**MIS-536 Digital Currency Information Systems and Resources**  
*Does not require Programming Background*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS Credits</th>
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<tbody>
<tr>
<td>MIS-536</td>
<td>Digital Currency Information Systems and Resources</td>
<td>10</td>
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<thead>
<tr>
<th>Department</th>
<th>Semester</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>Computer Science Management &amp; MIS</td>
<td>Fall/Spring/Summer</td>
<td>DFIN-511</td>
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<tr>
<th>Type of Course</th>
<th>Field</th>
<th>Language of Instruction</th>
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<tbody>
<tr>
<td>Elective</td>
<td>Information Systems</td>
<td>English</td>
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<tr>
<th>Level of Course</th>
<th>Year of Study</th>
<th>Lecturer(s)</th>
<th>Co-requisites</th>
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<tbody>
<tr>
<td>2nd Cycle</td>
<td>2nd</td>
<td>Dr A. I. Kokkinaki</td>
<td>None</td>
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<td>Dr C. X. Mavromoustakis</td>
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<th>Mode of Delivery</th>
<th>Work Placement</th>
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<tr>
<td>Distance Learning</td>
<td>N/A</td>
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**Objectives of the Course:**

The main objective of this course is to provide students with a conceptual framework and applied competencies that will assist them understand, apply, assess and manage Information Systems and resources supporting the implementation or utilization of digital currencies. Topic areas of the course include:

- Types of Digital Payment Systems and P2P Currencies
- Concepts of P2P Decentralized Architectures
- Fundamentals of Crypto-currencies and Security
- Specification and analysis of different types of Digital Wallets
- Requirements specifications for extending the Digital Currency ecosystem
- Risk Analysis for Digital Currency Exchanges
- Mobile Information Systems and Services in Digital Currency
- Cloud-based Services and Mobile Computing
- Alternative Digital Currencies
- Development of Digital Currency derivatives and other investment options
- Transactions and Privacy in Digital Currencies
Learning Outcomes:

Upon completion of this course, students are expected to be able to:

1. Understand, employ, critically assess and evaluate different Information Systems and Resources used for Digital Currencies.
2. Understand and analyze principles of P2P architectures and their application in P2P currencies.
4. Provide students with deep knowledge on Mobile services and the underlying infrastructure needed.
5. Critically assess and acquire the knowledge on Mobile Information Systems and Services.
6. Identify, describe and apply mobile and Cloud-based services in Digital Currencies.
7. Examine the Digital Currency ecosystem, identify best practices as well as opportunities for implementations or investment.

Course Contents:

4. Specification and analysis of different types of Digital Wallets.
5. Requirements specifications for extending the Digital Currency ecosystem.

Learning Activities and Teaching Methods:
Lectures, Webex Tutorials, Assignments and Project.

Assessment Methods:
Project, Mid-term Exam, Final Exam.

Recommended Articles / Reading List:


8. Theoretical Bitcoin Attacks with less than Half of the Computational Power (draft), Lear Bahack (arXiv:1312.7013)

9. How to deal with malleability of BitCoin transactions, Marcin Andrychowicz, Stefan Dziembowski, Daniel Malinowski, Łukasz Mazurek (arXiv:1312.3230)


11. Majority is not Enough: Bitcoin Mining is Vulnerable, Ittay Eyal, Emin Gun Sirer (arXiv:1311.0243)

