Plan études Bachelor

Study plan Bachelor

haute école neuchâtel berne jura — arc conservation restauration neuchâtel

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2022-2025

All courses are evaluated on a regular basis (written or oral examinations, written documentations, exercises and laboratories, presence).

conservation-restauration@he-arc.ch, +41 (0)32 930 19 19

Module	SWH[1] Coef unit	Module / Unit titel	Courses description	Teacher	Course hours[2]	ECTS pro Semester 180 — S1 24	S2 36	S3 24	S4 36	S5 33	S6 30
AC1	**180**	**Conservation 1**			**88**	**6**					
AC1.1	0.4	Managing collections and their environment 1	Physics of buildings Environmental basics: Relative Humidity, Temperature. Measurements and tools	TJA	12						
			Principles of preventive conservation. Interaction of objects with their environment.	NDU	16						
			Processus, documentation and terminology in CR	RBE	4						
AC1.2	0.4	Visual documentation 1	Computer tools	TJA	8						
			Photography - studio and on site, and computer graphics 1	Brodard	20						
			Introduction to microscopy for conservators	AME	12						
AC1.3	0.2	Introduction to materials used for artifacts 1	Ceramic, glass 1 - material, technology and degradation processes	CMA	16						
AH1	**180**	**Humanities 1**			**81**	**6**					
AH1.1	0.4	Objects and Societies 1	Antiquity	Freymond (HDE)	10						
			From the "big bang" to our days, geographical survey, Paleolitic, neolitic, protohistory	AGM	19						
AH1.2	0.3	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	Objects, heritage and museums 1	Ethnographic object and Society	AGM	12						
			Technological objects and history 1	JBO	12						
AN1	**180**	**Natural sciences 1**			**92**	**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	Applied physics to conservation 1	LBR	24						
AN1.3	0.1	Introduction to properties of materials 1	Inorganic material	ADO	12						
AN1.4	0.2	Health and safety 1	Occupational health and safety prevention: legal bases and statistics, chemical, physical, biological, mechanical and fall hazards, ergonomics, personal protective equipment, prevention methods	Gerber	8						
			Introduction to Basic Life Support and First aid	Seghaïria / Mayeur	12						
AN1.5	sans éval.		Basics in Maths : support course open to every CR students	LBR	4						
AW1	**180**	**Conservation workshop 1**			**166**	**6**					
AW1.1	0.3	Collections conservation survey and monitoring 1	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	CMA	64						
AW1.3	0.2	Moulds and copies		Hug	36						
AW1.4	0.1	Basic tools and documentation in CR	Basic tools in CR	ARC	8						
			Computer tools for collections management system and CR-documentation 1	Brodard	14						

Plan études Bachelor

Study plan Bachelor

haute école neuchâtel berne jura — arc conservation restauration neuchâtel

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2022-2025

All courses are evaluated on a regular basis (written or oral examinations, written documentations, exercises and laboratories, presence).

conservation-restauration@he-arc.ch, +41 (0)32 930 19 19

Module	SWH[1] Coef unit	Module / Unit titel	Courses description	Teacher	Course hours[2]	ECTS pro Semester 180 S1: 24	S2: 36	S3: 24	S4: 36	S5: 33	S6: 30
AC2	**180**	**Conservation 2**			**71**		**6**				
AC2.1	0.1	Managing collections and their environment 2	Processus, documentation and terminology in CR	ACU	4						
			Environmentatl basics: light and pollutants. Measurements and tools	TJA	3						
AC2.2	0.3	Visual documentation 2	Drawing : vector drawing and image processing 1	RJE	20						
AC2.3	0.6	Introduction to materials used for artifacts 2	Vegetal, animal and composite materials - materials, technology and degradation processes	Goron	20						
			Paleoecology. Introduction to geology.	AME	12						
			Polymers and resines 1 - material and degradation processes	ADO	8						
			Mosaics 1 - material and degradation processes	Chantriaux	4						
AH2	**180**	**Humanities 2**			**71**		**6**				
AH2.1	0.3	Objects and Societies 2	Early Middle Ages, Late Middle Ages	Freymond (HDE)	19						
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	Objects, heritage and museums 2	Ethnographic object and Society	AGM	12						
			Technological objects and history 2	JBO	12						
AN2	**180**	**Natural sciences 2**			**72**		**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	Applied physics to conservation 2	LBR	24						
AN2.3	0.2	Introduction to properties of materials 2	Organic materials	ADO	12						
AW3	**180**	**Conservation workshop 3**			**164**		**6**				
AW3.1	0.6	Collections conservation survey and monitoring 2	Climate studies. Collections conservation assessment. Long term storage materials. Handling and transportation.	TJA	96						
			Object labelling or marking. Inventory number	Kissel	4						
AW3.2	0.3	Packing 1 : Conservation storage materials and systems	Packing system, material working (synthetic	Boulangé	48						
AW3.3	0.1	Materials identification tests	Oddy test and material identification tests.	ADO	16						
AW2	**180**	**Conservation workshop 2 - external**					**6**				
AW2		Preventive conservation for heritage collections 1. Traineeship.	Collections conservation assessment. Handling, transportation, storage, packing	TJA	4.5 weeks						
AW4	**180**	**Conservation workshop 4 - external**					**6**				
AW4		Preventive conservation for heritage collections 2. Traineeship.	Collections conservation assessment. Handling, transportation, storage, packing	TJA	4.5 weeks						

Plan études Bachelor

Study plan Bachelor

haute école neuchâtel berne jura — arc conservation restauration neuchâtel

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2022-2025

All courses are evaluated on a regular basis (written or oral examinations, written documentations, exercises and laboratories, presence).

conservation-restauration@he-arc.ch, +41 (0)32 930 19 19

Module	SWH[1] Coef unit	Module / Unit titel	Courses description	Teacher	Course hours[2]	ECTS pro Semester 180					
						24	36	24	36	33	30
						S1	S2	S3	S4	S5	S6
BC1	**180**	**Conservation 3**			**86**			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 - studio and on site, and computer graphics 2	VAB	16						
			Cultural values, authenticity and conservation principles	RBE	12						
BC1.2	0.2	Technology of artifacts 1	Identification of traces of manufacturing and use	TSC	4						
			Metal and alloys 1 - materials and technology	VBO	8						
			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	12						
			Polymers (artificial and synthetic materials) - Materials and degradation processes	Rouzet	6						
BH1	**180**	**Humanities 3**			**56**			6			
BH1.1	0.3	Objects and Societies 3	Renaissance, 17th	Laurenti (HDE)	18						
BH1.2	0.3	Written documentation and methodology 2	Terms and language of conservation (8h). Aims, documentation forms, permanence of information (6h).	GRA	14						
BH1.3	0.4	Objects, heritage and museums 3	Heritage objects : the Ethnologist point of view	AGM	12						
			Scientific and technological heritage in History	JBO	12						
BN1	**180**	**Natural sciences 3**			**68**			6			
BN1.1	0.4	Chemistry for conservation 1	Organic chemistry; Organic Nomenclature	ADO	24						
			Laboratory techniques: weighting and	ADO	4						
BN1.2	0.3	Basics in Biology 1	The living : plant and animal cells, protozootes,	AME	24						
BN1.3	0.2	Introduction to instrumental analysis	Photo, UV, NIR, X-Ray, Radiography, IR-	CDE	12						
BN1.4	0.1	Health and safety 2	Introduction to Basic Life Support and First aid (Reminder)	Gelin	4						
BW1	**180**	**Conservation workshop 5**			**190**			6			
BW1.1	0.3	Composites : dismantling 1	Dismantling and reassembling methods	TSC	64						
BW1.2	0.5	Basics in wood and metal working	Basics in woodworking	Grall Burst	40						
			Material working, wood working, metal working, mounting, boxes, packing, working with synthetic polymers	GRA	56						
BW1.3	0.1	Documentation	Collections management systems and documentation in CR (advanced)	VAB	14						
BW1.4	0.1	Polymers: artificial and synthetic materials - identification and condition assessment		Rouzet	16						

Plan études Bachelor

Study plan Bachelor

haute école neuchâtel berne jura — arc conservation restauration neuchâtel

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2022-2025

All courses are evaluated on a regular basis (written or oral examinations, written documentations, exercises and laboratories, presence).
conservation-restauration@he-arc.ch, +41 (0)32 930 19 19

Module	SWH[1] Coef unit	Module / Unit titel	Courses description	Teacher	Course hours[2]	ECTS pro Semester 180 S1 24	S2 36	S3 24	S4 36	S5 33	S6 30
BC2	**180**	**Conservation 4**			**67**				6		
BC2.1	0.2	Visual documentation 3	Photography - studio and on site, and computer graphics 3	VAB	12						
BC2.2	0.6	Technology of artifacts 2	Sculpture and painting - Materials, technology and degradation processes	ANG	20						
			Paper, Photography - materials, technology and degradation processes	Dobrusskin	8						
			Textiles 1 - materials and degradation processes	Vogt	8						
			Textiles 2 - technology	Schorta	4						
			Pigments and dyes	EJO	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**			**76**				6		
BH2.1	0.4	Objects and Societies 4	18th, 19th and 20th Century	HDE	18						
			20th and 21st Centuries	Bodenmann	10						
BH2.2	0.3	Legal aspects, business and work managment 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	Objects, heritage and museums 4	Ethnographic objects in museums	AGM	12						
			Scientific and technological Heritage in Museography	JBO	12						
BN2	**180**	**Natural sciences 4**			**80**				6		
BN2.1	0.6	Chemistry for conservation 2	Atomic and molecular orbitals; Hybridization;	ADO	36						
			Linseed oil polymerisation workshop & FTIR analysis	LBR	8						
BN2.2	0.3	Basics in Biology 2	Interpretation of cultures, preparation and	AME	12						
			Identification of micro-organisms	EJO	12						
BN2.3	0.1	Basic concepts of scientific analysis	An elementary approach to analytical	CDE	12						
BW3	**180**	**Conservation workshop 7**			**210**				6		
BW3.1	0.4	Metal and wood working applied to objects mounting.	Introduction to wood-turning. Coloring and painting. Conception of objects mounting and application.	TSC	82						
BW3.2	0.3	Packing 2 : Conservation systems for transport	Packing for storage and transport. Introduction to shock tests.	Boulangé	60						
BW3.3	0.2	Collections conservation survey and monitoring 3	Collection assesment. Storage plans and management. Showcases conception project	TJA	36						
BW3.4	0.1	Colour and retouching	Colour and retouching	ANG	32						
BW2	**180**	**Conservation workshop 6 - external**							6		
BW2		Preventive conservation for heritage collections 3. Traineeship.	Climate control, storage and display conditions, packing and transportation. Survey, assessment and management. Evaluation of storage and display conditions.	VBO	4.5 weeks						
BW4	**180**	**Conservation workshop 8 - external**							6		
BW4		Preventive conservation for heritage collections 4. Traineeship.	Climate control, storage and display conditions, packing and transportation. Survey, assessment and management. Evaluation of storage and display conditions.	VBO/TJA	4.5 weeks						

Plan études Bachelor

Study plan Bachelor

haute école neuchâtel berne jura — arc conservation restauration neuchâtel

Bachelor of Arts HES-SO in Conservation, 180 ECTS, 2022-2025

All courses are evaluated on a regular basis (written or oral examinations, written documentations, exercises and laboratories, presence).

conservation-restauration@he-arc.ch, +41 (0)32 930 19 19

Module	SWH[1] Coef unit	Module / Unit titel	Courses description	Teacher	Course hours[2]	ECTS pro Semester 180 S1 (24)	S2 (36)	S3 (24)	S4 (36)	S5 (33)	S6 (30)
CC1	**270**	**Conservation 5**			**104**					**9**	
CC1.1	0.2	Advanced studies in technology, degradation and conservation of cultural heritage objects - metal and allovs	Archaeological and historic metals	VBO	14						
			Modern metal alloys	TSC	8						
CC1.2	0.2	Advanced studies in technology, degradation and conservation of cultural heritage objects - ceramic and glass	Ceramic, glass	CMA	16						
CC1.3	0.1	Advanced studies in technology, degradation and conservation of cultural heritage objects - organic materials	Organic materials	Goron	14						
CC1.4	0.1	Advanced course in physics	Applied physics to conservation 3	LBR	12						
CC1.5	0.4	Managing collections and their environment 4	Risk analysis	TJA	8						
				von Lerber	16						
				Sauvagnargues	16						
CH1-AE	**90**	**Humanities 5-AE[3]**			**28**					**3**	
CH1.1-AE	0.4	Objects, heritage and museums 5	Ethnology and its methods	AGM	12						
CH1.2-AE	0.6	Archaeology	Archaeological artefacts	AGM	16						
CH1-STH	**90**	**Humanities 5-STH[3]**			**44**					**3**	
CH1.1-STH	0.3	Objects, heritage and museums 5	Scientific and technological objects in museums 2	JBO	12						
CH1.2-STH	0.7	Scientific revolution and experimental science	History of sciences and techniques	JBO	32						
CW1	**180**	**Conservation workshop 9**			**78**					**6**	
CW1.1	0.8	Glasses	Glasses	CMA	64						
CW1.2	0.2	Security and safety, risk assessment	Security and safety : management, control, equipment	TJA	14						
CW2	**180**	**Conservation workshop 10**			**128**					**6**	
CW2		Metal and alloys	Metal and alloys	VBO	92						
			Heat treatments of steel. Introduction to mechanical cleaning.	TSC	36						
CW4	**180**	**Conservation workshop 12**			**120**					**6**	
CW4		Approach of technical objects	Project management on technical objects conservation. Team working. Dismantling and cleaning treatments.	TSC/Binet	120						
CW3	**180**	**Conservation workshop 11**									**6**
CW3		Basics in cleaning of organic materials	Basics in cleaning of organic materials	CAL	112						
CW5	**180**	**Conservation workshop 13**									**6**
CW5		Disaster response		NDU, Kissel, von Lerber, Desplanches, etc.	128						
CW6	**180**	**Bachelor thesis preparation**									**6**
CW6		Bachelor thesis preparation		RBE, TJA, TSC, VBO	128						
CC2	**360**	**Bachelor thesis**									**12**
CC2		Bachelor thesis		RBE, TJA, TSC, VBO	9 weeks						

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

[2]1 course hour = 60 minutes

[3]Option à choix selon orientation