

## Cloud Computing

### תיאור הקורס

In this course we describe the idea behind cloud computing, the motivations and offerings. We define basic concepts and the different types of clouds. We explore the architecture of cloud friendly applications and show the different infrastructures available in the cloud today. Deploying an application to the cloud involve several challenges such as security and performance which are .discussed in the course

- What is the Cloud
  - Define the term "Cloud Computing"
  - Explain the motivation cloud computing
  - Explain the economics behind cloud computing
  - The requirements from the cloud
- Basic Concepts
  - The Utility Model
  - Geo Distribution
  - Elasticity
  - Scale
- Types of clouds
  - Private cloud
  - Public clouds
  - IAAS
  - PAAS
  - SAAS
  - Storage As a service
  - Middle Tier in the cloud
- Major Cloud Offering
  - Windows Azure
  - Amazon Web Service
  - Google Apps
  - Rackspace
  - Others
- Cloud Architecture
  - Architecture concerns for cloud ready applications

- Development Procedures and tools
- Management procedures and tools
- Deployment Procedures and tools
  
- Data in the Cloud
  - Storage types
  - Sql and NoSql Databases
  - Distributed File systems
  - Disaster recovery
  - Geo Distribution
  - Caching
  
- Distributed Computing
  - Types of distributed applications
    - Hadoop
    - HPC
  - Distributed application examples
  
- Security in the Cloud
  - Security challenges
  - Security and privacy standards
  - Security technologies and methodologies
  - Identity in the cloud
  
- Performance
  - Performance issues and design
  - Design for high scale application
  - Other non functional requirement is the cloud
  
- The future of cloud computing

- True Hybrid cloud
- Future cloud application, data and middle tier infrastructures
- Cloud trends
- The cloud in a multi platform environmen