

O. Reality

[I. Mathematics](#)

The Structure of Exact Realities

[Areas of Mathematics](#)

[List of Equations](#)

[List of Functions](#)

[List of Theorems](#)

[List of Unsolved Problems in Math](#)

1.0.0 Logics

[1.1 Mathematical Logic](#)

The Foundations of Reality Construction

[List of Mathematical Logic Topics](#)

Main Theories: Elementary (Arithmetic, Algebra, Analysis; Structure) |
Systems (Universes, Axiomatizations) | Category (Class, Set, Model) |
Proof (Recursion, Computability, Automata) | Analyses (Cardinal, Ordinal) |

1.1.0 Structure

[1.1.0 Structure \(Abstract\)](#)

Formal Constructions of Mathematical Elements

[List of Algebraic Arithmetics Topics](#)

Main Theories: Primality (Number Field, L-Function, Class Field)

1.1.1 Abstractics

[1.1.1 Abstract Algebra](#)

Idealized Structures of Ordered Objects

[Outline of Abstract Algebra](#)

Main Theories: Algebras (Group, Ring, Field; Differential, Nonassociative, Universal)
Representation (Morphism, Operator, Fundamental; Prime)

1.1.2 Algebraics

[1.1.2 Linear Algebra](#)

Linear Mappings of Structured Forms

[Outline of Linear Algebra](#)

Main Theories: Function (Vector, Matrix, Tensor; Space)

1.1.3 Arithmetics

[1.1.3 Arithmetics](#)

The Queen of Kings: Infinitary Functions of Analytical Enumeration

[List of Number Theory Topics](#)

Main Theories: Arithmetic (Additive, Fractional, Multiplicative; Polynomial)
Analytic (Complex, Meromorphic, Prime; Modular)

1.2.0 Space

[1.2.0 Space \(Object\)](#)

Embeddings of Structural Solution Mappings

[List of Algebraic Geometry Topics](#)

Main Theories: Forms (Variety, Sheaf, Scheme)

Structures (Manifold-Algebra; Moduli, Stack, Topos)

1.2.1 Graphics

[1.2.1 Combinatorics](#)

Discrete Maps of Linear Structures

[Outline of Combinatorics](#)

[List of Graph Theory topics](#)

Main Theories: Combinatorial (Algebraic, Analytic, Arithmetic)
Graph (Path, Tree, Network; Compact, Simple, Scale-Free)

1.2.2 Geometry

[1.2.2 Geometry](#)

Spatial Constructions of Functional Objects

[List of Geometry topics](#)

Main Theories: Linear (Plane, Polytope, Transformation)
Nonlinear (Differential, Hyperbolic, Projective)
Analytic (Complex, Fractal, Parametric)

1.2.3 Topology

[1.2.3 Topology](#)

Continuous Transformations of Operator Forms

[List of Topology topics](#)

Main Theories: General (Metric, Homotopy, Homology)
Geometric (Surface, Space, Manifold)
Algebraic (Cohomology, Invariant, Characteristic)

1.3.0 Shift

[1.3.0 Shift \(Morphism\)](#)

Analytical Action of Continuous Functions

[List of Arithmetic Dynamics Topics](#)

Main Theories: Arithmeticity (Modular Forms, Fractional Series, Iterative Sets)

1.3.1 Calculus

[1.3.1 Calculus](#)

Infinitive Continuations of Linear Operations

[List of Calculus topics](#)

Main Theories: Geometric (Differential, Integral, Partial)
Multivariate (Functional, Vector, Tensor)
Special (Variational, Fractional, Stochastic)

1.3.2 Analysis

[1.3.2 Analysis](#)

Systems of Solutions for Infinitary Structures

[List of Analysis topics](#)

Main Theories: Fundamental (Real, Complex, P-adic)
Functional (Harmonic, Topologic, Operator)
Arithmetic (Holomorphic, Fractal, Modular)

1.3.3 Dynamics

[1.3.3 Dynamical systems](#)

Continuous Forms of Spatiotemporal Functions

[List of Dynamical System Topics](#)

Main Theories: Ergodic (Bifurcation, Perturbation, Stability; Feedback)
Chaos (Turbulence, Invariance, Emergence; Criticality)

2.0.0 Scientifics

2.0.0 Science

The Experiential System of Analysing Realities

Outline of Science

Main Theories: Formal (Mathematic, Logic)
Natural (Biological, Chemical, Physical)
Applied (Computational, Technological)

2.1.0 Physics

2.1.0 Theoretical Physics

Mathematical Exactification of Material Systems

Outline of Physics

Main Theories: Classical | Quantum | Relativistic | Quantum-Relativistic

2.1.1 Classics

2.1.1.1 Dynamechanics

Structures of Simplified Idealized Systems

Main Theories: Mechanics (Kinematics, Statics, Continuum)
Dynamics (Fluid, Harmonics, Optics)
Analytical (Generalized, Symmetry, Field)

2.1.1.2 Electromagnetics

Actions of Charged Fields

Main Theories: Electromagnetism (Electrodynamics, Magnetostatics, Fields)

2.1.1.3 Thermodynamics

Systems of Energetic Interactions

Main Theories: Energy (Action, Entropy, State; Conservation)
Statistical (Kinetics, Ensembles, Nonequilibrium)

[List of equations in Classical Mechanics](#)

[List of Electromagnetism Equations](#)

[Table of Thermodynamic equations](#)

2.1.2 Quantics

2.1.2.1 Quantum Mechanics

Discrete Actions of Basic Particles

Main Theories: Quantization (State, Interaction, Operator; Wavefunction)

2.1.2.2 Quantum Field Theory

Relativistic-Analytic Continua of Fundamental Forces

Main Theories: Fields (Electrodynamics, Chromodynamics; Entanglement)

2.1.2.3 Quantum Standard Model

Particular Framework of Discrete Material Physics

Main Theories: Subatomic (Elementary, Force, Gauge)
Condensed (Phase, Plasma, Statistics)

[List of equations in Quantum Mechanics](#)

[List of equations in Nuclear and Particle Physics](#)

2.1.3 Relativistics

2.1.3.1 Special Relativity

Perspectives of Space and Time at Lightspeed

Main Theories: Covariance (Mass, Motion, Transformation)

2.1.3.2 General Relativity

Integration of Actions on Spatiotemporal Structure

Main Theories: Spacetime (Manifold, Tensor, Action)

2.1.3.3 Quantum Relativity

Provisional Quantization of Relativistic Interactions

Main Theories: String (Supersymmetry, Hyperspacetime, Duality)

[List of Relativistic Equations](#)

[Mathematics of General Relativity](#)

[List of Quantum Relativity Topics](#)

2.2.0 Numerics

2.2.0 Mathematical Modelling

Exactification of Theoretical Hypotheses

Main Theories: Experimentation (Simulation, Study, Trial; Protocol)

List of Solution Methods

Outline of Formal Science

2.2.1 Calculitics

2.2.1.1 Optimalics

Solutions of Mean Systemic Extrema

Main Theories: Variational (Convex, Minimax, Multivariate; Critical)

2.2.1.2 Numerics

Finitary Resolution of Infinitive Functions

Main Theories: Perturbation (Error, Evaluation, Regression; Approximation)

2.2.1.3 Tactics

Idealized Logics of Decision Structures

Main Theories: Game (Cooperative, Equilibrium, Symmetry; Multiple, Infinitary)

List of Computational Methods

2.2.2 Analytics

2.2.2.1 Statistics

Randomized Analyses of Finitary Numerical States

Main Theories: Probability (Distribution, Density, Space; Central-Limit)

2.2.2.2 Stochastics

Infinitary Analysis of Discretized Randomized Structure

Main Theories: Process (Equidistributed, Independent, Weighted; Multiple)

2.2.2.3 Strategics

Applied Analytics of Hypercomplex Dynamic Systems

Main Theories: Logistics (Management, Operation, Plan; Solution)

List of Analytics Systems

2.2.3 Computics

2.2.3.1 Computerics

Logic Systems of Discrete Finitary Calculi

Main Theories: Computation (Information, Complexity, Automatics; Quantum)

Coding (Compression, Hashing, Signal; Cryptographics)

Programming (Assembler, Language, Semantics; Iteration)

2.2.3.2 Controlics

Embedded Interfacing of Physical Procedures

Main Theories: Controllability (Feedback, Nonlinearity, Stability; Optimality)

Systemic (Linear, Nonlinear, Stochastic; Multiscale)

2.2.3.3 Cybernetics

Interconnected Systems of Automorphous Interactions

Main Theories: Robotics (Automation, Interaction, Learning; Adaption)

Interconnection (Data, Network, Webwork; Interweb)

Bionics (Androidics, Biomimetics, Nanobotics; Autonomics)

Outline of Computer Science

2.3.0 Technics

2.3.0 Applied Science

Embedded Experimental Physical Exactification

Main Theories: Measurement (Imaging, Metrology, Probing; Instrumentation)
Materials (Composite, Metamaterial, Phase; Microstructure)

Outline of Applied Physics

Outline of Measurement

Outline of Technology

2.3.1 Constructics

2.3.1.1 Technologies

Applied Material Methods of Engineering Solutions

Main Theories: Mechanical (Industrial, Civil, Aerospace; Applied)
Electrical (Circuit, Electronic, Power; Information)
Biochemical (Organics, Pharmacologies, Synthetics; Process)

2.3.1.2 Structurics

Multidimensional Resolution of Systemic Optimality

Main Theories: Analyses (Failure, Load, Stress; Variance)
Structure (Utility, Maintenance, Constraint; Construction)

2.3.1.3 Systematics

Complex Constructs of Interconnected Interactions

Main Theories: Dynamical (Feedback, Ergodicity, Bifurcation; Chaos)
Multiscale (Criticality, Integration, Organization; Invariance)
Emergence (Fractality, Hypercomplexity, Reactivity; Automorphy)

Outline of Engineering

2.3.2 Biologics

2.3.2.1 Microbiologics

Viral, Cellular, Bacterial, and Molecular Interactions

Main Theories: Organismal (Cell, Organ, System; Network)
Cellular (Cycle, Genetics, Process; Development)
Molecular (Biochemistry, Dynamics, Energetics; Structure)

2.3.2.2 Physioanatomics

Organ-Functional Operations and Living Processes

Main Theories: Homeostasis (Respiration, Reproduction, Reaction; Metabolism)
Systemic (Endocrine, Immune, Neurosynaptic; Musculoskeletal)
Pathology (Genesis, Physiology, Epidemiology; Diagnostics)

2.3.2.3 Macrobiologics

Evolving Structuring of Living Systems

Main Theories: Evolution (Heredity, Mutation, Selection; Speciation)
Zoology (Ethology, Population, Taxonomy; Trophics)
Botany (Agronomy, Phytotomy, Phytoecology; Soil)

Outline of Biology

Outline of Physioanatomy

Outline of Medicine

2.3.3 Complexics

2.3.3.1 Chemics

Interacting Molecular Charge Mechanics

Main Theories: Analytical (Equilibrium, Reaction, Solution; Compound)
Biologic (Synthetic, Pharmacology, Toxicology; Organic)
Structural (Valence, Orbital, Bond; Mean-Field, Nuclear)

2.3.3.2 Biotics

Hypercomplex Autonomous Freeform Systems

Main Theories: Biophysics (Biomechanics, Bioelectrics, Bioenergetics)
Biomics (Genomic, Proteomic, Metabolomic; Panomics)

2.3.3.3 Cognitics

Automorphous Processes of Inter-Reactive Potentials

Main Theories: Cognition (Consciousness, Development, Intelligence)
Psychophysics (Action, Morphology, Potentiation)
Neuronics (Endocrinology, Neurophysiology, Synaptics)

Outline of Chemistry

Outline of Biophysics

Outline of Neuroscience

3.0.0 Cosmics

3.0.1 Cosmologies

Past and Prospect Structures Universal

Main Theories: Standard Model (Structure Formation, Inflation, Big-Bang)

3.0.2 Astronomies

Evolution and Resolution of Stellar Processes

Main Theories: Astrophysics (Black Holes, Galaxy Formation, Stellar Evolution)

3.0.3 Astronautics

Analyzing and Engineering of Space-Systems

Main Theories: Astromechanics (Astrodynamics, Astrochemistry, Astrobiology)

Outline of Space Sciences

3.1.0 Planetics

3.1.1 Planetologies

Measurement and Modelling of Planetary Mechanics

Main Theories: Geophysics (Geodesy, Tectonics, Atmospherics)

3.1.2 Geologies

Physical Analyses of Fundamental Earths-Processes

Main Theories: Geology (Geomorphology, Petrology, Sedimentology)

3.1.3 Ecologies

Integral Analytics of Multiscale Biophysical Systems

Main Theories: Ecologies (Biogeochemistry, Ecophysics, Biospherics)

Outline of Planetary Sciences

3.2.0 Historics

3.2.1 Historics

Unitive Studies of Past Spatiotemporal States

Main Theories: Natural (Life, Earth, Solar; Universal)

Chronology (Paleontology, Archaeology, Anthropology)

Human (Paleolithic, Mesolithic, Neolithic;

Ancient, Classical, Modern;

Low, Middle, High)

3.2.2 Societics

Natural Emergent Structures of Hypercomplex Systems

Main Theories: Sociophysics (Sociodynamics, Economics, Civics; Politics)

3.2.3 Semiotics

Formal Constructs of Logical Symbolic Meaning

Main Theories: Linguistics (Syntactics, Semantics, Lexicography)

Typology (Phonology, Morphology, Etymology)

Grammatics (Grammatology, Philology, Symbology)

Outline of Societal Sciences

3.3.0 Artistics

3.3.0.1 Art

Realization of Creative Works

Main Theories: Aesthetics (Concept, Structure, Technique; Creation)

3.3.0.2 Craft

Materialization of Perfective Utilities

Main Theories: Artisanry (Design, Fabrication, Tooling; Mastery)

3.3.0.3 Game

Free Forming Functions of Recreative Creativity

Main Theories: Play (Narrative, Mechanics, Strategy; Worldbuilding)

Applied Arts

Outline of Crafts

Outline of Games

List of Recreational Arts

3.3.1 Material

3.3.1.1 Architectural

Building of Maximal Constructs

Main Theories: Design (Function, Form, Freedom; Style)

3.3.1.2 Musical

Creation of Harmonic Perfection

Main Theories: Composition (Scale, Melody, Harmony; Analysis)

3.3.1.3 Visual

Physical Objects of Aesthetic Value

Main Theories: Form (Texture, Shape, Color; Quality)

Outline of Material Arts

Outline of Architecture

Outline of Music

3.3.2 Motival

3.3.2.1 Athletic

Physioanatomic Modes of Perfective Physique

Main Theories: Exercise (Strength, Gymnastic, Aerobic; Sports)

3.3.2.2 Performing

Creative Expression of Ideas in Action

Main Theories: Act (Dance, Performance, Theatre; Film)

3.3.2.3 Martial

Method as Practice of Applied Corporeality

Main Theories: Combat (Attack, Defence, Weapon; Meditation)

Outline of Performing Arts

Outline of Martial Arts

Outline of Sport

3.3.3 Mental

3.3.3.1 Philosophy

Free Theoretical Thought on Truthful Meanings

Main Theories: Metaphysics (Ontology, Ethics, Epistemology)

3.3.3.2 Literature

Artistic Expression of Verbal Varieties and Verities

Main Theories: Prosaics (Fiction, Myth, Nonfiction; Poetics)

3.3.3.3 Logic

The Formal Natural Structuring of Universal Veracities

Main Theories: Reason (Predicate, Modal, Infinitary; Categorical)

Archive of the Classics

Outline of Philosophy

Outline of Logic