

The thematic structure of the course *Gambling-mathematics knowledge for gambling counselors*

(detailed content structure broken down by lessons will be posted soon)

Module 1 – Basic mathematical notions (8 lessons): Sequences and convergence; Basic probability-theory concepts – events, field of events, sample space, probability field, probability on a finite field of events; Conditional probability; Properties of probability – total probability formula, the inclusion-exclusion principle; Basic statistics concepts – statistical series and statistical indicators (mean, median, expected value, dispersion, volatility); Gaming-specific examples and applications.

Module 2 – The nature, interpretations and use of probability (5 lessons). Randomness and uncertainty; Frequency and relative frequency; Probability as a measure; Probability as a limit; Theoretical interpretations of probability – Classical probability, inductive probability, frequential probability, propensic probability; Objective and subjective probability; Infinity as constitutive for probability; The limitations and relativities of probability; Mathematical probability and the common-sense concept of probability; Tricky perceptions and misconceptions about probability; Probability and possibility; The reality of the stabilization of the relative frequency; The use of probability theory in gambling.

Module 3 – Mathematical models of gambling and their applications (7 lessons). What is a mathematical model, functions and outcomes of a model; Mathematical modeling and the factual reality; Accuracy and limitations of the mathematical models; The mathematical models of the games – functional models and statistical models; The mathematical description of game characteristics/design –awareness and ethics; Bets; Probabilities and odds; House edge; Probability of repetitive gaming events; The mathematical models of gambling strategies; Gaming-specific examples and applications; The constitutive role of mathematical models of the games.

Module 4 – Gaming strategy and objectivity of the gambling decisions (5 lessons): The strategic criteria; The relativity of the strategy; The probability-based strategy and optimal play; Estimating, weighting and comparing odds/probabilities; The mathematical description of the common gambling misconceptions and fallacies – unrealistic expectations, subjective non-rational estimations, erroneous strategy, conjunction fallacy, near miss effects, the “winning systems”, frequentist belief criterion; Responsible gambling with gambling-mathematics knowledge.

Module 5 – Mathematical-epistemic elements of gambling responsible for irrational beliefs and behaviour (3 lessons): Mathematical truth and contingent truth in gambling; The language of the descriptions and its semantics; Distinction between mathematical and non-mathematical concepts; The empirical context of gambling knowledge; Gambler’s reward; Subjectivity of the measurements; Specificity of gambling addiction – adequacy of the warning messages.

Rules, terms, and conditions

- The lessons are delivered on a biweekly basis, usually Monday and Thursday in Google Drive (a Google account is necessary for using Drive and accessing your written lessons).
- Case studies are proposed for discussion on the chat/forum platform.
- The question-answer sessions take place following each lesson, having as their subject the previous lesson. All questions (maximum 5) should be sent together in one message, having in the subject line your name and the number of the lesson to which they apply (example: "John Smith – lesson 3"). The questions should concern issues of understanding and unclear points from the previous lesson, with no requests for calculations or solutions to problems. Students will receive answers to their questions in email before the next lesson; the answers cannot stand as a basis for new questions.
- Course fees should be paid in advance, in full or in part. A partial payment must cover at least one module and is not refundable. If payment for several modules was made and the student decides to withdraw from the course, the student will be refunded only the amount corresponding to the modules not yet started. A student may, however, temporarily suspend participation and resume at a later date.
- Deviations from the delivery timeframe are possible, depending on the undetermined working volume of the interactive sessions (answering questions and test corrections) or unpredictable circumstances. In unpredictable circumstances, the course can be stopped at any time and resumed at a later date.
- The delivery of the course will have a 2-week break in the summer time (July-August) and a 2-week break in the spring time (April-May); participants will receive prior notice of the dates for the break.
- The delivered lessons hold the copyright of their authors. Copying, distributing, or posting them on the internet are not allowed. Any such attempt will be subject to legal action against the copyright infringer. Submission of the registration form constitutes awareness and acceptance of these terms and conditions.

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