

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2016-2019

ECTS pro Semester

Module	Coef unit	Module / Unit titel	Courses description	Teacher	Course hours BA ²	ECTS pro Semester						
						S1	S2	S3	S4	S5	S6	
AC1	180	Conservation 1			88	6						
AC1.1	0.3	The collection and its environment 1	Physics of buildings Environmental basics: Relative Humidity, Temperature. Measurements and tools	TJA	12							
			Basics in conservation-restauration 1. Principles of preventive conservation. Interaction of objects with their environment.	NDU	16							
AC1.2	0.4	Visual documentation 1	Computer tools	TJA	8							
			Drawing	PMY	8							
			Photography in studio and on site	PMY	16							
AC1.3	0.3	Introduction to materials used for artifacts 1	Ceramic, glass 1 - material, technology and degradation processes	KVA	16							
			Mosaics 1 - material and degradation processes	Chantriaux	4							
			Polymers and resins 1 - material and degradation processes	ADO	8							
AH1	180	Humanities 1				6						
AH1.1	0.3	History of art and culture 1	Antiquity	Celio	5							
			From the "big bang" to our days, geographical survey, Paleolithic, neolithic, protohistory	AGM	19							
AH1.2	0.4	Written documentation and methodology 1	Method of documentation, assessment of the conditions of conservation, establishment of a repository and choice of indicator	NDU	28							
AH1.3	0.3	Interdisciplinary studies 1	Ethnographic object and Society	AGM	8							
			Work of art and History : case studies	Celio	8							
			Technological objects and history 1	PYC	8							
AN1	180	Natural sciences 1				6						
AN1.1	0.4	Basics in Chemistry 1	Composition and binding in materials ; Stoichiometry Thermodynamic and kinetic of chemical reactions ; Chemical equilibrium	ADO	36							
AN1.2	0.3	Basics in Physics 1	Heat, Geometrical Optics. Revisions in Algebra and Geometry	FGO	24							
AN1.3	0.1	Introduction to properties of materials 1	Inorganic material	ADO	12							
AN1.4	0.2	Health and safety 1	Health and safety in conservation, Laboratory materials and laboratory instruments security, laboratory safety, Toxic agents, Documentation of laboratory work	Gerber	8							
			Introduction to Basic Life Support and First aid	Seghairia / Mayeur	12							
AW1	180	Conservation workshop 1				6						
AW1.1	0.3	Environmental basics	Monitoring and monitoring tools, data capture with Excel.	TJA	44							
AW1.2	0.4	Ceramic	Project management : examination, diagnostic, propositions, documentation Cleaning Adhesives and coating Labelling Visits : handworkers, workshops, museum collections, laboratories	KVA	64							
AW1.3	0.2	Moulds and copies		Hug	36							
AW1.4	0.1	Basic tools in CR		MRA	8							
AW2	180	Conservation workshop 2 - external				6						
AW2		Collections conservation assessment. Handling, transportation, storage, packing		TJA	4.5 weeks							
AC2	180	Conservation 2					6					
AC2.1	0.4	Cultural heritage : collection and building	Terms and language in conservation	RBE	8							
			Collections management system and documentation in CR	Brodard	14							
			Environmentatl basics: light and pollutants. Measurements and tools	TJA	3							

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2016-2019

ECTS pro Semester

Module	Coef unit	Module / Unit titel	Courses description	Teacher	Course hours BA ²	ECTS pro Semester					
						S1	S2	S3	S4	S5	S6
AC2.2	0.3	Visual documentation 2	Computer : image processing	PMY	8						
			Drawing	PMY	8						
AC2.3	0.3	Introduction to materials used for artifacts 2	Vegetal, animal and composite materials - materials, technology and degradation processes	ANG	20						
AH2	180	Humanities 2					6				
AH2.1	0.3	History of art and culture 2	Antiquity	Celio	6						
			Early Middle Ages, Late Middle Ages	Celio	18						
AH2.2	0.4	History, ethics and theory of conservation	Method of documentation, assessment of the conditions of conservation, establishment of a repository and choice of indicator	NDU	28						
AH2.3	0.3	Interdisciplinary studies 2	Ethnographic object and Society	AGM	8						
			Technological objects and history 2	PYC	8						
			Art History	Celio	8						
AN2	180	Natural sciences 2					6				
AN2.1	0.5	Basics in Chemistry 2	Acids and bases; redox reactions, oxydation and reduction, electrochemistry.	ADO	36						
AN2.2	0.3	Basics in Physics 2	Introduction to electromagnetism	FGO	24						
AN2.3	0.2	Introduction to properties of materials 2	Organic materials	ADO	12						
AW3	180	Conservation workshop 3					6				
AW3.1	0.6	Climate studies. Collections conservation assessment. Long term storage materials. Handling and transportation.		TJA	96						
AW3.2	0.3	Material working, mounting, boxes, packing, working with synthetic polymers	Packing 1 : storage	Boulangé	48						
AW3.3	0.1	Materials identification tests	Oddy test and material identification tests.	ADO	16						
AW4	180	Conservation workshop 4 - external					6				
AW4		Collections conservation assessment		TJA	4.5 weeks						
BC1	180	Conservation 3			87			6			
BC1.1	0.6	Managing the collection and its environment 1	Compatibility of storage and exhibition materials	ADO	12						
			Origin and sensitiveness (interactions)	NDU	8						
			Photography	PMY	16						
			Basics in conservation-restauration 2	RBE	12						
BC1.2	0.2	Technology of artifacts 1	Composite mecanisms - technology	TSC	4						
			Metal and alloys 1 - materials and technology	VBO	10						
			Metal and alloys 2 - structure and degradation processes	VBO	8						
BC1.3	0.2	Introduction to degradation processes 1	Architecture, stone, mortar, wall paintings 2 - Materials, technology and degradation processes	Guyot	11						
			Polymers (artificial and synthetic materials) - Materials and degradation processes	Ramel	6						
BH1	180	Humanities 3			62			6			
BH1.1	0.4	History of art and culture 3	Renaissance, 17 th to 18 th Century	HDE	24						
BH1.2	0.2	Written documentation and methodology 2	Terms and language of conservation (8h). Aims, documentation forms, permanence of information (6h).	GRA	14						
BH1.3	0.4	Interdisciplinary studies 3	Heritage objects : the Ethnologist point of view	AGM	8						
			Work of art and heritage	Celio	8						
			Scientific and technological heritage	Boillat (PYC)	8						
BN1	180	Natural sciences 3			67			6			

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2016-2019

ECTS pro Semester

Module	Coef unit	Module / Unit titel	Courses description	Teacher	Course hours BA ²	ECTS pro Semester					
						S1	S2	S3	S4	S5	S6
BN1.1	0.4	Chemistry for conservation 1	Organic chemistry; Organic Nomenclature (IUPAC) Materials with particular structure ; Polyatomic ions in gypsum, chalk and substance containing ammonium ions Chemical complexes ; Atomic and molecular crystals Glass and glasses' corrosion ; Silicate structures and chemistry ; Water glass, silicic acid and silicic acid esters ; Silicones	ADO	24						
			Laboratory techniques: weighting and laboratory balances Pipettes and their use Solutions and dilutions	ADO	4						
BN1.2	0.3	Basics in Biology 1	The living : plant and animal cells, protozootes, microorganisms, minerals Biological materials : chemistry and technical aspects of these substances Biological substances used in arts and crafts and in conservation-restoration	AME	24						
BN1.3	0.2	Introduction to instrumental analysis	Photo, UV, NIR, X-Ray, Radiography, IR- Thermography Thermography Applications in art technology	Degrigny	12						
BN1.4	0.1	Health and safety 2	Introduction to Basic Life Support and First aid (Reminder)	Seghairia / Mayeur	3						
BW1	180	Conservation workshop 5						6			
BW1.1	0.4	Composites : dismantling 1		TSC	64						
BW1.2	0.2	Basics in woodworking		CBT	40						
BW1.3	0.3	Material working, wood working, metal working, mounting, boxes, packing, working with synthetic polymers		GRA	56						
BW1.4	0.1	Polymers: artificial and synthetic materials - identification and condition assessment		Ramel	16						
BW2	180	Conservation workshop 6 - external						6			
BW2		Climate control, storage and display conditions, packing and transportation. Survey, assessment and management. Evaluation of storage and display conditions.		VBO	4.5 weeks						
BC2	180	Conservation 4						6			
BC2.1	0.2	Visual documentation 3	Computer : data processing, computer graphics and pictures	PMY	12						
BC2.2	0.6	Technology of artifacts 2	Sculpture and painting - Materials, technology and degradation processes	ANG	16						
			Paper, Photography - materials, technology and degradation processes	Dobruskin	8						
			Textiles 1 - materials and degradation processes	Vogt	8						
			Textiles 2 - technology	Schorta	4						
			Pigments and dyes	Degrigny	3						
BC2.3	0.2	Introduction to degradation processes 2	Collection assesment : Storage plans and management, calcul of space and volume	TJA	12						
BH2	180	Humanities 4						6			
BH2.1	0.4	History of art and culture 4	17th to 18th Century, 19th Century,	HDE	14						
			20th and 21st Centuries	L.Bodenmann	10						
BH2.2	0.3	Legal aspects, business and work management in conservation	Business and work management in conservation ; Organisation and legal forms of a company; Taxes, financing, administration, contracts, accounting	Ludwig	16						
			Legal aspects	Fischer	8						
BH2.3	0.3	Interdisciplinary studies 4	Ethnographic objects in museums	AGM	8						
			Work of art and museums	Celio	8						
			Scientific and technical objects in museums 1	Boillat (PYC)	8						

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2016-2019

ECTS pro Semester

Module	Coef unit	Module / Unit titel	Courses description	Teacher	Course hours BA ²	ECTS pro Semester					
						S1	S2	S3	S4	S5	S6
BN2	180	Natural sciences 4							6		
BN2.1	0.4	Chemistry for conservation 2	Atomic and molecular orbitals; Hybridization; Chemical constitution and conformation; Organic compounds and reactions; Study of several organic compounds (composition, properties and degradation): Terpens; Natural resins and glues; Adhesive principles; Drying oils; Proteins and proteic mediums; Cellulose and derivatives; Starch; Synthetic polymers.	ADO	36						
BN2.2	0.2	Basics in Biology 2	Interpretation of cultures, preparation and macroscopic identification of bacteria and fungi Microscopy and measurements of microorganisms The breathing of fermentations : cause of biodegradation, ecological balance, eradication Interpretation of the sulphur cycle bacteria, biodegradation of stone Preparation of antibiotic tests Interpretation of antibiotic tests	AME	12						
BN2.3	0.2	Introduction to microscopy	Introduction to microscopy for conservators	AME	12						
BN2.4	0.2	Basic concepts of scientific analysis	An elementary approach to analytical techniques that are used to study the variety of materials and phenomena in the conservation of art objects	Degrigny	12						
BW3	180	Conservation workshop 7			210				6		
BW3.1	0.4	Material working, wood working, metal working, mounting, boxes, packing, working with synthetic polymers		TSC	82						
BW3.2	0.3	Material working, wood working, metal working, mounting, boxes, packing, working with synthetic polymers	Packing 2 : transport	Boulangé	60						
BW3.3	0.1	Managing collections and their environment	Collection assesment. Storage plans and management. Showcases conception project	TJA	36						
BW3.4	0.2	Colour and retouching		PMY	32						
BW4	180	Conservation workshop 8 - external							6		
BW4		Climate control, storage and display conditions, packing and transportation. Survey, assessment and management. Evaluation of storage and display conditions.		VBO/TJA	4.5 weeks						
CC1	180	Conservation 5							6		
CC1.1	0.2	Advanced studies in technology, degradation and conservation of cultural heritage objects - metal and alloys	Archaeological and historic metals	VBO	14						
			Modern metal alloys	TSC	8						
CC1.2	0.1	Advanced studies in technology, degradation and conservation of cultural heritage objects - ceramic and glass	Ceramic, glass	KVA	16						
CC1.3	0.2	Advanced studies in technology, degradation and conservation of cultural heritage objects - organic materials	Paleoecology	AME	12						
			Organic materials	CBT (rempl ANG)	14						
CC1.4	0.1	Collections management systems and documentation in CR (advanced)	Collections management systems and documentation in CR (advanced)	Brodard	14						
CC1.5	0.1	Advanced course in physics	Introduction to Nuclear Physics : Structure of nucleus, nuclear fusion and fission, radioactivity	FGO	12						
CC1.6	0.3	Managing collections and their environment 2	Risk analysis	TJA	8						
				von Lerber	16						
				Sauvagnargues	16						

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2016-2019

Module	Coef unit	Module / Unit titel	Courses description	Teacher	Course hours BA ²	ECTS pro Semester						
						S1	S2	S3	S4	S5	S6	
CH1	180	Humanities 5									6	
CH1.1	0.4	Interdisciplinary studies 5	Archaeological artefacts	AGM	8							
			Scientific and technological objects in museums 2	JBO	8							
			Art History	Celio	8							
CH1.2	0.2	Archaeology	Archaeological artefacts	AGM	16							
CH1.3	0.4	Scientific revolution and experimental science		FGO, JBO	32							
CW1	180	Conservation workshop 9									6	
CW1.1	0.8	Glasses	Glasses	KVA	64							
CW1.2	0.2	Security and safety, risk assessment	Security and safety : management, control, equipment	TJA	14							
CW2	180	Conservation workshop 10									6	
CW2		Metal and alloys		VBO	92							
				TSC	36							
CW3	180	Conservation workshop 11									6	
CW3		Basics in cleaning of organic materials	Basics in cleaning of organic materials	Rouhi	112							
CC2	360	Bachelor thesis										12
CC2		Bachelor thesis		RBE, TJA, TSC, VBO	9 weeks							
CW4	180	Conservation workshop 12									6	
CW4		Approach of technical objects		TSC/CBT	120							
CW5	180	Conservation workshop 13									6	
CW5		Disaster response		NDU, Kissel, von Lerber, TJA, TSC...	128							
CW6	180	Bachelor thesis preparation									6	
CW6		Bachelor thesis preparation		RBE, TJA, TSC, VBO	128							

¹SWH = Student Workin Hours, coef. = ponderation of the unit

²1 course hour = 60 minutes