

Double Degree Master Biological Chemistry

Curriculum 2019

5 Semesters 150 ECTS

Cross Border Inter-University Joint Study Program

Johannes Kepler University Linz (JKU) & South Bohemian University Budweis (SBU)

4 Variants of the Curriculum

depending on previous Bachelor degree

Variant **B**: Bachelor in “**B**iological Chemistry” or equivalent

JKU and SBU terms may be interchanged (i.e. either JKU or SBU first)

1st term at SBU must be a winter term

Variant **T**: Bachelor in “**T**echnische Chemie” or CCT or equivalent

1st term at SBU must be a summer term

Variant **C**: Bachelor in “**C**hemie” (Univ. Vienna, Graz, Innsbruck) or equivalent

1st term at SBU must be a summer term

Variant **M**: Bachelor in “**M**olecular Biosciences” (JKU + Univ. Salzburg) or equivalent

1st term at JKU must be a winter term

Variant B: Bachelor in “Biological Chemistry”

Master’s Thesis including Master’s Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (16 ECTS)

Biological Electives (25 ECTS)

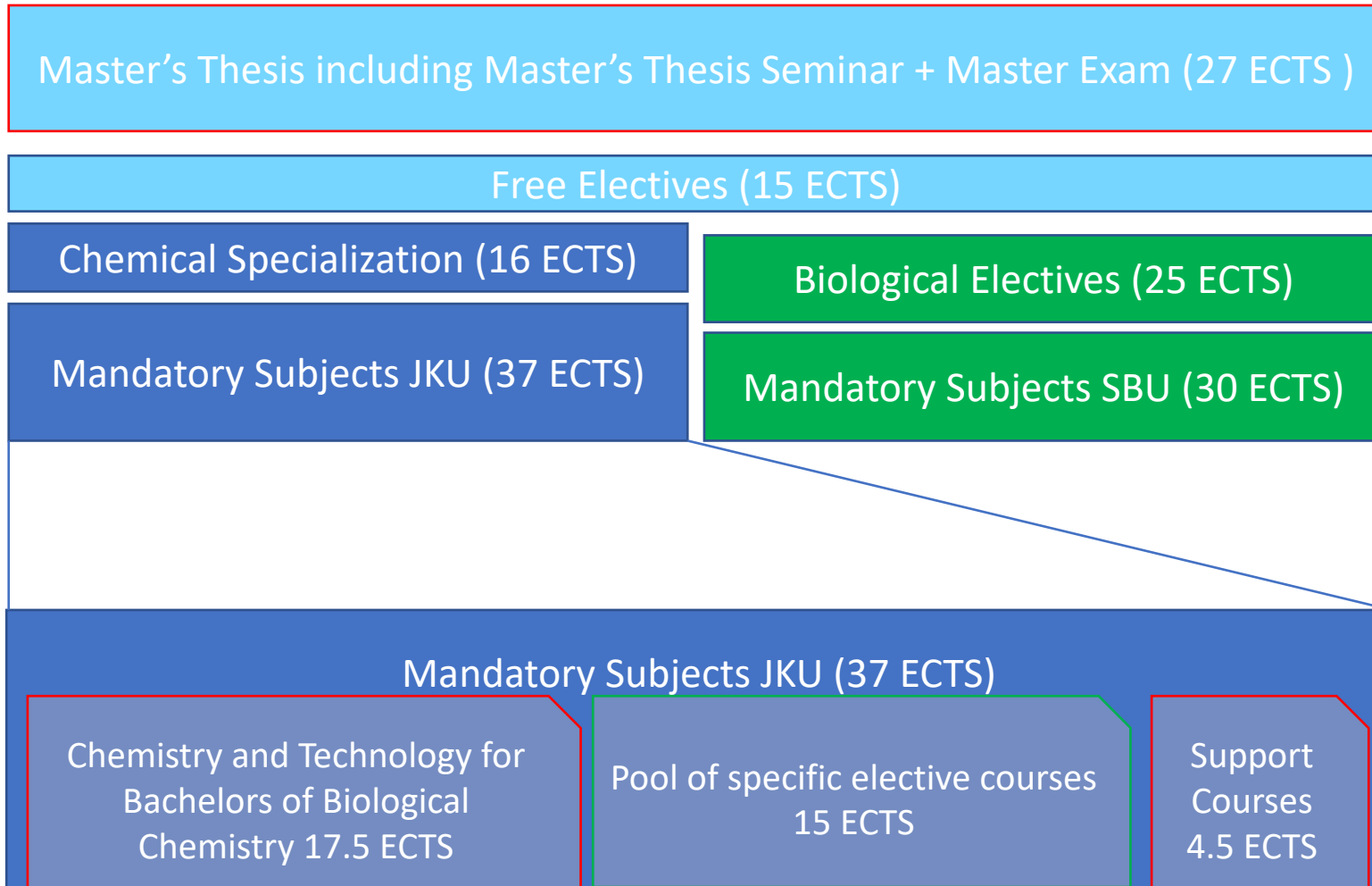
Mandatory Subjects JKU (37 ECTS)

Mandatory Subjects SBU (30 ECTS)

Annex 1a: Global map of study subjects - Joint Master's Program "Biological Chemistry" for graduates of the Bachelor's program "Biological Chemistry" (variant B) (2019)

1 st Semester (WS)		2 nd Semester (SS)		3 rd Semester (WS)		4 th Semester (SS)		5 th Semester (WS)	
JKU Linz		JKU Linz		USB Budweis		USB Budweis		JKU Linz/USB Budweis	
Subject/Course	ECTS	Subject/Course	ECTS	Subject	ECTS	Subject	ECTS	Subject/Course	ECTS
Chemistry and Technology for Bachelors of Biological Chemists Biocatalysis Biochemical Laboratory Techniques Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1	9	Chemistry and Technology for Bachelors Biological Chemists Preparative Chemistry Laboratory for Biological Chemists Advanced Biotechnology Advanced Instrumental Analysis	8.5	Biology and Biochemistry	15	Biology and Biochemistry	15	Master's Thesis Biological Chemistry	21
Support Courses	1.5	Support Courses	3						
Chemical Specialisation (2 Specialisations)	8	Chemical Specialisation (2 Specialisations)	8	Biological Electives (from 2 subjects)	12	Biological Electives (from 2 subjects)	13		
Pool of specific elective courses	8	Pool of specific elective courses	7					Master's Thesis Seminar / Master's Examination	6
Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3
29.5		29.5		30		31		30	

Variant B: Bachelor in “Biological Chemistry”



Variant B: Bachelor in “Biological Chemistry”

Master’s Thesis including Master’s Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (16 ECTS)

Biological Electives (25 ECTS)

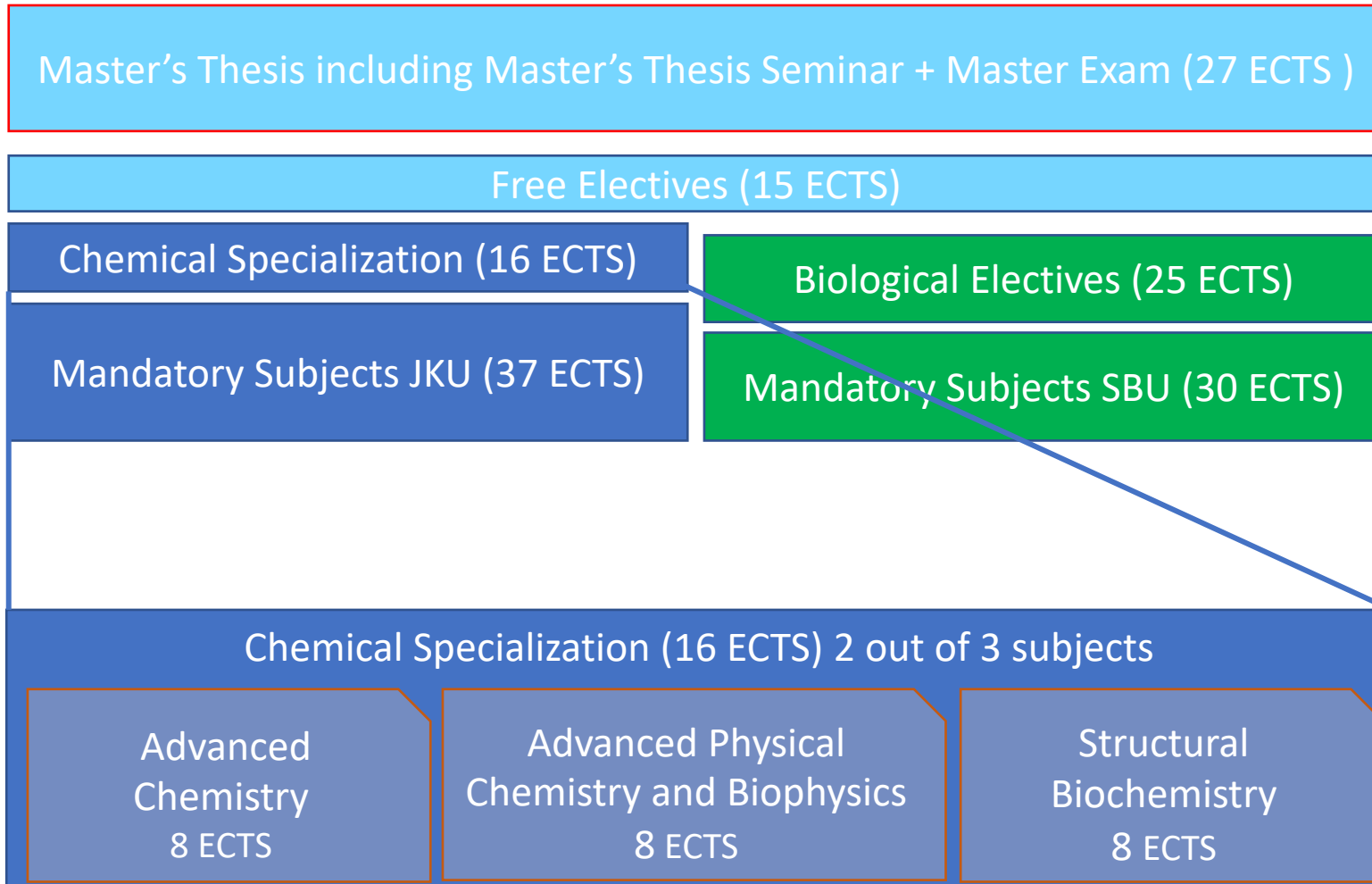
Mandatory Subjects JKU (37 ECTS)

Mandatory Subjects SBU (30 ECTS)

Mandatory Subjects SBU

Biology and Biochemistry 30 ECTS

Variant B: Bachelor in “Biological Chemistry”



Variant B: Bachelor in “Biological Chemistry”

Master’s Thesis including Master’s Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (16 ECTS)

Biological Electives (25 ECTS)

Mandatory Subjects JKU (37 ECTS)

Mandatory Subjects SBU (30 ECTS)

Biological Electives (25 ECTS) >10 ECTS from 2 out of 3 subjects

Advanced Biology
and Biochemistry
>10 ECTS

Molecular and
Developmental Biology
>10 ECTS

Structural Biology
Techniques Module
>10 ECTS

Variant T: Bachelor in “Technische Chemie”, CCT

Master's Thesis including Master's Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (8 ECTS)

Biological Electives (25 ECTS)

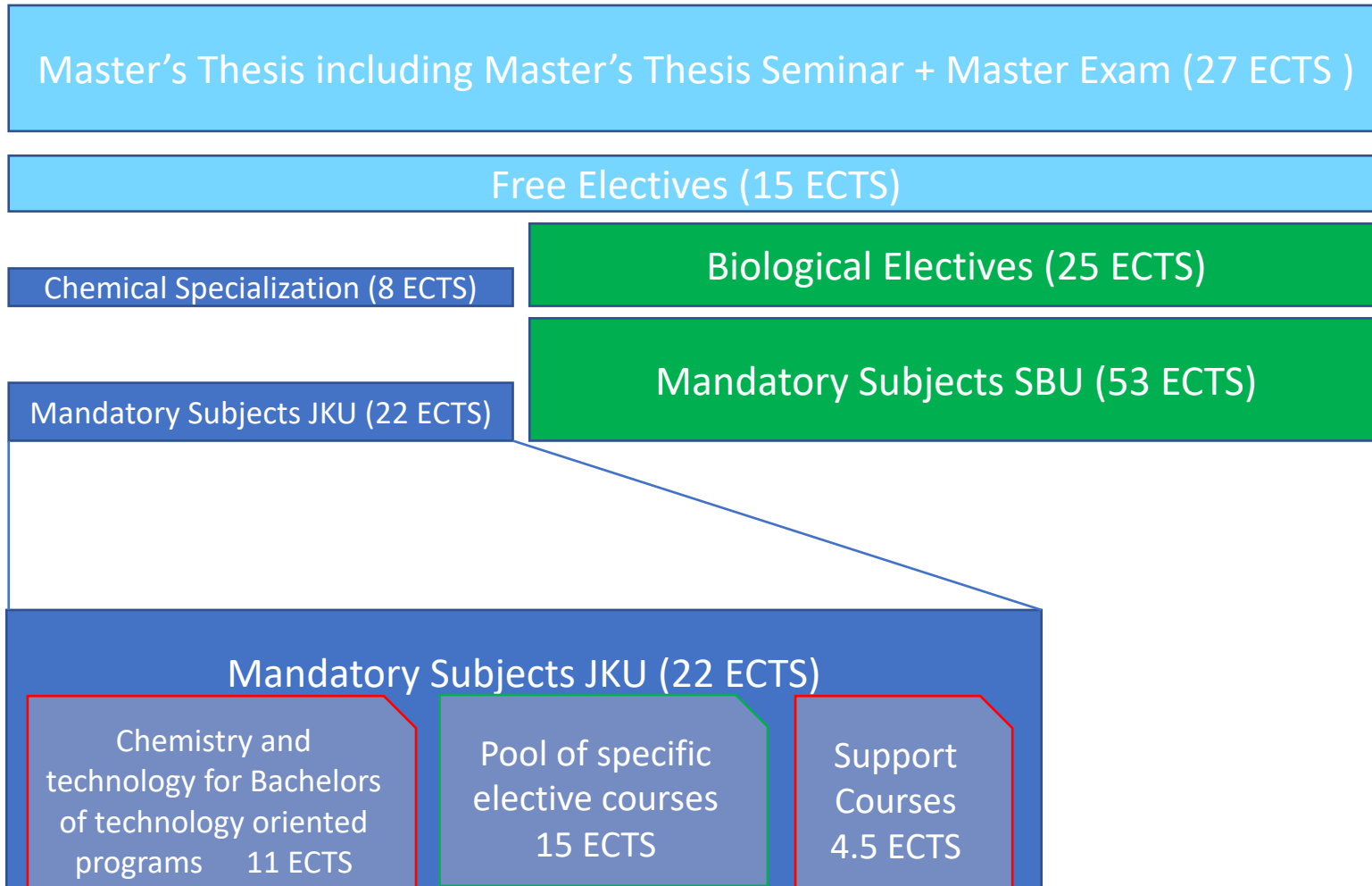
Mandatory Subjects JKU (22 ECTS)

Mandatory Subjects SBU (53 ECTS)

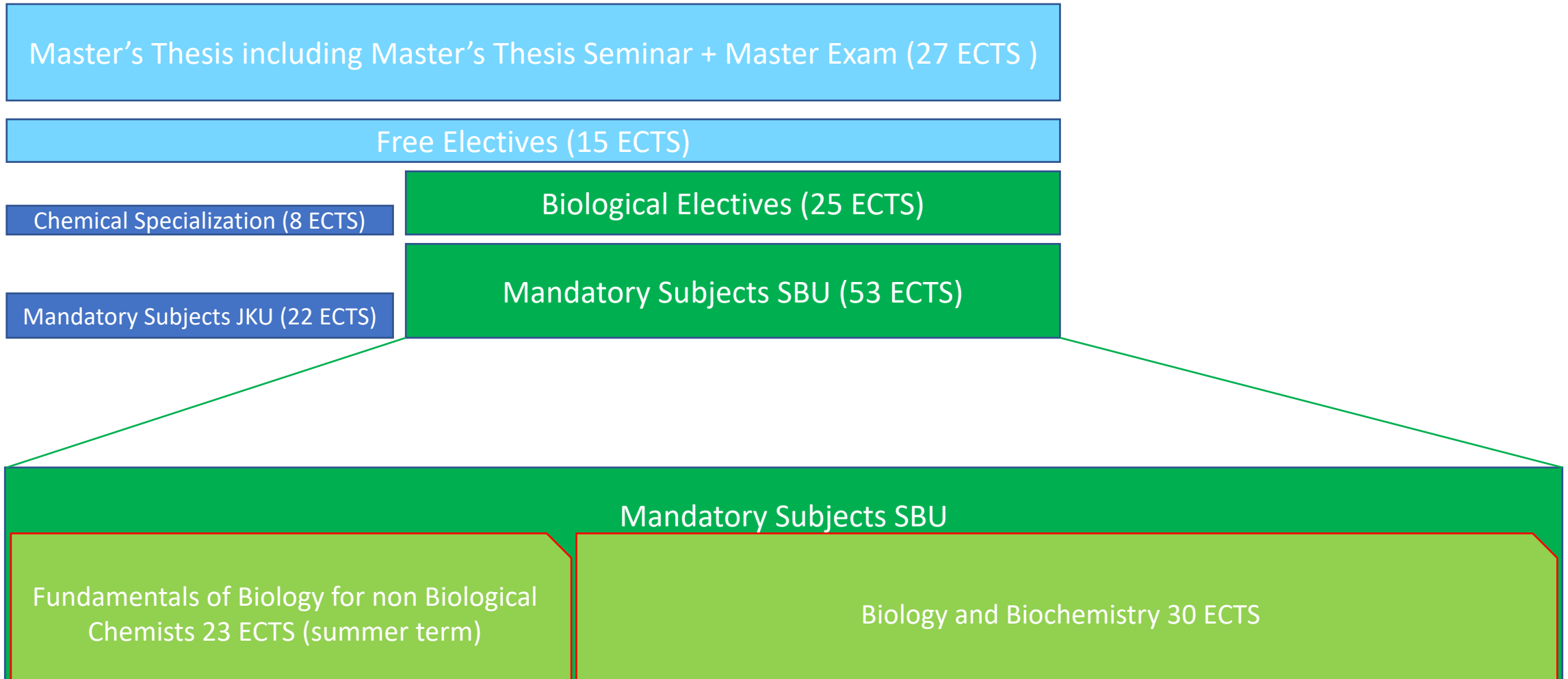
**Annex 1b: Global map of study subjects - Joint Master's Program "Biological Chemistry"
for variant T specified in § 2 para. 3 (2019)**

1 st Semester (WS)		2 nd Semester (SS)		3 rd Semester (WS)		4 th Semester (SS)		5 th Semester (WS)	
JKU Linz		USB Budweis		USB Budweis		JKU Linz/USB Budweis		JKU Linz/USB Budweis	
Subject/Course	ECTS	Subject/Course	ECTS	Subject	ECTS	Subject/Course	ECTS	Subject/Course	ECTS
Chemistry and Technology for Bachelors of technology oriented chemistry programs Biocatalysis Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1	7.5	Bridge subject: Fundamentals of Biology	23	Biology and Biochemistry	15	Chemistry and Technology for Bachelor's of technology oriented chemistry programs Advanced Instrumental Analysis Advanced Biotechnology	3.5	Master's Thesis Biological Chemistry	21
Chemical Specialisation (1 Specialisation)	8					Support Courses	3		
Support Courses	1.5	Biology and Biochemistry (USB)	8						
Pool of specific elective courses	6.5	Biology and Biochemistry	7	Biological Electives (from 2 subjects)	12	Biological Electives (USB) (from 2 subjects)	13		
Free Electives	6			Free Electives	3	Free Electives	3	Master's Thesis Seminar / Master's Examination	6
29.5		30		30		30.5		30	

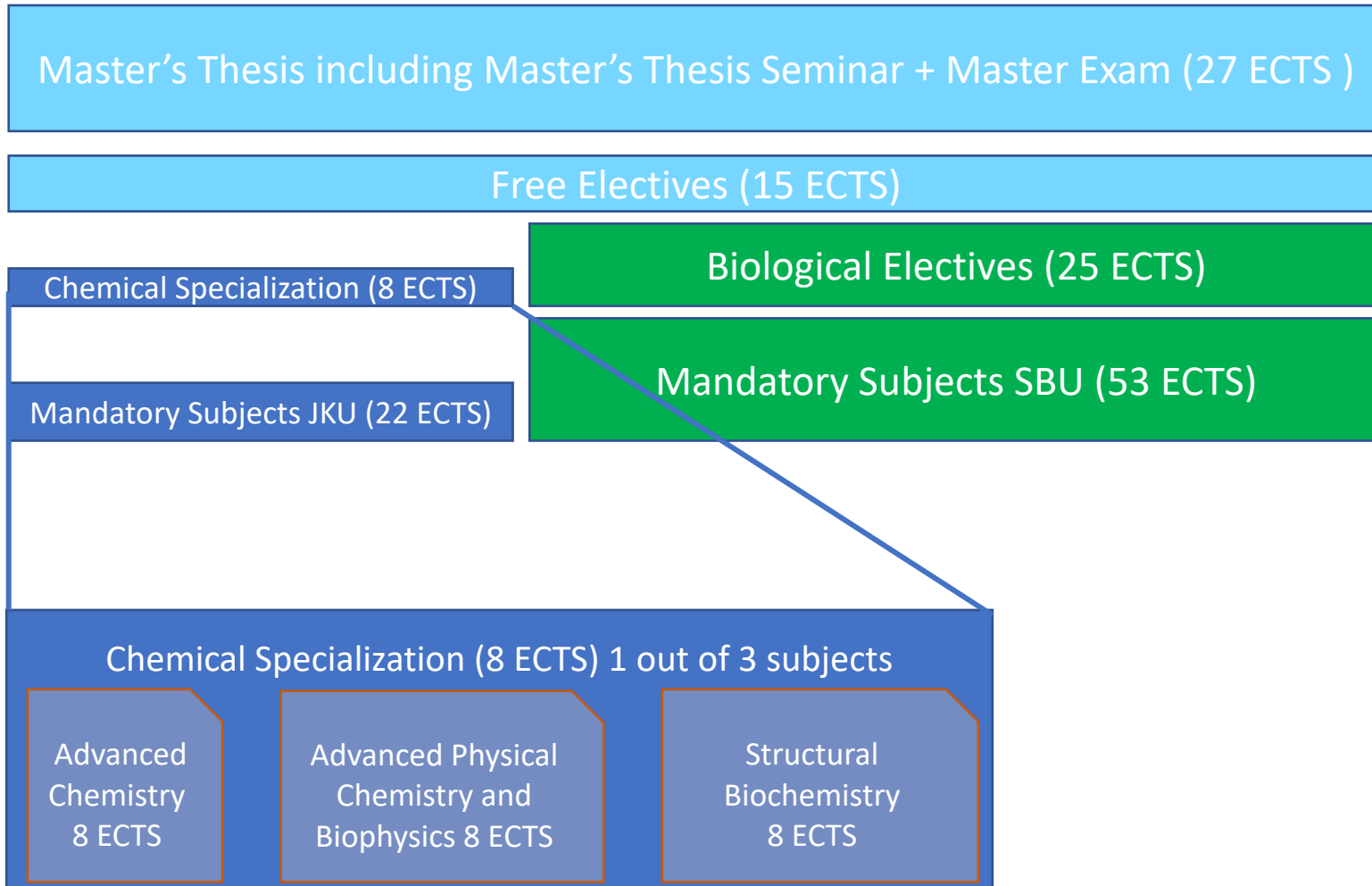
Variant T: Bachelor in “Technische Chemie”, CCT



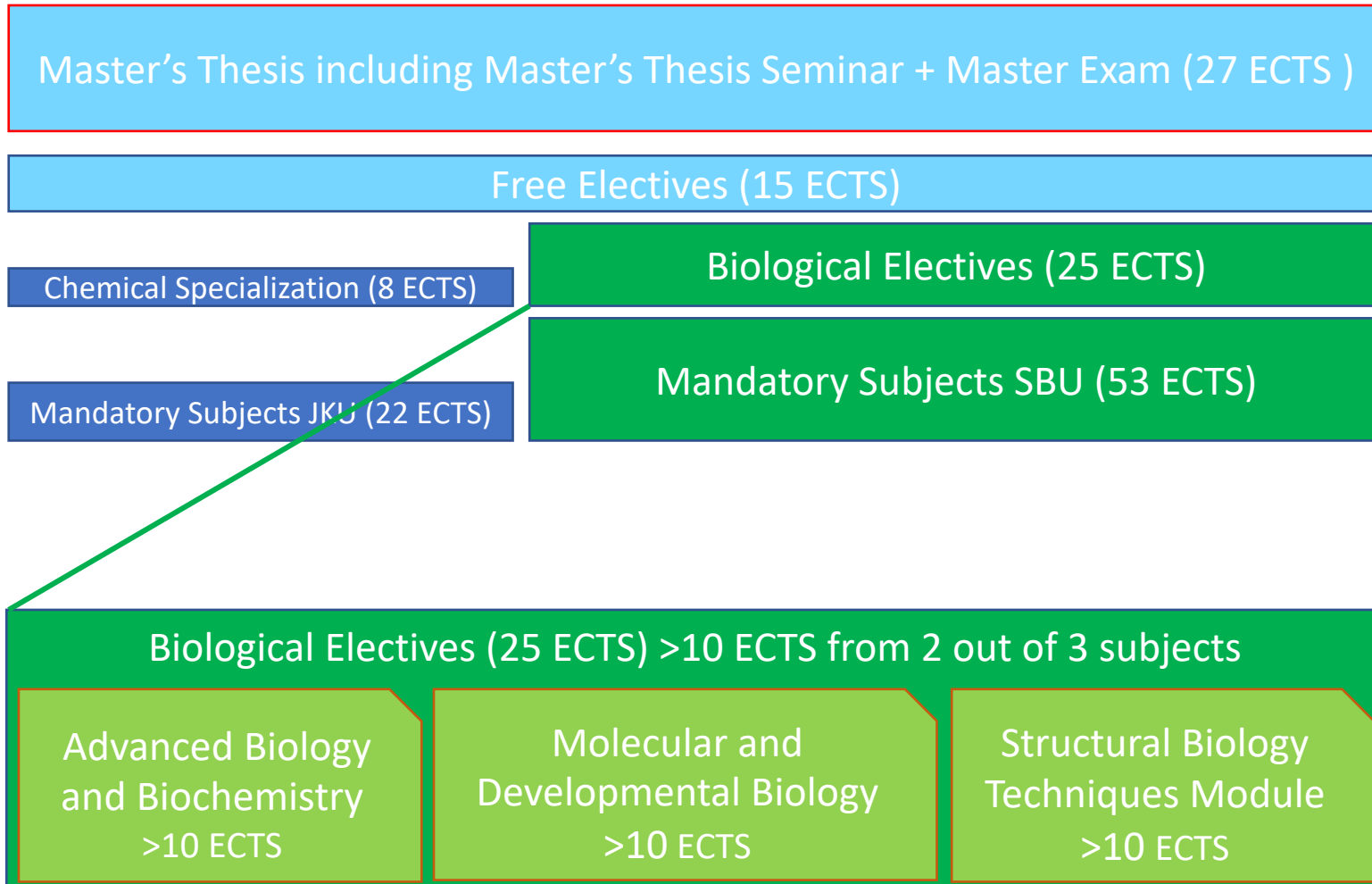
Variant T: Bachelor in “Technische Chemie”, CCT



Variant T: Bachelor in “Technische Chemie”, CCT



Variant T: Bachelor in “Technische Chemie”, CCT



Variant M: Bachelor in “Molecular Biosciences”

Master’s Thesis including Master’s Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (8 ECTS)

Mandatory Subjects JKU (45 ECTS)

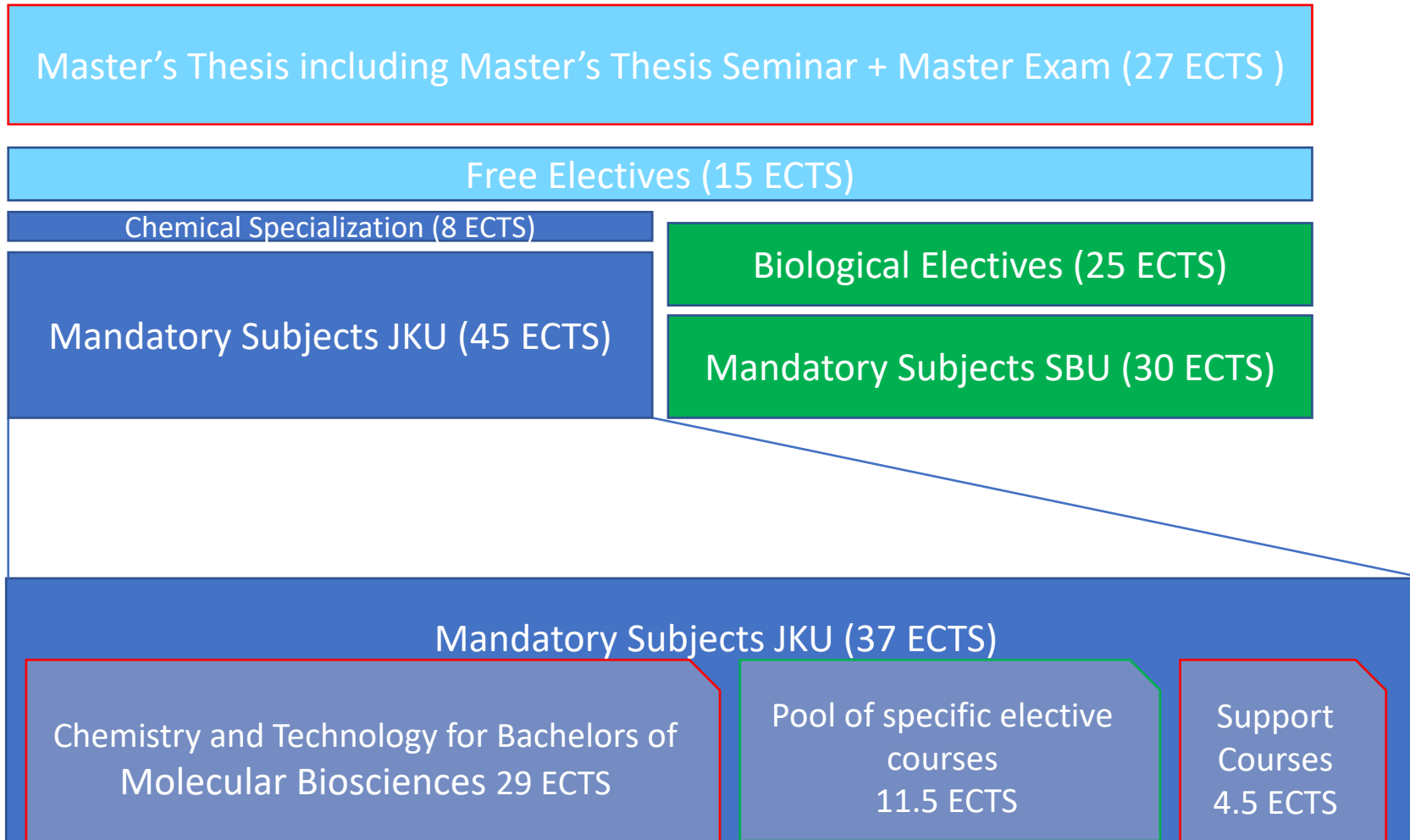
Biological Electives (25 ECTS)

Mandatory Subjects SBU (30 ECTS)

**Annex 1d: Global map of study subjects - Joint Master's Program "Biological Chemistry"
for variant M specified in § 2 para. 3 (2019)**

1 st Semester (WS)		2 nd Semester (SS)		3 rd Semester (WS)		4 th Semester (SS)		5 th Semester (WS)	
JKU Linz		JKU Linz		USB Budweis		USB Budweis		JKU Linz/USB Budweis	
Subject/Course	ECTS	Subject/Course	ECTS	Subject	ECTS	Subject	ECTS	Subject/Course	ECTS
Chemistry and Technology for Bachelors of Molecular Biosciences Biocatalysis Biochemical Laboratory Techniques Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1 NMR Spectroscopy In-depth fundamentals of Preparative Organic Chemistry for Biological Chemistry Organic chemistry laboratory bridge course	16	Chemistry and Technology for Bachelors of Molecular Biosciences Organic Chemistry 1 for Biological Chemistry Preparative Chemistry Laboratory for Biological Chemists Advanced Biotechnology Advanced Instrumental Analysis	13	Biology and Biochemistry	15	Biology and Biochemistry	15	Master's Thesis Biological Chemistry	21
Support Courses	1.5	Support Courses	3						
Chemical Specialisation (1 Specialisation)	4	Chemical Specialisation (1 Specialisation)	4						
Pool of specific elective courses	5.5	Pool of specific elective courses	6	Master's Thesis Seminar / Master's Examination	6				
Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3
30		29		30		31		30	

Variant M: Bachelor in “Molecular Biosciences”



Variant M: Bachelor in “Molecular Biosciences”

Master’s Thesis including Master’s Thesis Seminar + Master Exam (27 ECTS)

Free Electives (15 ECTS)

Chemical Specialization (8 ECTS)

Mandatory Subjects JKU (45 ECTS)

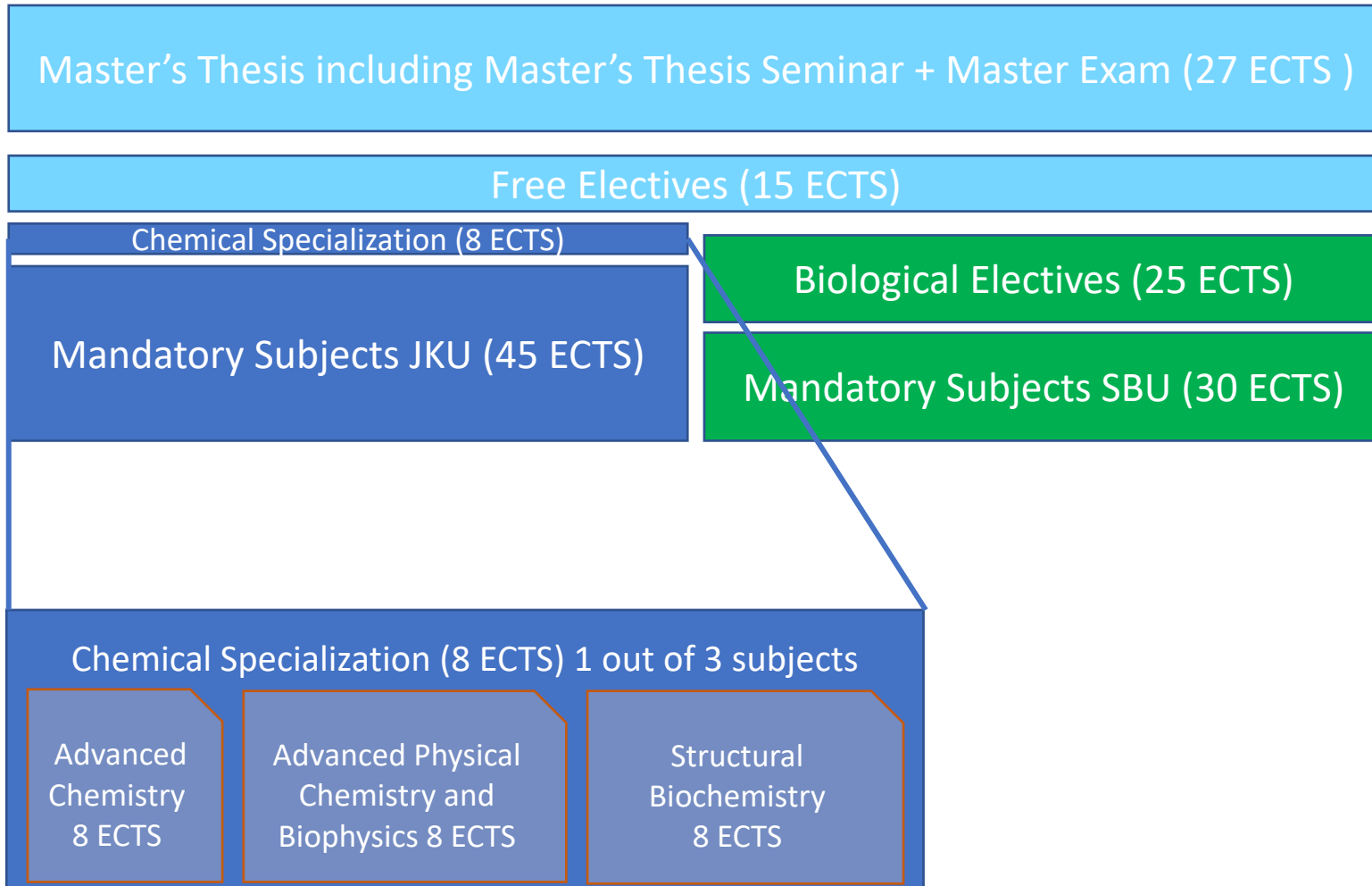
Biological Electives (25 ECTS)

Mandatory Subjects SBU (30 ECTS)

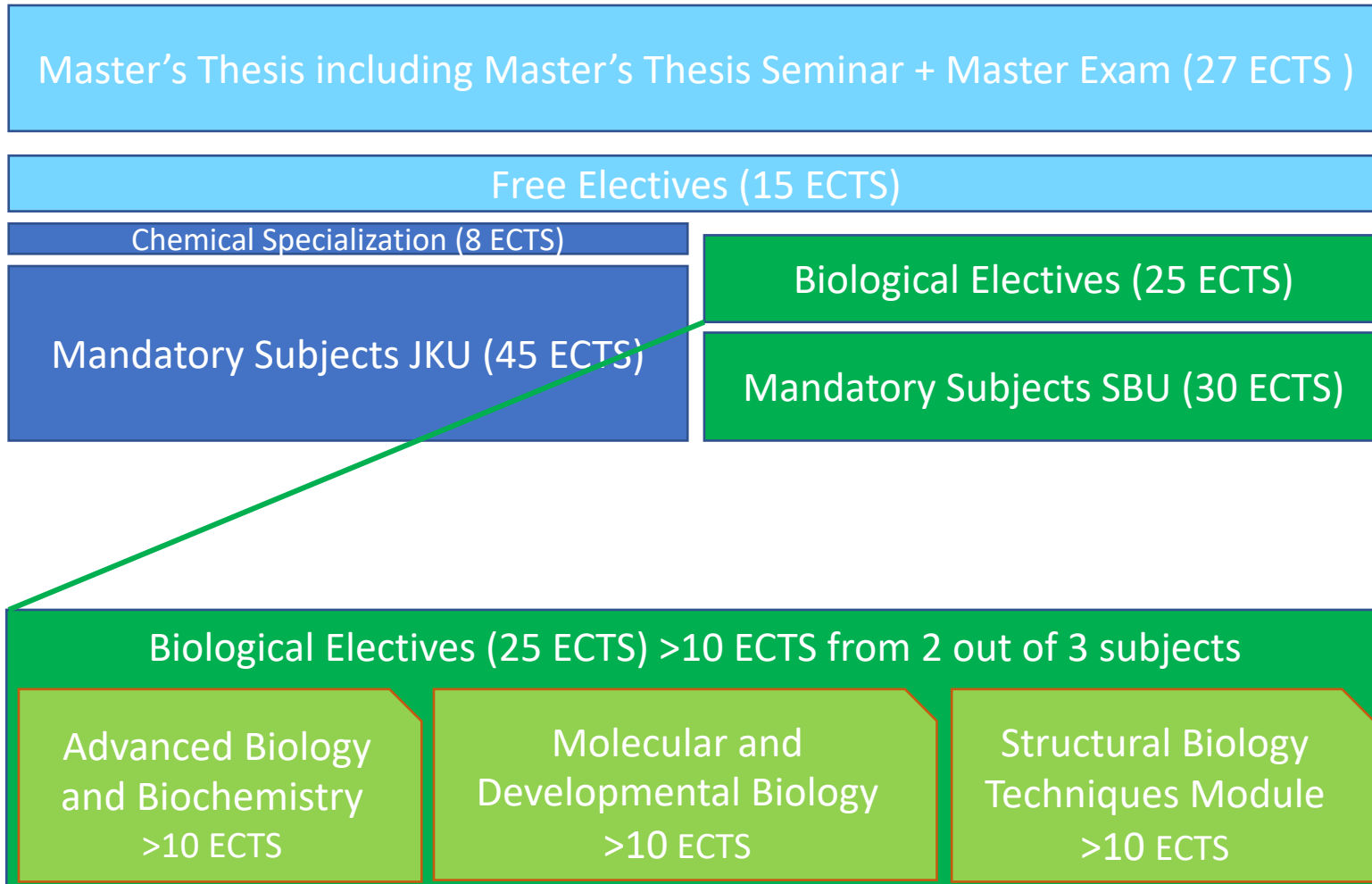
Mandatory Subjects SBU

Biology and Biochemistry 30 ECTS

Variant M: Bachelor in “Molecular Biosciences”



Variant M: Bachelor in “Molecular Biosciences”



Pool of specific elective courses

- VL Current Topics in Biological Chemistry (1.5 ECTS)
- VL Bioanalytics II (3 ECTS, Master Biophysik)
- VL Bioanalytics I (3 ECTS, Master Biophysik)
- PR Modellierung von biologischen Makromolekülen II (3 ECTS, Master Biophysik)
- PR Modellierung von biologischen Makromolekülen I (3 ECTS, Master Biophysik)
- VL High Resolution Microscopy II - Scanning Probe Techniques (1,5 ECTS, Master Polymer Technologies and Science)
- VL High Resolution Microscopy I - Optical and Electron Microscopy Techniques (1,5 ECTS, Master Polymer Technologies and Science)
- VL Photovoltaics (3 ECTS, Master Polymer Technologies and Science)
- VL Physical Chemistry of Surfaces and Interfaces (1,5 ECTS, Master Polymer Technologies and Science)
- VL Bionics - biomimetic Materials and Polymers (1,5 ECTS, Master Polymer Chemistry)
- VL Physics and Chemistry of Organic Semiconductors (3 ECTS, Master Polymer Chemistry)
- SE Science and Technology of Organic Semiconductors (1,5 ECTS, Master Polymer Chemistry)
- VL Technical Biopolymers (1.5 ECTS, Master Polymer Chemistry)
- VL Chemometrics (3 ECTS, Master Chemistry and Chemical Technology)
- VL Inorganic Chemistry 3 (3 ECTS, Master Chemistry and Chemical Technology)
- VL Organic electronics (3 ECTS, Master Chemistry and Chemical Technology)
- VL Organic Semiconductors (Spectroscopy in organic semiconductors) (3 ECTS, Master Chemistry and Chemical Technology)
- VL Photochemistry 2 (1.5 ECTS, Master Chemistry and Chemical Technology)
- VL Physical and Theoretical Chemistry (3 ECTS, Master Chemistry and Chemical Technology)
- VL Structure and Properties of Biological Materials 2 (1.5 ECTS, Master Chemistry and Chemical Technology)

