to attract external funding} \\$

International Experience

- o Research stays at international research environments
- o Participation in International research collaboration
- Organization of international conferences etc.
- Recognized by international research communities through e.g. participation in PhD assessment committee work

It is expected that a Full Professor should have developed an international network and showed his/her ability to operate within an international context.

Contribution to Organizational Development

- o Contributions to departmental activities/responsibilities
- o Organization of and presentation at the department's research seminars
- o Administrative coordination tasks for the department
- o Participation in and leadership of research groups
- Administrative responsibilities for the department or university
- Activities to promote and support the department or colleagues at the department
- Dissemination to society in various forms, e.g. statements to the media, presentations and shorter articles
- Participation in regulatory bodies, research councils, commissions etc.