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October 23, 2019

Two-Cycle Medical Education in the EHEA

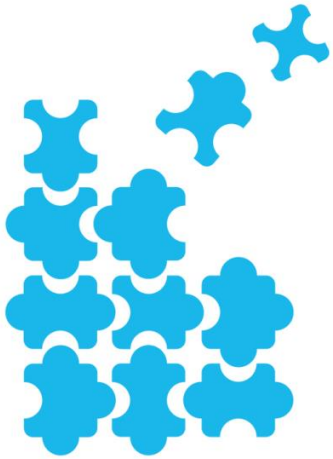
Wilson Macha
Senior Knowledge Analyst
World Education Services

Ryan McNally
Knowledge Management Specialist
World Education Services

Agenda

Part I: Bologna Process
Part II: Professional Education
Part II: Arguments For
Part III: Arguments Against
Part IV: Examples
Part V: Discussion

European Higher Education Area (EHEA)



EUROPEAN
Higher Education Area

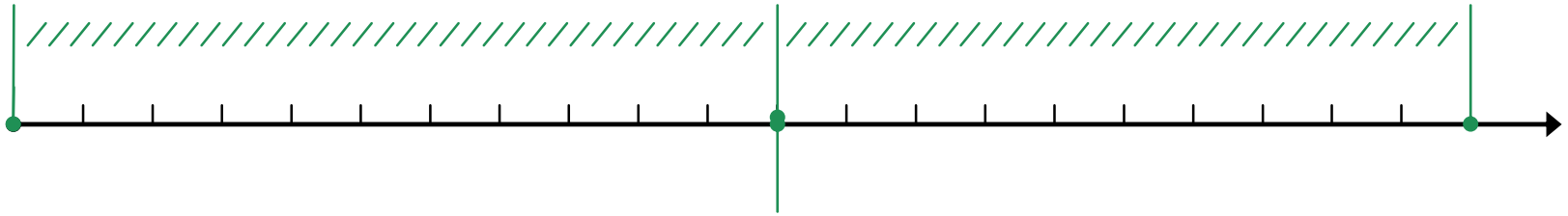
Bologna Process Timeline

1999–2010

The Bologna Process members work towards the creation of the European Higher Education Area

2010–2020

All countries are to strive to consolidate the EHEA



March 2010

The EHEA is officially launched

The Bologna Process 2000 – Present

1999:
Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom.

2001:
Croatia, Cyprus, Liechtenstein, Turkey

2003:
Albania, Andorra, Bosnia and Herzegovina, Macedonia, Russia, Serbia, Vatican City

2005:
Armenia, Azerbaijan, Georgia, Moldova, Ukraine

2007–2015:
2007: Montenegro
2010: Kazakhstan
2015: Belarus

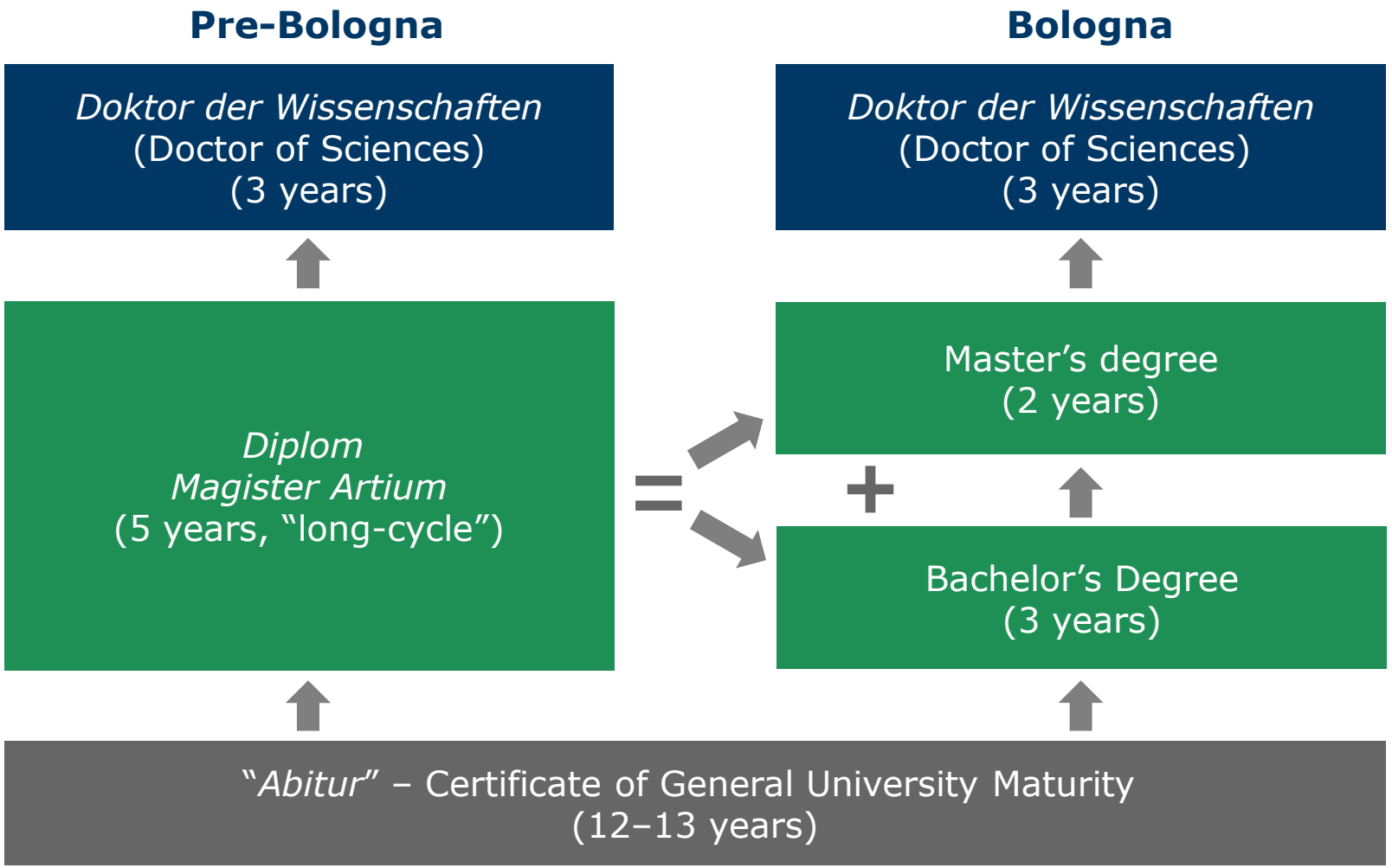
Key Features of the Bologna Process

- The Three-cycle Degree Structure: Bachelor, Master, Doctorate
- European Credit Transfer System (ECTS)
- Common Grading Scale
- Diploma Supplement
- Quality Assurance
- Qualifications Framework

Three-Cycle Degree Structure

- Bachelor's, Master's, and Doctoral degrees
- The new bachelor's/master's sequence replaces the traditional long one-cycle university degrees that gave direct access to the doctorate
- For example, the German *Diplom* has largely been replaced by the bachelor's/master's degree sequence.

Pre-Bologna and Current Bologna Structure of German University Education



Bologna Degree Cycles and the ECTS - European Credit and Transfer System

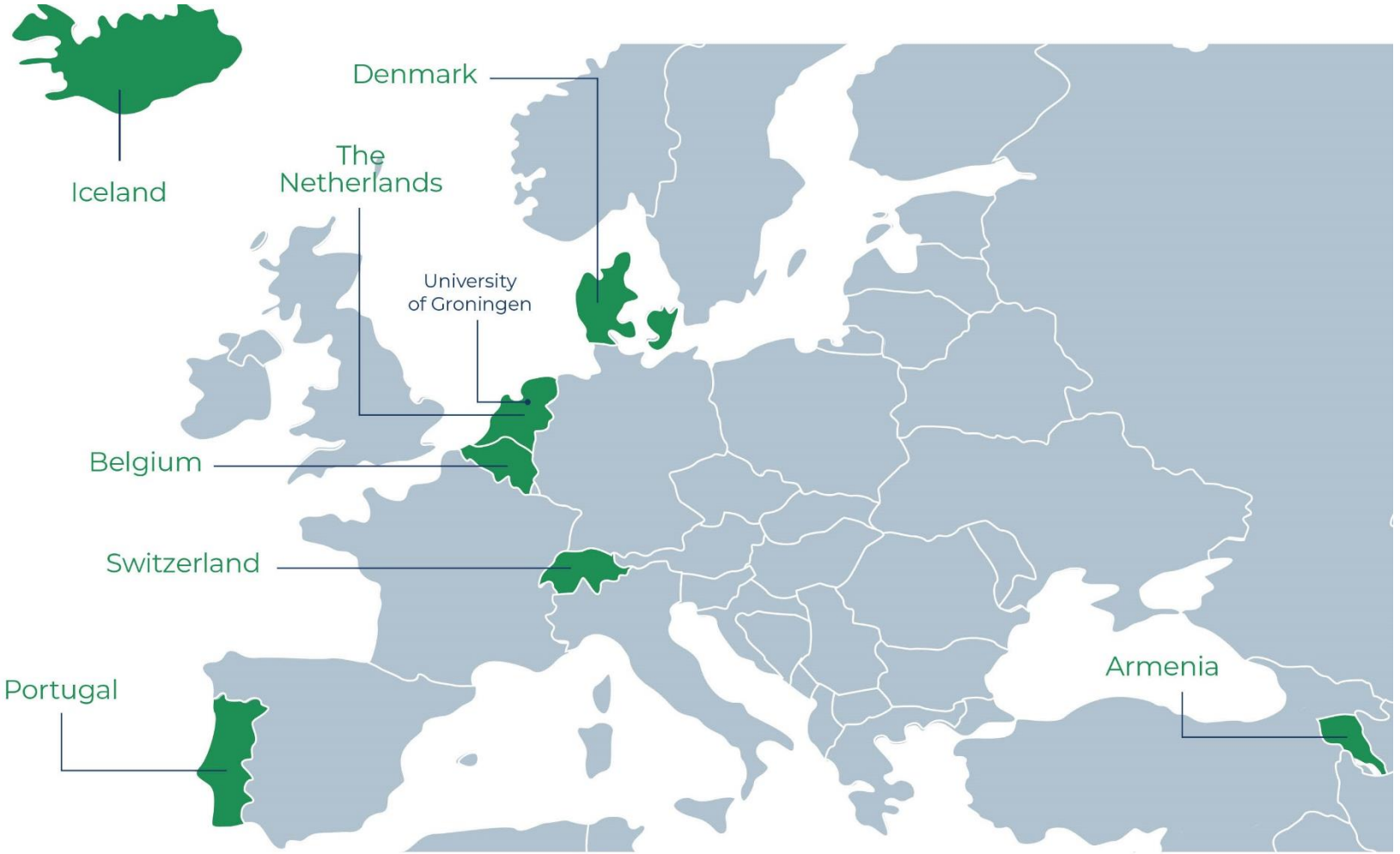
60 ECTS credits for each year of study

Each ECTS credit corresponds to 25-30 hours of all study activities (class, labs, homework, excursions)

- 3-Year Bachelor's Degree — 180 ECTS credits
- 4-Year Bachelor's Degree — 240 ECTS credits
- 1-Year Master's Degree — 60 ECTS credits
- 2-Year Master's Degree — 120 ECTS credits

Both the 3+2 and the 4+1 bachelor's/master's sequence require a minimum of 300 ECTS credits

Two-Cycle Medical Degrees in the EHEA



“

What will the Bachelor of Medicine be qualified to do? She or he may have basic medical knowledge but is barely employable and cannot be let loose on the unsuspecting public anywhere in Europe. Indeed, the mandatory EU guideline … requires at least six years of theoretical and practical training to be eligible … as a practicing physician.… It has been argued that the Bachelor of Medicine might gain popularity among medical students, if they would take it as an opportunity to drift away into the non-curative branches of the field ….

We argue that this is nonsense … why should we encourage our students to quit before they have reached their and indeed our goal?”

Josef Pfeilschifter

Director of the Institute of General Pharmacology and Toxicology
Goethe-University of Frankfurt am Main

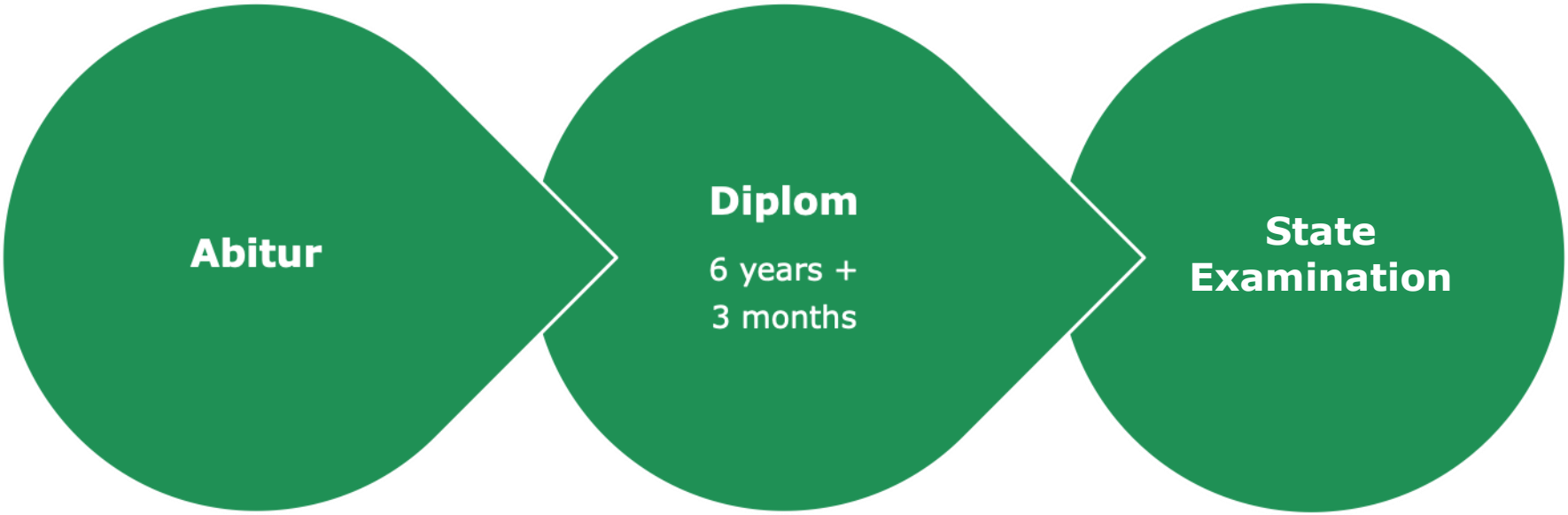
Timeline:
Institutions Implementing the Two-Cycle Medical Degree

2003	Belgium	Université Libre de Bruxelles; Katholieke Universiteit Leuven
	The Netherlands	University Medical Center of Groningen
2004	Belgium	Universiteit van Antwerpen, Université de Liège; Universiteit Gent, Vrije Universiteit Brussel, Université Catholique de Louvain
2005	Denmark	Southern Denmark University, Aarhus University, Copenhagen University
	The Netherlands	Radboud University Medical Center, Free University Medical Center
	Switzerland	University of Lausanne, University of Geneva
2006	The Netherlands	Maastricht University, University Medical Center Utrecht
2007	Armenia	Yerevan State Medical University
	Switzerland	University of Basel, University of Bern
	The Netherlands	Erasmus University Medical Center and Leiden University Medical Center
	Portugal	Porto University, New University of Lisbon, Beira Interior University, Lisbon University, Minho University, University of the Algarve
2009	Switzerland	University of Zürich
	The Netherlands	University of Amsterdam
	Portugal	Coimbra University
2010	Iceland	University of Iceland

Medical Degrees in Europe:
Prior to Bologna

- Curricula are regulated at a national level, with different program lengths between countries, relatively incomparable and often focus on addressing country-specific health issues.
- Often curricula would follow 'two-block structure' with the first few years of study focusing on basic science followed by complete shift to clinical practice.
- However, by the 1990s, many European countries had begun their own curricular reforms, moving away from this practice and creating more integrated, problem-based learning curricula.
- A primary medical degree earned in any European country would not necessarily mean formal recognition in other European countries.

Long-Cycle Professional Degree (DEU)



Medical Degrees and Bologna Reforms

- Medical education has been slow to submit to the Bologna reforms .
- Two-cycle medical training was pioneered in the Netherlands and Belgium. The first European university to adopt the new model was the University of Groningen.
- "Basic medical training shall comprise at least six years of study, or 5,500 hours of theoretical and practical training provided by, or under the supervision of, a university."
- "Primary medical degree qualifications and postgraduate specialist qualifications obtained anywhere within Europe are formally recognized in all other European countries" (EU Parliament and Council Directives 81/1057/EEC)

Different Structures of Two-Cycle Medical Education

3+3

180 ECTS
Bachelor

180 ECTS
Master

4+2

240 ECTS
Bachelor

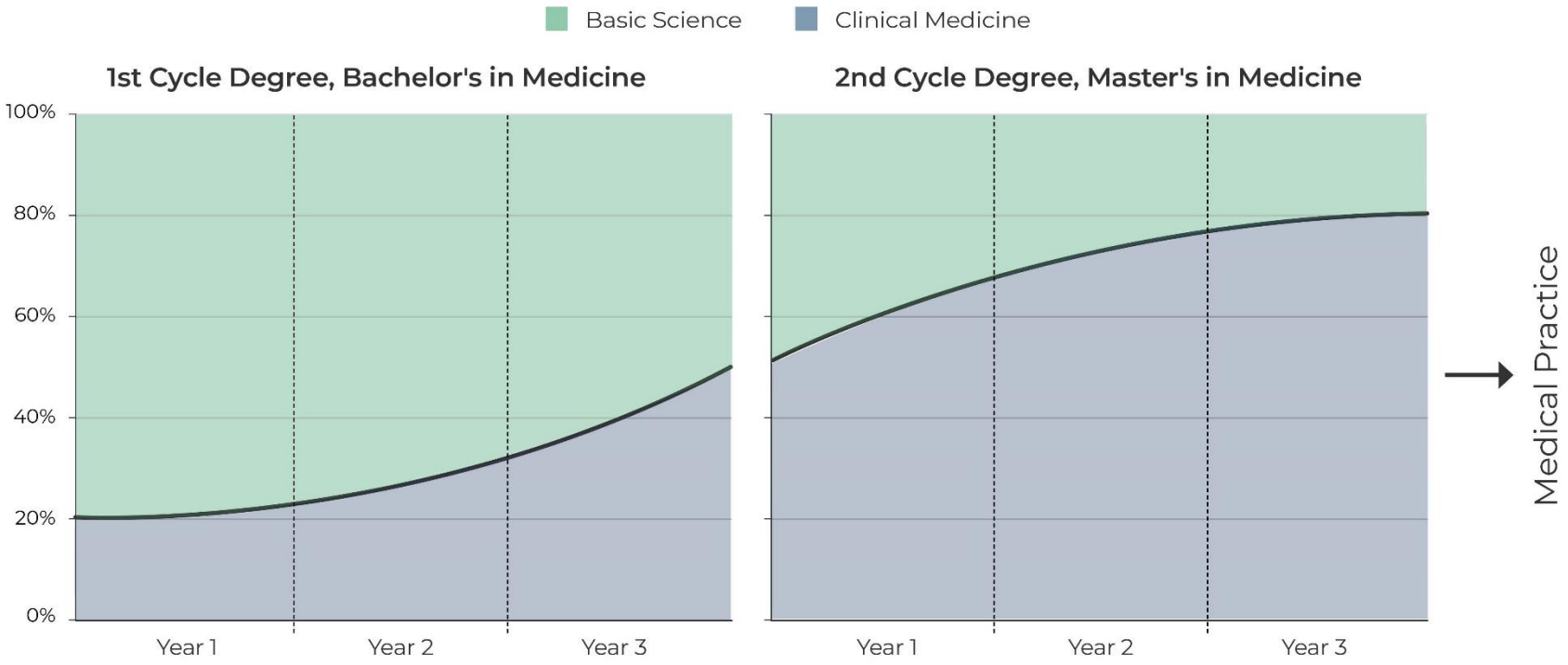
120 ECTS
Master

Bachelor en Passant*

Exit qualification. Given after **3 years**.

G2020:
University of Groningen Model

Diagram of an Integrated Two-Cycle Medical Program



Source: Allan Cumming

Arguments for Two-Cycle Medical Education

Student Mobility

Career Flexibility

Bridging Programs

Robust Quality Assurance

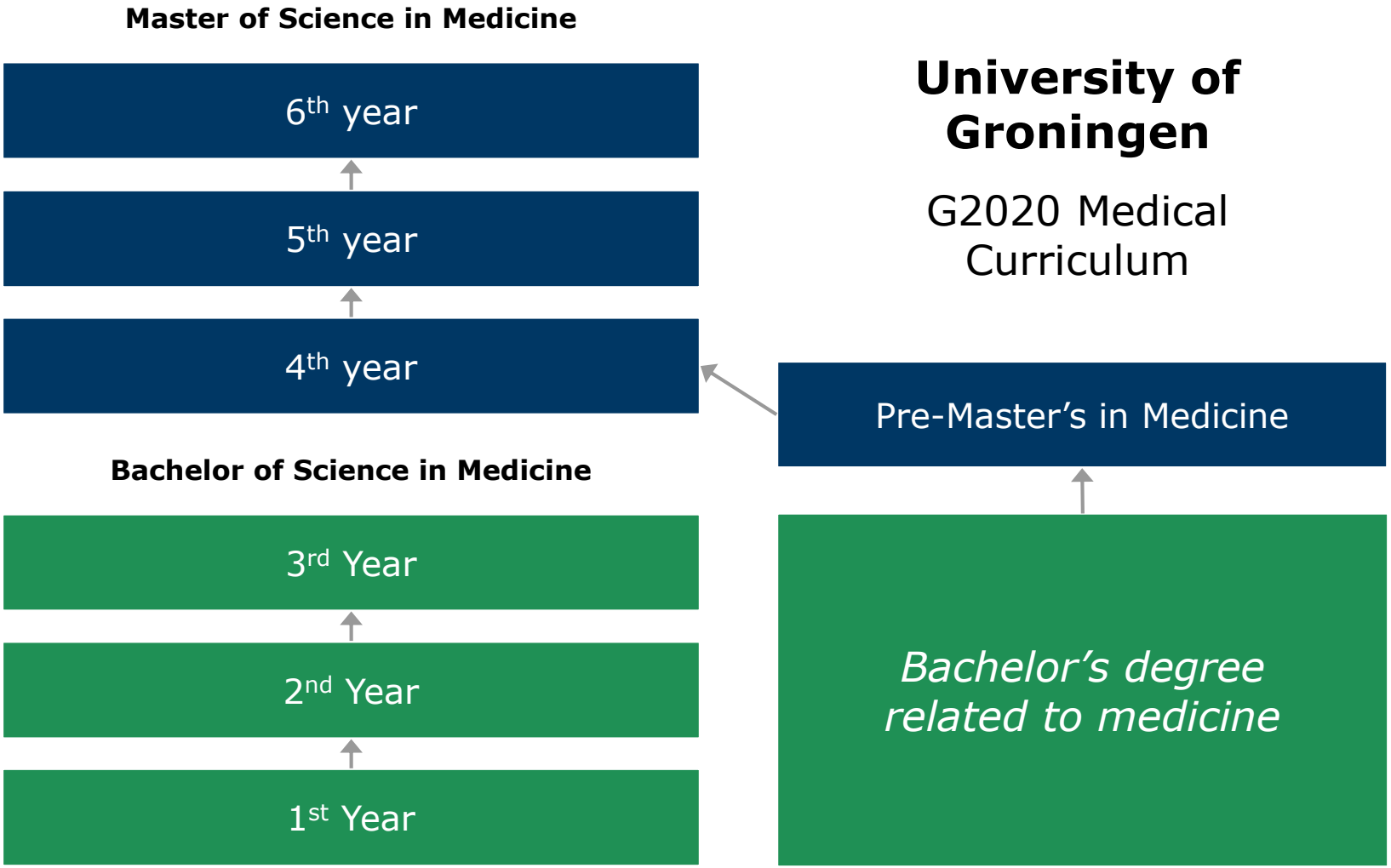
Student Mobility

- Standardization of ECTS credits and learning outcomes allows for cross-border recognition of programs.
- Horizontal vs. Vertical mobility
- Mobility prepares students for changing work conditions and international challenges which may be beneficial in their future professions.
- As of 2014, students in health and welfare made up the lowest share of students in participating in the European Union's Erasmus+ programme, at only 6 percent.

Career Flexibility

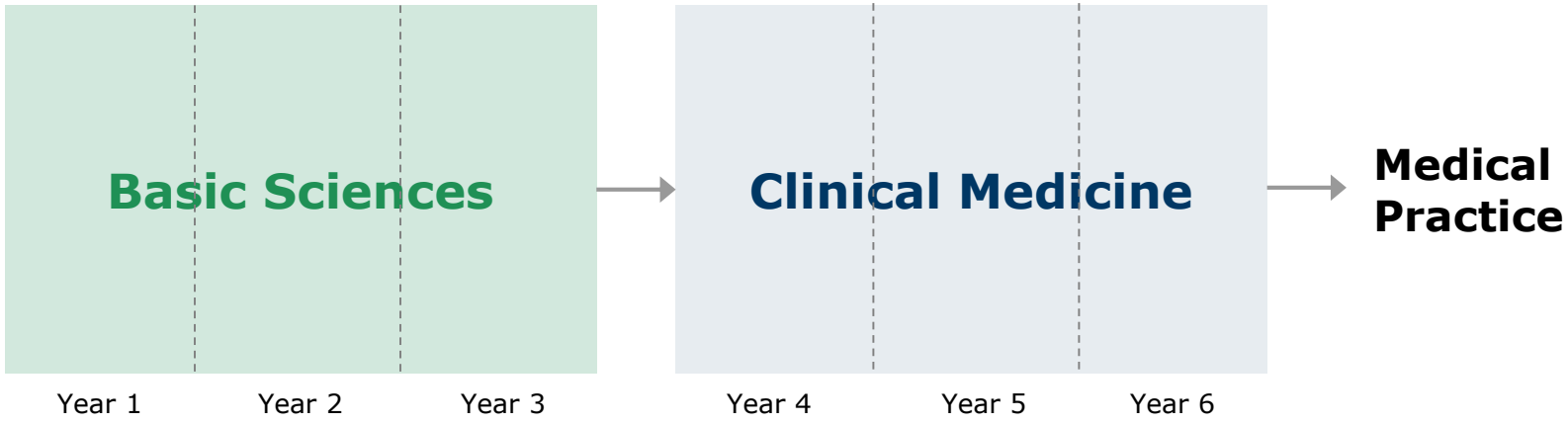
- The first cycle medical bachelor's degree can provide students with access to a master's degree in a related field.
- Allows for students that have completed other bachelor's degrees in related fields access to the medical master's degree.
- Does not encourage students to discontinue medical study anymore than the previous model.
- Students that choose discontinue will often have at least a bachelor's degree.

Bridging Programs



Robust Quality Assurance

- Two-cycle programs could allow for a Europe-wide quality assurance and accreditation system similar to EACCME.
- This could be based around specific learning outcomes for each year of study which in turn would strengthen student mobility, transparency, and comparability.
- Learning outcomes could also prevent disintegration of medical curricula to the 'two-block' structure of years past.



Arguments Against Two-Cycle Medical Education

Disintegrative Effect & Return to the Flexnerian Model

Muddle Comparability

Country Compatibility

Unemployability

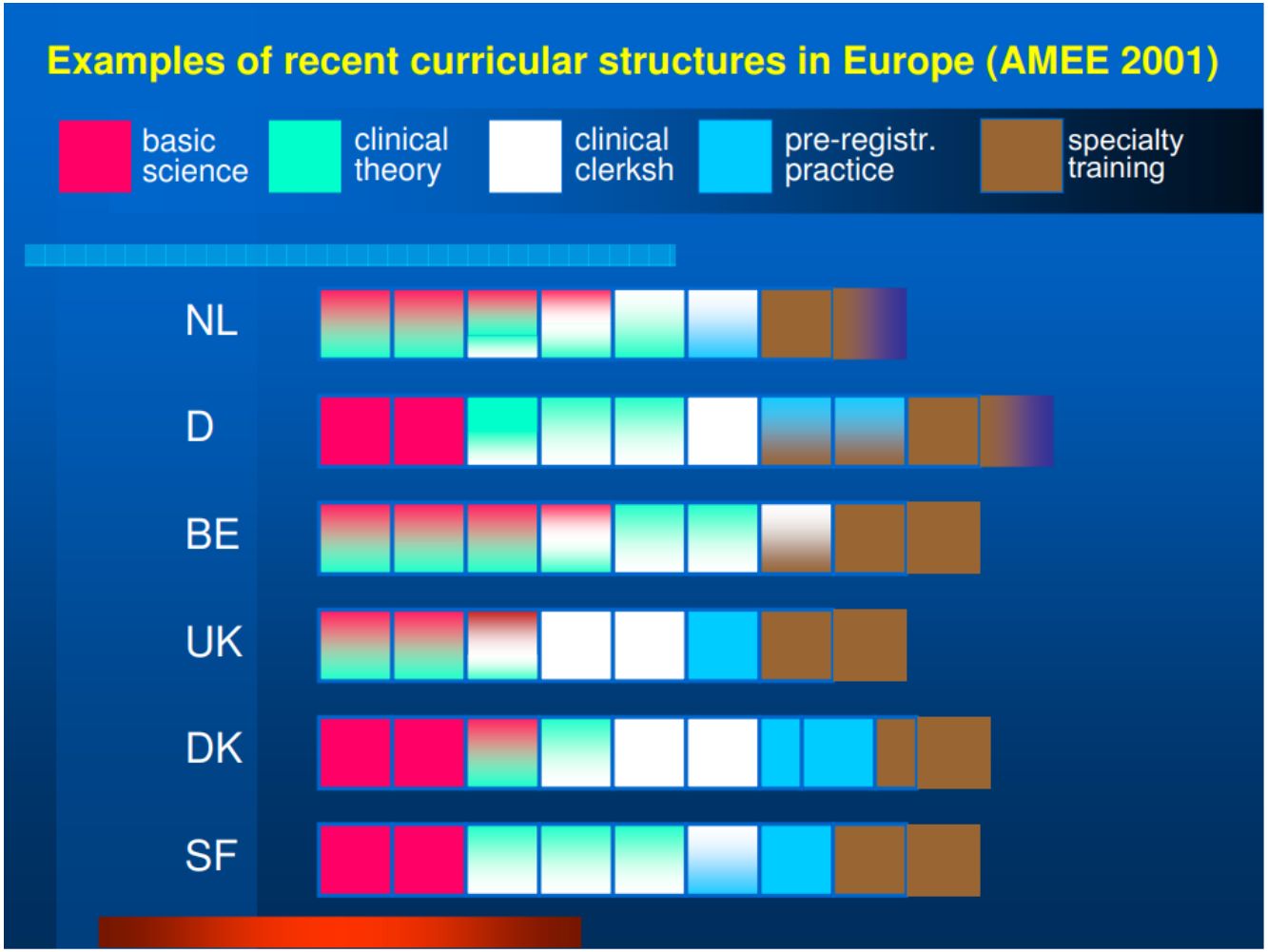
Disintegrative Effect and a Return to the Flexnerian Model

- In the 1990s several European countries independently reformed medical curricula move away from a purely Flexnerian Model.
- Many medical schools found it was advantageous for future doctors to receive exposure to basic science and clinical medicine in the first semester.
- The two-cycle model could encourage medical curricula to focus only on basic science at the Bachelor level and then only practical training at the Master level.

Muddle Comparability

- The EHEA having it's own structure could muddle comparability
- At the same time European universities were reforming their medical curriculum, they sought to align it.
- The additional Bologna reform was thought to be detrimental to alignment efforts.

Comparability Graphic



Prof. Dr. Th J (Olle) ten Cate

Unemployability

- The two-cycle structure would "create a large number of graduates with bachelor's degrees in medicine, whose employment **prospects and place in health care delivery systems would be unclear.**"

Country Compatibility

- Medical needs vary from country to country.
- Pan-European curriculum may not be in the best interest of patients.
- Question of language barriers.
- Competences and learning outcomes not rather than a rigid curricular structure allow for individual schools to modify based on regional needs.

Conclusion

- Converting current long-cycle medical degrees into the two-cycle structure would force many institutions to make changes to their curriculum and shift their priorities.
- Groningen's competency-based, patient-centered curriculum shows that the two-cycle structure can remain integrated. The two-cycle structure has, for the most part, been accepted by Dutch society, even though the majority of Dutch medical students continue to complete the full six-year curriculum, so that the labor market value of a bachelor degree in medicine remains somewhat unproven.
- Most of Europe opposes two-cycle medical education and medical students in most European countries have limited interest in an intermediate first cycle medical degree.

Curriculum: University of Lisbon, 2004–05

Unified Cycle – Licenciatura en Medicina

- Basic health sciences courses
- Pre-clinical courses
- Clinical courses

ANO	DISCIPLINAS	PERÍODO*
Ciclo Básico		
1º Ano	Bioquímica Celular	S1
	Anatomia Normal	S1 e S2
	Introdução à Medicina	S1 e S2
	Medicina Preventiva e Bioestatística(1) (2)	S1 e S2
	Fisiologia I	S2
	Biologia Molecular da Célula	S2
2º Ano	Neuroanatomia	S1
	Psicologia	S1
	Bioquímica Fisiológica	S1 e S2
	Fisiologia II	S1 e S2
	Histologia e Embriologia	S1 e S2
	Imunologia Básica	S2
Ciclo Pré-Clínico		
3º Ano	Genética	S1
	Anatomia Patológica	A
	Farmacologia	A
	Introdução à Clínica	A
	Mecanismos da Doença	A
	Microbiologia	A
Ciclo Clínico		
4º Ano	Cirurgia I(1)	(por blocos rotativos)
	Medicina I(1)	
	Neurociências Clínicas(1) (2)	
	Pediatria I	
	Psiquiatria I e Saúde Mental	
5º Ano	Cirurgia II(1)	(por blocos rotativos)
	Medicina II(1)	
	Medicina e Ciências Sociais(1)	
	Obstetrícia e Ginecologia	
	Pediatria II	
	Psiquiatria II e Saúde Mental	
6º Ano	Estágios Obrigatórios de Pré-Licenciatura(3):	
	Cirurgia	(8 semanas)
	Medicina	(16 semanas)
	Medicina Geral e Familiar e Saúde Mental	
	- Medicina Geral e Familiar	(6 semanas)
	- Saúde Mental	(2 semanas)
	Saúde Materna e Infantil	
	- Pediatria	(8 semanas)
	- Obstetrícia e Ginecologia	(4 semanas)

Curriculum: University of Lisbon, 2018-19

FACULDADE DE MEDICINA LISBOA

Two Cycle – Mestrado Integrado em Medicina

Basic health sciences courses

Pre-clinical courses

Clinical courses

1º ANO

Unidades Curriculares		Área científica	1.º Semestre Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Introdução		CM	42	25	7,5	
Módulos						
I.I	Biologia Molecular, Celular e do Desenvolvimento Humano e Genética	ABC	140	64	5,0	
II.I	Sistemas Orgânicos e Funcionais	ABC / CF	364	138	13,0	
III.I	Medicina Clínica: O Médico, a Pessoa e o Doente	CM	140	40	5,0	
Tronco Comum I						
I.a)	Ética e Ciências Sociais	MPCS	154	15	5,5	
I.b)	Suporte Básico de Vida			4		
			2.º Semestre			
Módulos						
I.II	Biologia Molecular, Celular e do Desenvolvimento Humano e Genética	ABC / CPD	140	44	5,0	
II.II	Sistemas Orgânicos e Funcionais	ABC / CF	336	131	12,0	
III.II	Medicina Clínica: O Médico, a Pessoa e o Doente	MPCS / CM	364	49	13,0	
	Estágio de Cuidados de Enfermagem			48		
	Prática de Saúde na Comunidade I			52		
Totais			1680	610	60,0	

2º ANO

Unidades Curriculares		Área científica	1.º Semestre Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Módulo						
II.III.	Sistemas Orgânicos e Funcionais	ABC / CF	448	119	16,0	
Tronco Comum II						
II.a)	Microbiologia / Infecção / Imunidade	CF / CPD CM / GO	364	124	13,0	
II.b)	Introdução à Medicina da Mulher			28		
Tronco Opcional do 2º ano		Variável	28	10	1,0	Optativa (ver elenco)
			2.º Semestre			
Módulos						
III.III	Medicina Clínica: O Médico, a Pessoa e o Doente/ Prática de Saúde na Comunidade II	MPCS	140	52	5,0	
IV.I	Introdução à Patologia dos Sistemas Orgânicos	CPD	210	60	7,5	
Tronco Comum III a)						
III.a)	Neurociências	N	322	102	11,5	
Tronco Comum III b)						
III.b)	Introdução à Medicina da Criança	P	112	36	4,0	
Tronco Opcional do 2º ano		Variável	56	20	2,0	Optativa (ver elenco)
Totais			1680	551	60,0	

3º ANO

Designação		Área científica	1.º Semestre Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Módulos						
III.IV	Medicina Clínica: O Médico, a Pessoa e o Doente	CM / CC	252	74	9,0	
IV.II	Introdução à Patologia dos Sistemas Orgânicos	CF / CPD	280	100	10,0	
Tronco Comum IV						
IV.a)	Saúde Pública/ Epidemiologia/ Genética	MPCS / CM / SM / CPD	252	50	9,0	
IV.b)	Introdução à Saúde Mental			39		
IV.c)	Introdução às Doenças do Envelhecimento			26		
Tronco Opcional do 3º ano		Variável	56	20	2,0	Optativa (ver elenco)
			2.º Semestre			
Tronco Comum V						
V.a)	Oncobiologia	CM / CF	196	27	7,0	
V.b)	Introdução aos Princípios da Terapêutica			26		
Módulo						
III.V	Medicina Clínica: O Médico, a Pessoa e o Doente	CM / CC	616	83	22,0	
	Medicina Cardiovascular*	CM		20		
	Patologia Digestiva*					
	Doenças do Aparelho Locomotor *					
	Doenças do Sistema Urinário *					
	Endocrinologia e Doenças do Metabolismo*					
	Doenças Respiratórias*					
	Estágio Hospitalar	CM / CC		120		
Tronco Opcional do 3º ano		Variável	28	10	1,0	Optativa (ver elenco)
Totais			1680	595	60,0	

1st cycle

Bachelor in Basic Medicine

4º ANO

Unidades Curriculares		Área científica	Semestrais Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Módulos						
V.I	Medicina Interna	CM	602	350	21,5	
VI.I	Pediatria	P	182	62	6,5	
Tronco Opcional do 4º ano		Variável	56	20	2,0	Optativa (ver elenco)
Módulos						
VII.I	Cirurgia Geral	CC	364	200	13,0	
VIII.I	Psiquiatria	SM	210	96	7,5	
IX	Neurociências Clínicas	N	210	96	7,5	
Tronco Opcional do 4º ano		Variável	56	20	2,0	Optativa (ver elenco)
Totais			1680	844	60,0	

5º ANO

Unidades Curriculares		Área científica	Semestrais Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Módulos						
V.II	Medicina Interna	CM	490	265	17,5	
VIII.II	Psiquiatria	SM	28	21	1,0	
X	Medicina Geral e Ciências Sociais	MPCS	266	125	9,5	
Tronco Opcional do 5º ano		Variável	56	20	2,0	Optativa (ver elenco)
Módulos						
VI.II	Pediatria	P	280	140	10,0	
VII.II	Cirurgia Geral	CC	322	196	11,5	
XI	Obstetrícia e Ginecologia	GO	182	76	6,5	
Tronco Opcional do 5º ano		Variável	56	20	2,0	Optativa (ver elenco)
Totais			1680	863	60,0	

6º ANO

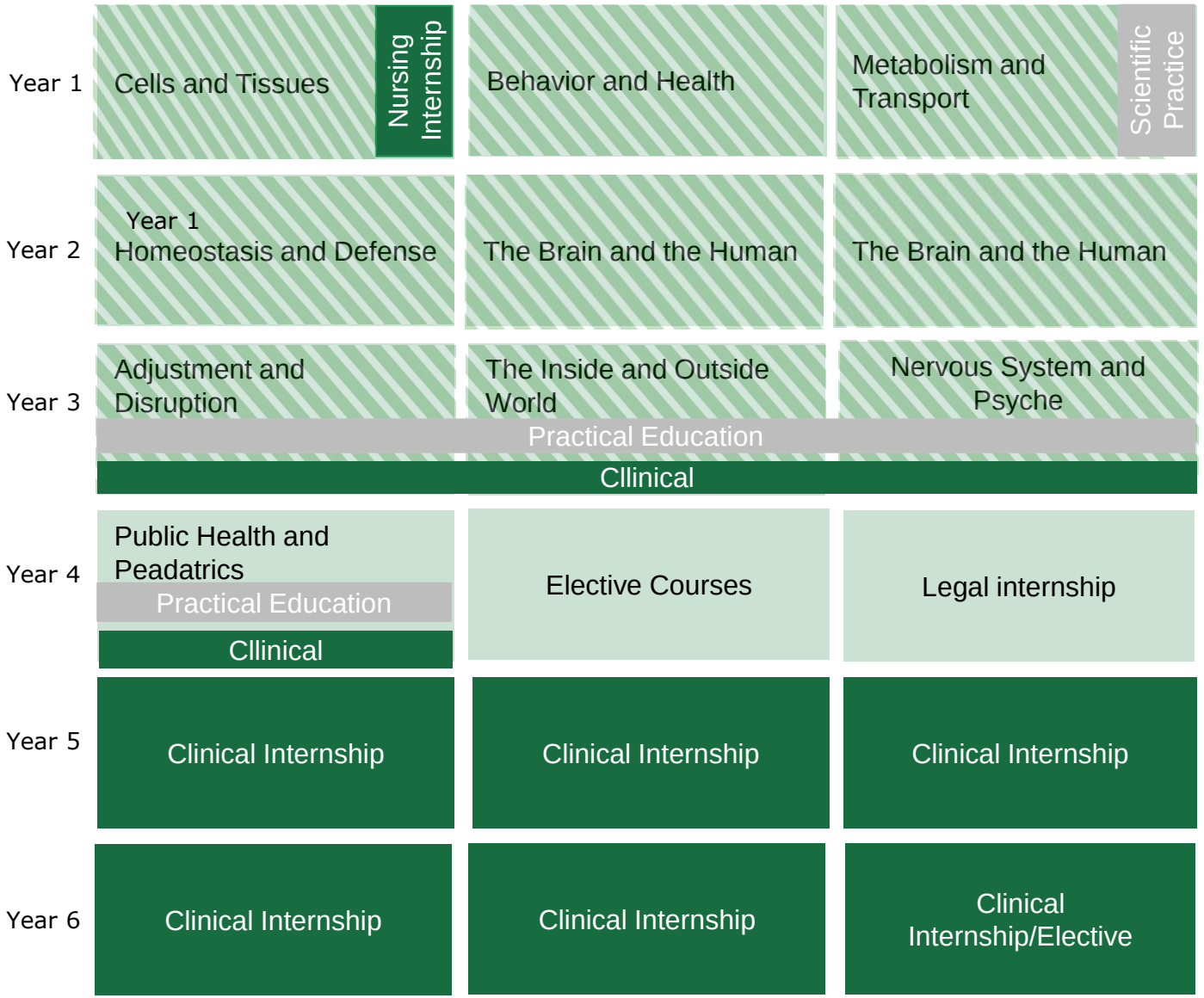
Unidades Curriculares	Área científica	Anuais Tempo de trabalho (h) Total	Contacto	Créditos	Obs.
Estágio Clínico Profissionalizante	CC / CM / P GO / SM / MPCS	1512	1260	54,0	
Trabalho Final do Mestrado Integrado em Medicina		168	Variável	6	(a)

(a) As alterações, que se prendem com a atribuição de créditos ECTS ao Trabalho Final de Mestrado Integrado em Medicina, aplicar-se-ão aos alunos que iniciarem o seu ciclo clínico no ano letivo 2018/19.

2nd cycle

Integrated Master in Medicine

Curriculum: University of Groningen, 2000-01



German Licensing Regulations

Nichtamtliches Inhaltsverzeichnis

Approbationsordnung für Ärzte
§ 1 Ziele und Gliederung der ärztlichen Ausbildung

(1) Ziel der ärztlichen Ausbildung ist der wissenschaftlich und praktisch in der Medizin ausgebildete Arzt, der zur eigenverantwortlichen und selbständigen ärztlichen Berufsausübung, zur Weiterbildung und zu ständiger Fortbildung befähigt ist. Die Ausbildung soll grundlegende Kenntnisse, Fähigkeiten und Fertigkeiten in allen Fächern vermitteln, die für eine umfassende Gesundheitsversorgung der Bevölkerung erforderlich sind. Die Ausbildung zum Arzt wird auf wissenschaftlicher Grundlage und praxis- und patientenbezogen durchgeführt. Sie soll

- das Grundlagenwissen über die Körperfunktionen und die geistig-seelischen Eigenschaften des Menschen,
- das Grundlagenwissen über die Krankheiten und den kranken Menschen,
- die für das ärztliche Handeln erforderlichen allgemeinen Kenntnisse, Fähigkeiten und Fertigkeiten in Diagnostik, Therapie, Gesundheitsförderung, Prävention und Rehabilitation,
- praktische Erfahrungen im Umgang mit Patienten, einschließlich der fächerübergreifenden Betrachtungsweise von Krankheiten und der Fähigkeit, die Behandlung zu koordinieren,
- die Fähigkeit zur Beachtung der gesundheitsökonomischen Auswirkungen ärztlichen Handelns,
- Grundkenntnisse der Einflüsse von Familie, Gesellschaft und Umwelt auf die Gesundheit, die Organisation des Gesundheitswesens und die Bewältigung von Krankheitsfolgen,
- die geistigen, historischen und ethischen Grundlagen ärztlichen Verhaltens

auf der Basis des aktuellen Forschungsstandes vermitteln. Die Ausbildung soll auch Gesichtspunkte ärztlicher Gesprächsführung sowie ärztlicher Qualitätssicherung beinhalten und die Bereitschaft zur Zusammenarbeit mit anderen Ärzten und mit Angehörigen anderer Berufe des Gesundheitswesens fördern. Das Erreichen dieser Ziele muss von der Universität regelmäßig und systematisch bewertet werden.
(2) Die ärztliche Ausbildung umfasst

1. ein Studium der Medizin von 5 500 Stunden und einer Dauer von sechs Jahren an einer Universität oder gleichgestellten Hochschule (Universität). Das letzte Jahr des Studiums umfasst, vorbehaltlich § 3 Absatz 3 Satz 2, eine zusammenhängende praktische Ausbildung (Praktisches Jahr) von 48 Wochen;
2. eine Ausbildung in erster Hilfe;
3. einen Krankenpflegedienst von drei Monaten;
4. eine Famulatur von vier Monaten und
5. die Ärztliche Prüfung, die in drei Abschnitten abzulegen ist.

Die Regelstudienzeit im Sinne des § 10 Abs. 2 des Hochschulrahmengesetzes beträgt einschließlich der Prüfungszeit für den Dritten Abschnitt der Ärztlichen Prüfung nach § 16 Abs. 1 Satz 2 sechs Jahre und drei Monate.
(3) Die Ärztliche Prüfung nach Absatz 2 Nr. 5 wird abgelegt:

1. der Erste Abschnitt der Ärztlichen Prüfung nach einem Studium der Medizin von zwei Jahren,
2. der Zweite Abschnitt der Ärztlichen Prüfung nach einem Studium der Medizin von drei Jahren nach Bestehen des Ersten Abschnitts der Ärztlichen Prüfung und
3. der Dritte Abschnitt der Ärztlichen Prüfung nach einem Studium der Medizin von einem Jahr nach Bestehen des Zweiten Abschnitts der Ärztlichen Prüfung.

Die in § 27 genannten Fächer und Querschnittsbereiche werden von der Universität zwischen dem Bestehen des Ersten Abschnitts der Ärztlichen Prüfung und dem Zweiten Abschnitt der Ärztlichen Prüfung geprüft.

http://www.gesetze-im-internet.de/_appro_2002/__1.html

What are some of the **Difficulties** in Evaluating Two-Cycle Medical Degrees?

QUESTIONS AND COMMENTS

Bologna Process Online Resources

- Official Bologna Process (European Higher Education Area) website: www.ehea.info/
- Euridyce: The European Higher Education Area in 2018 – Bologna Process Implementation Report: eacea.ec.europa.eu/national-policies/eurydice/content/european-higher-education-area-2018-bologna-process-implementation-report_en
- World Education News and Reviews: www.wes.org/ewenr/bolognaprocess.htm
- WENR newsletter article:www.ehttp://www.wes.org/ewenr/bolognaprocess.htmua.be/bologna-universities-reform/
- European Association for Quality Assurance in Higher Education: www.enqa.eu/
- European Quality Assurance Register for Higher Education: www.eqar.eu/
- German Academic Exchange Service: www.daad.de/deutschland/index.en.html
- CGS Survey: www.cgsnet.org/portals/0/pdf/R_intlenrl06_III.pdf

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