**PROGRAMME OF STUDY: MANAGEMENT OF ECCLESIASTICAL RELICS**

**Summary Course Material**

**1st Semester**

1. **Introduction to Old Testament**

 History of manuscript and print text. Ancient and modern translations. Review of the text

 History of the canon. Language and register of texts. Introduction to particular books: their

 context, author, readership, time and place of writing, specific theological characteristics and

 particularities of each text, their language and function as well their message for contemporary

 people.

1. **Introduction to New Testament**
2. Introduction
3. Text – Canon and Language
4. Ancient and Modern Translations
5. Manuscripts – Sources
6. Brief Analysis of Books
7. Apocrypha
8. Synoptic Problem
9. **Ancient GreeΚ Α΄**

Grammar, Syntax and teachings of Classical Greek Writers and Fathers of the Church.

1. **Byzantine History**

 Origins of the term Byzantium-Byzantine . The Roman state during the first three centuries A.D.

 The Edict of Milan in 313. The transfer of Roman capital to Constantinople. Constantine the Great

 and his direct successors. Emperor Julian, Theodosius the Great, Theodosius the Younger, Justinian,

 and Theodora. Justinian territory reoccupation. The army and the navy in all Roman periods until

 the fall of Constantinople. Iconoclast. Cyrillus and Methodius teachings. The Manzikert battle

 The four crusades. Latin occupation.The re-establishment of the empire by Ioannis Vatatzis.

 Attempts for unity until the fall of Constantinople.The Conquer of Constantinople.

 Progress of iconographic art, literature and art in Byzantium. Imperial and Patriarchal institutions.

 The imperial court, the patriarchal court. Relationship between church and state.

1. **HISTORY OF CHRISTIAN ART**

 Art and man. Religion and art. The circumstances and the setting under which the Christian art was born. The influences of the Greek-Roman world and the stance adopted by the Church Fathers concerning art. The fundamental characters and the symbolic language of the early Christian art. Sources. Primitive expressions and the creation of the primeval tradition of visual arts. Sculpture and miniature art. The shaping of dogmatics, the development of liturgical life and the honour of martyrs as a factor of the development of Christian art. The donations. The continuity of the union of the “sanctity” and the “aesthetics” in Byzantium. Periodization. Diagram of the Medieval, Byzantine and post-Byzantine art. The contemporary Christian art.

1. **ENGLISH**
2. English for Specific Academic Purposes. Emphasis on all four skills:
3. Listening to lectures
4. Speaking in tutorials and seminars
5. Reading for research
6. Writing assignments
7. **ECCLESIASTICAL ARCHITECTURE OF BYZANTINE AND POST-BYZANTINE ERA**
8. Its beginnings
9. Christian buildings before Constantine the Great
10. Ecclesiastical architecture in Byzantium
11. Post-Byzantium Ecclesiastical architecture
12. The character of Contemporary architecture
13. The contemporary Christian church-building
14. The problems of modernization
15. The problem of Hagiography in the Orthodox temples of modern architecture (topics-colour-register-movements)
16. The good order of the internal scenery of modern temples
17. **WESTERN EUROPEAN CHRISTIAN ART**

The course examines Western European Christian art from late antiquity to modernism.

Taught areas:

i. Christian art and the transition from late antiquity to medieval era.

ii.Medieval Christian art and the authority of church.

iii. Early Medieval Christian art, up to 1000 a.c.

-Merovigian art: Context, style and aesthetics.

-Carolingian art: Context, style and aesthetics.

-Ottonian art: Context, style and aesthetics.

iv. Late Medieval Christian art up to 15th century.

-Visual narrative in Romanesque art. Research topics: Context, style and aesthetics within all fields of Romanesque artistic endeavour.

-Visual narrative in Gothic art. Research topics: Context, style and aesthetics, within all fields of Gothic artistic endeavour.

iv. Western European Christian art during early, high renaissance,  manierism and baroque.

v. Western European Christian art in Northern Europe.

vi. Western European Christian art in the eighteenth century and the early nineteenth century.

vii. Western European Christian art in modern art.

1. **INTRODUCTION TO THE SCIENCE OF MANAGEMENT - CONSERVATION OF RELICS**

The present course aims at acquainting students with the concept of civilization management, the abilities of a manager of a cultural organization as well as the laws that abide to the management of ecclesiastical museums.

The course focuses on the following units:

Introduction to civilization management, definition of concepts, the timeless concept of civilization, manager of cultural organizations, manager’s activities, duties and abilities, basic principles of administrating cultural organizations, contemporary developments and cultural manager, tackling managerial issues, ecclesiastical legacy and management, basic principles of funding cultural organizations and ecclesiastical museums, institutional bodies for the protection and salience of the cultural and ecclesiastical heritage, international organizations, European scheme of things, cultural politics, preservation principles of cultural and ecclesiastical heritage, case-studies.

**2nd SEMESTER**

1. **CHRISTIAN ARCHAEOLOGY**

The birth, nature and aims of Archaeology. Christian Archaeology as a science. Sources and teaching aids. Paleochristian period: burial monuments, organisation and use of the underground burial places. Home churches. The wooden-roof Basilica of the Mediterranean basin. Circumcenter and cruciform worship buildings. Proto-Byzantine period: the iconoclastic crisis. Transitional monuments. Meso-Byzantine and post-Byzantine period: The revival of Macedonians and the byzantine classicism. Typology of the cross inscribed in a square dome-shaped church, octagonal buildings. Post-Byzantine period: the Palaeologan revival, main monuments.

1. **SCIENCE AND TECHNOLOGY OF CONSTRUCTION MATERIALS (T+W)[[1]](#endnote-1)**
2. Historical and technological progress. Distinction between supporting and non-supporting materials –principles for the functionality and use of traditional materials – material and information – documentation methodology – hands-on practice (sampling, recording, analysis)
3. Stones. Origin, types, treatment and application technology. Technical characteristics. Documentation examples. Bricks and tiles. Types, production and application technology, technical characteristics. Documentation and analysis examples. Bonding slurry and mortars. Classification, distinction, construction and application technology. Technical characteristics. Examples of historical mortars’ study.
4. Metallic materials. Types, mining, processing and application technology. Technical characteristics. Examples of metal analysis of historical buildings.
5. Wood. Types, processing and application technology, morphology of woodwork, technical characteristics, examples of old wood documentation.
6. Non supporting materials. Glass, porcelain (composition – morphology, characteristics, use)
7. Colours. History, technology, application, technical characteristics, examples.
8. **FREE-HAND DRAWING**
9. Elements and syntax of the artistic language-expression
10. Materials and means of artistic expression in the floor
11. Free-hand drawing – organisation principles
12. Drawing – constitution principles
13. The artistic expression of time, space and light of the Byzantine Hagiography figures
14. Actualisation techniques of the works of Byzantine Hagiography: Necessary teaching equipment: board teaching, teachers showing how to handle artistic drawing and slides of exemplary artistic work
15. **ENGLISH**
16. English for Specific Academic Purposes. Emphasis on all four skills:
17. Listening to lectures
18. Speaking in tutorials and seminars
19. Reading for research
20. Writing assignments
21. **ANALYTICAL CHEMISTRY**
22. Definition of Analytical Chemistry- terminology
23. Solutes – solute concentration – concentration units
24. Chemical balance
25. Weak acids and bases constants
26. Water ionization. Balances of compounds to dissolve (solubility product) complex compounds, redox systems
27. Sampling, sample treatment, measuring techniques, instruments and reactors, statistical processing of analytical data, mistakes, reporting of results
28. Cation splitting into analytical groups
29. Sedimentation, splitting and certification reactions of cations
30. Qualitative analysis of anions
31. Anions reactions
32. Anion exclusion test reactions
33. Anion certification test reactions
34. Qualitative analysis of minerals and raw materials
35. **COMPUTER SCIENCE**
36. Introduction to the course and historical background
37. Data presentation
38. Digital systems
39. Structural elements of computers
40. Basic architectural elements
41. Operating systems
42. Introduction to Windows
43. Algorithms, data and procedures
44. Elements of Theoretical Computer Science
45. Applied Computer Science. Word processing
46. Computerisation systems
47. **ANCIENT GREEK B΄**
48. Grammar- Syntax
49. Teaching of Classical Greek Writers and Fathers of the Church.
50. **ENVIRONMENTAL CONDITIONS FOR THE PRESERVATION OF RELICS**
51. Institutional environment of conservation (administrative and managerial procedures)
52. Natural environment (storage space and conditions of storage)
53. Communication policy of relics
54. **CERAMIC ART**
55. Byzantine
56. Post Byzantine
57. Modern
58. Construction techniques
59. Deterioration diagnosis
60. Restoration methods

**10. ORTHODOXY AND CULTURE**

1. Religion and civilization
2. Orthodoxy and art
3. Content of fundamental forms of Orthodox art
4. Orthodoxy and artistic attitudes and trends
5. Orthodoxy and cultural ideologies and movements
6. Orthodox Theology influences on cultural transformation
7. Orthodoxy and philosophical thinking
8. Theology and literature

**3rd SEMESTER**

1. **PALAEOGRAPHY**
2. Subject and content of Paleography
3. Copying of manuscripts
4. Sheet arrangement and code dimensions
5. Papyri and parchments
6. Collections and publications
7. Relationship between Paleography and papyri
8. Types of writings and their reading
9. Paleography and computers
10. Numeration, copying, dating and correction of manuscripts
11. The contribution of Paleography in the Theological Science
12. **GENERAL ECCLESIASTICAL HISTORY A΄**

It focuses on the founding of the Christian Church, the Apostolic teachings, teachings of their successors, prophets, scholars and Arch-priests. First heresies. Ecumenical synods A-Z, reasons for their convocation and their outcomes. Cyrillus and Methodius teachings. Charles the Great and the founding of the Frankish state. Scholastic Theology. The Great Schism of West and East. First reunification efforts. Investiture Controversy in the West.

1. **INSTRUMENTAL ANALYSIS**
2. Introduction to Instrumental Analysis (methods’ classification)
3. General principles of chromatography (introduction, organology, qualitative and quantitative analysis) Gas chromatography. Liquid chromatography. Level chromatography. HPLC chromatography.
4. Electrochemical methods: Introduction to electrochemical methods. Potentiometry (introduction, organology, potentiometric and volumetric measurements, potentiometric kinetic methods)
5. Electrodeposition – Coulometry – Polarography
6. Interaction of radiation and material
7. Quantitative analysis with radiation absorption
8. Phasmatoscopy organology
9. Flame photometry and spectroscopy of atomic absorption
10. Spectroscopy NMR and X-rays.
11. **ASSESSMENT OF RELICS AND BUSINESS PLAN**
12. Development of the artwork market
13. Development parameters and value evaluation
14. Optimization procedures
15. Sociological connection between value and commercial price
16. Elements of Economical theory
17. Institutional planning for developing collections
18. **ELEMENTS OF PHYSICS**
19. General coordinates
20. Conservation laws
21. Movement in central voltage
22. Conflict of particles
23. Oscillations
24. Wave definition and propagation
25. Nature and light transmission
26. Phenomena of reflection and refraction
27. Light interference and diffraction
28. Polarization. Absorption and emission spectrums
29. Coulomb Law
30. Dynamic electric charge
31. Electromagnetic filed. Maxwell equations
32. Electric and magnetic fields
33. **ENGLISH**

The present course aims at introducing students to the concepts of ESP and translation through the use of theological texts that primarily focus on the life and martyrdom of saints. Issues pertaining to lexis, grammar, register and genre with respect to these theological texts are critically discussed in an effort to shed light on both translational and terminological aspects of English theological texts.

1. **COMPUTER-AIDED DESIGN**
2. General principles of computer-aided design
3. Autocad
4. CAD/CAM
5. Three-dimensional design (3-D)
6. Printouts
7. Analyzing and teaching of escalating difficulty commands
8. Applications of architectural compositions
9. Composite design applications
10. **NUMISMATICS**

This course presents and describes the coins and the history of Byzantine numismatics through the comparison with the coins of other cultural periods and times. It examines coin from an archaeological, historical, typological and morphological point of view. A detailed analysis of the types and uses of coins is provided as well as the role of their circulation in finance is explained. The practical and sociological usefulness of the coins’ depictions and graphic symbolisms in the communication of the state with the citizens is foregrounded. Students get the chance to visit the Numismatic Museum of Athens and attend seminars that primarily aim at helping them recognize coins, acquaint them with the use of new technologies and monetary sources.

1. **EPIGRAPHY**
2. Introduction to Greek Epigraphy
3. Christian and Byzantine Epigraphy
4. Current Epigraphy
5. Technique of amending interventions in the reading and restoration of epigraphs.
6. **EXCAVATIONS AND FINDINGS**
7. Excavation principles
8. Excavation methods
9. Evaluation of excavation findings
10. Evaluation and protective and conservation measures of findings

**4TH SEMESTER**

1. **GENERAL ECCLESIASTICAL HISTORY B΄**

Reunification efforts between the west and the east. Heresies in Byzantine Empire (Michael Psellos, Ioannes Italus, Bogomiles). Constance, Pisa, Basel synods. Hesychast dispute. Conquer of Constantinople. Reformationists: Luther, Calvin, Zwingli. Counter-Reformation: Jesuits – Ignatius of Loyola. Protestant branches (Quakers, Church of the Pentecost, Huguenots, Salvation Army), Unia.

1. **GREEK ECCLESIASTICAL HISTORY**
2. Founding of the Christian Church through Saint Paul’s teachings.
3. Corinth Metropolitan
4. Founding of the other Greek Metropolitans
5. Participation of bishops of Greece in regional and ecumenical synods
6. Vicariate of Thesalloniki
7. Annexation of east Illyria to the throne of Constantinople
8. Repercussions of Iconoclast conflicts for the Church of Greece
9. The teachings of Nicon the “Metanoeite”
10. Monastic life in Greece until the 15th century
11. Greece during Turkish occupation
12. Declaration of Autocephaly in 1833
13. «Tomos» decree of 185
14. Legislative orders Σ΄and ΣΑ΄
15. Contemporary heresies and schisms
16. Movements during 18th and 19th centuries
17. Founding of “Zoi” and “Sotir” brotherhoods
18. The Church during World War I
19. Metaxas dictatorship and cooperation of “Zoi” brotherhood
20. The position of the Church during World War II
21. The Synod of “Aριστίνδην” during the “Junta” dictatorship
22. The 12 bishops problem
23. 590/1977 law
24. **CHEMISTRY OF RELICS CONSERVATION I (T+W)**
25. Chemical analysis of metallic objects. Weighted and volumetric analysis. Microanalysis. Computation and interpretation of results.
26. Radioactivity and nuclear energy. Isotopes, nuclear fission, nuclear reactions, half-life time, stable isotopes in archeology.
27. Dating methods. Organic and inorganic materials. Development of absolute graduated ages. Paleoclimate - Paleoenvironment
28. Ceramics. Geochemistry of clay, its structure and firing. Mineral ceramic composition. Clay element geochemistry. Detection of place of origin. Paints and coating in ceramics.
29. Stone items. Stone, obsidian, marble
30. Glass. Structure, colour and chemistry of glass. Erosion and disintegration of glass. Glass technology investigation
31. Dyes. Classification and characterization of dyes. Paint chemistry. Identification of ancient dyes. Natural and artificial resins. Chemistry and use of resins. Resins analysis. Fats, oils and waxes. Organic materials in art and archeology. Leather and leather products, papyri, paper, fabrics, wood, bones and ivory. Aminoacids Stereochemistry. Bone collagen structure. Aminoacids Racemization as dating starting point.
32. **ECCLESIASTICAL SILVER-GOLD SMITHERY**
33. Historical development
34. Morphology
35. Materials and techniques
36. Contemporary needs and trends
37. **ECCLESIASTICAL GOLD-EMBROIDERY**
38. Historical development and important workshops
39. Morphology
40. Materials and techniques
41. Contemporary needs and trends
42. **DOGMATICS AND ECCLESIOLOGY**
43. Theology – Oikonomia
44. Christology
45. Ecclesiology
46. **MUSEOLOGY**
47. History interpretation – cases in Greece and abroad
48. Eco-museums – open museums – open-air museums – city museum – archeological parks
49. Monuments in use
50. Storage of museum collections (planning – location – air conditioning, lighting, storage methods, equipment)
51. Basic principles of preventive conservation and restoration of museum exhibits
52. Excavations, documentation and publication
53. Treatment of museum objects
54. Keeping and classification of museum collections
55. **ENGLISH**

In this course, an attempt is made to provide a thorough investigation of the concepts of the Divine Liturgy, baptism and the sign of the cross. Through the detailed description of the concepts of water, baptism, spiritual renewal and the presence of our Lord in the Divine Liturgy, students get the chance to become familiarised with some basic English theological terminology which is essential for their professional development. Lastly, grammatical and stylistic issues that come into play are also critically discussed.

1. **ART AND CONSERVATION OF MOSAIC-INLAY**
2. Ancient mosaics (materials, colours, shapes)
3. Mosaic decoration in relation to the floor surface. Emblems and carpets.
4. Pictorial representations
5. Temple Mosaic floors (themes – dedicative inscriptions)
6. Temple decoration materials
7. Wall mosaics. Hagiographical representations (prominent temples)
8. Colour in mosaics
9. Mosaic construction methods
10. Materials and methods of cleaning and restoration
11. **THEOLOGY OF THE ICON**
12. Man as God’s “image”
13. Concept and use of icon
14. Iconoclast and Art
15. Orthodox teaching of icons (veneration and worship, relationship between icon and pictured figures, the aniconism of the divine essence)
16. Pedagogical and Theological significance of icons
17. Icon miracles
18. The icons status in the liturgical life of the Church
19. **CAUSES AND MECHANISMS OF MATERIALS DAMAGE**
20. Causes, symptoms, methodology, diagnostic and evaluation means of degree of deterioration. Hands-on practice in diagnostic and analytical methods.
21. Interventions. Distinction of interventions, criteria for selecting materials based on a holistic approach of the historical structure.

**5th SEMESTER**

1. **CHEMISTRY OF RELICS CONSERVATION II (T+W)**
2. Object characterization and place of origin detection methods
3. Combined approach of origin – technology- dating.
4. Combined methods for checking authenticity
5. Exercises on paper for understanding and processing analytical data
6. The most important landmarks of Greco-Roman Byzantine expertise
7. Causes and symptoms of archeological materials deterioration
8. Metal deterioration. Coins and their adulteration
9. Chemical interaction of substrate and colour layer
10. Conservation chemistry of organic and inorganic materials
11. Polymeric materials in works of art conservation. Inter-surface phenomena – solubility and solvent selection – TEAS

**2. THE COLOUR AS MATERIAL AND SYMBOL IN RELICS**

1. Introduction: Man – Light – Form – Colour
2. Colour as a means of communication and expression
3. The language of colours: Semantic – Symbolic
4. Basic principles of colour theory and practice
5. Special application techniques (encaustic, fresco, watercolours, oil paints, synthetic colours, mosaics)
6. Presentation of applied research for the restoration of colour arrangements on listed buildings and relics
7. Colour measuring representation systems
8. Using colour science in measuring and depicting the works of art palette

**3. METHODS FOR RELIC IMAGING AND DOCUMENTATION I (T+W)**

1. Introduction
2. Role and need of surveying
3. Principles, instruments, photogrammetry methods
4. Surveying flat surfaces
5. Surveying of flat surfaces workshop
6. 3-dimensional surveying
7. 3 – dimensional surveying workshop
8. **PHYSICAL - CHEMICAL METHODS FOR ECCLESIASTICAL RELICS DIAGNOSIS I (T+W)**
9. Conservation science. Introduction to non-destructive and sampling methods of diagnosis
10. Conservation condition study and description. Analog and digital photography shooting in visible and ultraviolet area – Infrared reflectography - Roentgen x-ray – radar technique – use of laser – Holography – Ultra sound Technique
11. Spectroscopy principles – Fluorescence UV/VIS Spectroscopy – IR Spectroscopy, ΜfTIR combined techniques – Raman Spectroscopy, μRaman technique – X-XRD/XRF-SAXS/WAXS ray Spectroscopy – NMR Spectroscopy- Tomography
12. Optical Microscopy – principles and instrumentation – Scan Electron Microscopy (SEM) – X- rays – Scanning tunneling Microscopy and Atomic force microscopy
13. **INTERVENTION AND RESTORATION MATERIALS**
14. Upgraded or modified traditional materials
15. Modern materials in restoration interventions
16. Cleaning, impregnation, protective (silicon) materials
17. Synthetic plastic materials
18. Modern methods of treating moisture as a deterioration factor of masonry relics
19. Modern materials and methods of the reinforcement – fastening of constructions
20. Modern materials and methods of the conservation-restoration of relics
21. Methods for monitoring the effectiveness of interventions
22. Intervention materials. Distinction. Construction and surface intervention materials. Stone, bricks, mortars, grouts, metals, wood, colours, chemicals. Specification of technical characteristics, control methods, reliability, application instructions, hands-on practice. Surface restoration materials. Cleaning, impregnation and protective materials and techniques for the façade materials of historical buildings. Hands-on practice.
23. **FRESCO PAINTING IN ART**
24. Progress from antiquity until today
25. Methods – construction materials
26. Contemporary techniques
27. Construction propositions using modern technology
28. Restoration techniques and intervention materials
29. **elements of ECCLESIASTICAL Literature**

a.1. Introduction to Patrology and its importance in the Orthodox Theology

2. Concept and authority of the father and teacher. Fathers of the Church, Ecumenical Fathers-Ecclesiastical authors. The cultural and spiritual context of the Fathers “era”: education, language, philosophy

B. CEnturies: 1. Apostolic Fathers. 2. 3rd century: Christian Apocrypha, Gnosticism and anti- heretic theologians. 3. Heresy and Orthodoxy during the 4th century. Arianism and the exponents of the Nicea doctrine. Kappadokian Fathers.

1. **MONUMENT TOPOGRAPHY AND IMAGING**
2. Topography’s subject of study
3. Monuments and static reports
4. Main tools of topographic measures and mapping
5. Monument in relation to space
6. Tools, errors and accuracy of measurements and mappings
7. Mapping methods and applications
8. Mass computation and topographic designs
9. Optical overview, estimates, components analysis (optical quality, form, structure and installation prototypes) and area delimitation
10. Cognitive and experiential approach of monuments
11. Geographical correlation and incorporation in a more widely structured environment
12. Visits to monuments
13. **TECHNICAL DRAWING**
14. Types of technical drawing
15. Its role in preserving monument heritage
16. Contemporary possibilities
17. Drawing at different levels
18. **PHOTOGRAPHY**

Main theory and principles of photography analysis. Basic functions of the camera, theoretical and technical knowledge which will help students understand and use the jargon of photography as a means of expression and communication. Emphasis is put on the most common approaches and techniques of an image capture (portrait, object, landscape, etc.)

**6th SEMESTER**

1. **PAINTING (MATERIALS TECHNIQUES)**
2. Progress from natural materials to polymers
3. Materials and methods
4. Types of bearers (wood – paper - metal – wall – fabric)
5. Sociological analysis of painting through different eras and societies
6. **PHYSICAL-CHEMICAL METHODS FOR ECCLESIASTICAL RELICS DIAGNOSIS (II) (T+W)**
7. Chromatography: Principles, Chromatic coordinates – colour measuring with UV/VIS/Integrating Sphere – Colour representation through scanning – Digital image processing - Database structure and use
8. Chromatography: Principles and instrumentation – gas Chromatography, cGC, HRGC, HPLC Chromatography, ion Chromatography, SEC Chromatography – GC – LC mass Spectroscopy – TLC mass Spectroscopy – Electrophoresis
9. Thermical analysis. Principles and instrumentation – Scan Differential scanning calorimetry, thermal balance, thermal mechanical analysis, combustion calorimetry
10. Critical evaluation of diagnostic techniques. Techniques combination and complementarity
11. **CONSERVATION OF WOOD CURVED RELICS (I)**
12. Wood-curved relics’ historical progress
13. Historic buildings’ wooden structural elements (roofs, floors, staircases, frames)
14. Morphology and methods of construction
15. Construction problems
16. Conservation – Restoration
17. Wood structure and qualities. Damage causes and deterioration factors. Wood enemies and defects. Wood life cycle.
18. Materials and preventive protection methods
19. Wooden artifacts assembly
20. Historical and contemporary solutions
21. Wooden structure mechanics. Strength, computational methods
22. Regulations
23. Wooden structure heat insulation, water insulation, soundproofing
24. Fire protection of wooden structural elements and structure
25. Wooden structure pathology
26. Damage diagnosis methods and equipment. Corrective interventions. Damage recovery
27. Conservation. Reinforcement. Materials and methods used for intervention
28. **CONSERVATION OF ICON PAINTING (I)**
29. Studying and describing the current situation in the conservation of the painted surface (digital and macrophotography. Observation and digital photographing in a stereomicroscope)
30. Describing the condition of preservation of the work of art and detecting the presence of overpaintings (Roentgen x-ray and infrared reflectoscopy – reflectography)
31. Study of the design of the work of art (possible changes)
32. Detection of first painted layers underlying the surface
33. Study of the condition of preservation of the surface of the work of art
34. Colour study of the work of art. Comparative study before and after the conservation
35. Identifying the dyes of surface colours in small-dimensional works of art (illustrated manuscripts). Theory and lab practice.
36. **ELEMENTS OF BIOLOGY AND PRINCIPLES OF BIO-CORROSION**
37. Prokaryotic and Eukaryotic cell function and structure
38. Replication, transfer, translation
39. Cell cycle
40. Viruses and phages
41. Structure of multicellular organisms
42. Basic knowledge of physiology and genetics
43. Bioerosion and aging mechanisms
44. Environmental factors, ecosystems
45. Biological populations and their progress
46. Bioerosion mechanisms and phenomenology
47. Aesthetic damage and biological deterioration
48. **DIAGNOSIS – HISTORICAL ASSESSMENT AND CONSERVATION OF WORKS OF ART (Τ+W)**
49. Topics – style
50. Comparative methods of dating – time and space positioning
51. Evaluation of visible structural and aesthetic problems
52. Materials – Physicochemical diagnostic methods, pathology
53. Critical evaluation and selection of conservation methods
54. Valid technical description of the conditions and problems of the conservation
55. Preventive conservation
56. Conservation of load bearing structure and substrate
57. Stabilization of colour layers
58. Valid technical description of conservation progress
59. Final cleaning
60. Aesthetic restoration of the artwork
61. **THE CHRISTIAN ART IN GREECE (PALEOCHRISTIAN AND BYZANTINE ERA)**
62. Architecture (Church building – styles)
63. Painting (Frescos – portable icons)
64. Sculpture (pillars – parapets – icon screens – shelves)
65. Miniature art (objects of worship)
66. **THE CHRISTIAN ART IN GREECE (MODERN ERA)**
67. Neo Byzantine temples (architecture)
68. Sculpture (pillars, capitals, parapets)
69. Painting (danger of westernization)
70. F. Kontoglou
71. Miniature art (ecclesiastical objects and sacred vessels)
72. **THEORY AND METHODOLOGY OF WORKS OF ART ANALYSIS**

Main goals: the students should be able to appreciate art, evaluate works of art, connect the past and the present in the historical development of art, learn to observe and analyze, experience the aesthetic result. Methodology: study of the visual and morphological elements of the works of art, their interpretation, analysis and evaluation.

Course components: diachronic and synchronic study of the societal role of the work of art, the aim of art, the creator’s role, the recipient’s role in the art of the ancient, medieval, renaissance, modern and postmodern civilizations.

 **7th SEMESTER**

1. **CONSERVATION OF WOODEN CURVED RELICS (II) (T+W)**
	* + 1. Restoration techniques (methods – tools – materials)
			2. Lab class
2. **PATHOLOGY AND MANAGEMENT OF PREVIOUS UNSUCCESSFUL INTERVENTIONS FOR CONSERVATION AND RESTORATION OF RELICS**
3. Types of intervention
4. Ways and methods of diagnosis
5. Measuring methods of existing decay
6. Techniques and ability of reversing decay
7. **MATERIALS AND TECHNIQUES FOR THE MANUFACTURING OF BOOKS (T+W)**
8. History of the progress of writing materials
9. History of bookbinding techniques
10. Ink and colour technology
11. Miniatures
12. Documents
13. **ARCHIVE MATERIAL MANAGEMENT (T+W)**
14. Types of documents
15. Collections and documents pathology
16. Archiving methods
17. Environmental conditions
18. **CONSERVATION OF BOOKS – CODES – DOCUMENTS (I) (T+W)**
19. Library bioerosion treatment
20. Bookbinding restoration
21. Map restoration
22. Parchment restoration
23. Paper supplementation techniques
24. Paper washing
25. Palimpsest reading techniques
26. Codicology
27. **ECCLESIASTICAL MICRO-CRAFTS (T+W)**
28. Miniature art as decorative art
29. Ivory
30. Imperial pyxes
31. Steatites
32. Metalwork
33. Bronze tablets – goldsmiths
34. Enamels
35. Icons with forged metal covering and enameled medals
36. Conservation and restoration techniques and materials
37. **DIGITIZATION TECHNIQUES FOR MONUMENTS AND RELICS (T+W)**
38. Introduction to multimedia
39. Sound, still and moving image digitization through appropriate peripheral devices
40. Audio, image and video storage and compression techniques
41. Archiving of multimedia material and database creation
42. Developing virtual reality applications
43. GPS use and topographic mapping of monuments
44. Utilizing special applications and the internet

 **8. THE ECCLESIASTICAL WEAVING**

1. Weaving art types
2. Historical progress
3. Contemporary methods and trends
4. Weaving in Greece and abroad
5. Textile restoration methods and materials

**9. IMAGE DIGITALIZATION AND ANALYSIS**

1. Introduction to the concept of digital image
2. Definition of relevant terms (Dimensions, analysis, colour depth, compression)
3. Image digitization techniques
4. Image digitization through scanner
5. Image insertion from digital camera. Inserting image from PhotoCD. Finding image from the web
6. Basic characteristics of digital image programmes
7. Photoshop
8. Size alteration – image analysis
9. Mirroring and rotations, part of image copy-cut-paste
10. Colour balance, colour depth alteration, hue – saturation – brightness – contrast
11. Text input and formatting
12. Dynamic effects, work with layers, filters, image composition
13. Digital image printing, page format, preview and printing
14. **MODERN COATING MATERIALS FOR THE PROTECTION OF RELICS**
	* + - 1. Phasmatoscopy
				2. Determining construction period of the object
				3. Assessing damages
				4. Proposed modern materials for restoration of damages
				5. Identification of metal erosion
				6. Definition of Mediterranean copper slabs and their differences
				7. Erosion stabilizers
				8. Ways of steel preservation
				9. Colours (quality of colours)
				10. UV rays
				11. Infrared radiation and its effect on colours
				12. Polymerization

**8TH SEMESTER**

1. **AESTHETICS OF ORTHODOX CHRISTIAN ART**
	1. Modern church building structure – Monuments
	2. Orthodox temple aesthetics
	3. Necessity of symmetry of spaces
	4. Modern woodcarving – furnishings
	5. Paleochristian art (Hellenistic – Catacombs)
	6. Mosaics (Art – Origin – Aesthetics – mosaic adorned floor –inscriptions etc.)
	7. Painting – Hagiography (Secular – Ecclesiastical – perspectives)
	8. The Icon (its Art and technique – types )
	9. Byzantine painting and Hagiography schools
	10. Iconographic cycles
	11. The influence of the Byzantine Art on the West and vice versa.
	12. Other types of Ecclesiastical Art (Sculpture – Woodcarving – Metalwork – Fabrics – Embroidery)
2. **CONSERVATION OF INLAYS , GLASS, VITRO (T+W)**
3. Technology: basic ingredients and ways of manufacturing glass objects from antiquity till the 18th century – Terminology
4. Basic glass chemistry: the nature of the material - how the construction ingredients influence the objects’ deterioration through time
5. Deterioration – glass objects erosion: mechanical decay – “Watering” – Peeling – surface crusts – blackening of excavation material
6. Examination of glass objects - documentation
7. Glass objects conservation: i) First-Aid ii) Packing and storage iii) Cleaning iv) Fastening

 v) Restoration (welding and supplementing)

1. Mosaic conservation. Materials and methods
2. **CONSERVATION OF FABRICS – VESTMENTS (T+W)**
3. Technology
4. Identification of techniques. Fabric and dye chemistry
5. Conservation and storage methods
6. Conservation and use proposals
7. **CONSERVATION OF METAL OBJECTS OF WORSHIP (T+W)**
8. Register – documentation of object under conservation process (initial and during conservation)
9. Physicochemical examination methods
10. Cleansing methods with chemical and mechanical ways
11. Evaluating the necessity of specific interventions, methods, conservation materials and evaluation of repercussions
12. Fastening and support
13. Welding and supplementation
14. Storing and exposure (environmental conditions, materials)
15. **CONSERVATION OF SCULPTURED AND MARBLE MONUMENTS (T+W)**
16. Sculpture in the round – reliefs
17. Religious themes in stone – marble
18. Parapets – sarcophagi
19. Conservation, cleansing and restoration techniques

**6. CONSERVATION OF ICONS (II) (Τ+W)**

1. Micro-analytical methods of study
2. Stratigraphy study and description (preparing cross-section samples, digital photographing of stratigraphic sections optical microscopy , mathematical processing of digital images)
3. Identification of stratigraphic constituents
4. Identification of dyes and all inorganic constituents
5. Identification of organic constituents
6. Detailed result report
7. Methodology (mass gas chromatography, x-ray, sampling and optical microscopy – image processing, scanning electron microscopy and liquid chromatography, infrared reflectography, spectography, visible spectrum photography, tangential lighting photography ,ultraviolet fluorescence photography, chromatometry, image digitization).

**7. CULTURAL PROPERTY LAW**

The course delves into the important issue of Cultural Objects and Ecclesiastical Heritage protection which is provided in accordance with the provisions of the national cultural heritage law. The protection concerns the conservation of the historical memory and the upgrading of the cultural environment. The cultural heritage includes both tangible and intangible objects. The course describes the framework of national and international law rules which ensure the cultural objects protection. According to the law, the Cultural Objects and Ecclesiastical Heritage protection mainly consists of the detection, research, recording, documentation and study of their elements as well as the objects’ conservation and the prevention of their destruction or alteration and in general any direct or indirect damage. It also entails the prevention of any illegal excavation, their theft and/or their illegal exportation, their preservation and necessary restoration, the facilitation of the public’s access and communication, their enhancement and inclusion in the contemporary social life and education as well as aesthetic education and the awareness-building of the public as far as cultural heritage is concerned.

1. T stands for Theory and W for Workshop [↑](#endnote-ref-1)