



Business Analytics

Introduction

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 - Course Timeline



About the Instructors

About the Instructors - Erfan Hassannayebi



Erfan Hassannayebi, Ph.D.

Assistant Professor of industrial
and System engineering,
Sharif University of Technology
hassannayebi@sharif.edu

■ Education:

- *B.Sc.* Industrial and System Engineering, Sharif University of Technology, Iran
- *M.Sc.* Industrial and System Engineering, Sharif University of Technology, Iran
- *PhD*, Industrial and System Engineering, Tarbiat Modares University, Iran

■ Industry experience:

- System Engineer at Information Technology Research Institute (TMU)
- Industrial Engineer at Simaron Pardaz Co. (Official partner of INCONTROL, Utrecht, Netherlands)

■ Training & Consultancy:

- Petrokavian, Mobile Telecommunication Company of Iran, Sepahan Battery Industrial Complex (SBIC), MIDHCO, SAPCO, Zargroup, BAT (British American Tobacco) Pars, MAPNA Group, Dana Energy, Jam Petrochemical Company, SaipaPress CO, sarcheshmeh.nicico,

■ Research interests:

- Business Process Management, Process Analytics, Data Analytics, Computer Simulation, Business Intelligence



About the Instructors - Hamidreza Hadad



Hamidreza Haddad
Bi Developer, SAAD innovation Holdings

Educational background:

PHD of production management

University of Tehran

MSc of Industrial Engineering

Iran University of Science and engineering

BSc of Industrial Engineering

Iran University of Science and engineering

Industry Experience:

Senior Data Analyst. SAAD innovation Holdings, Saderat Bank

Senior Data Analyst. DAATA, Tejarat Bank

Buissness Analyst. Monenco consultancy engineering (Mapna Group)

Training:

Instructing several courses on Power BI, Python, BI implementattion, SQL Server, TSQL and etc at:

- Sharif univerty
- Fara Tar Az Danesh
- Irancell Academy
- Tehran Data
- NikAmooz
- ...



About the Instructors - Hamed

Education

- Bachelor's of Industrial Engineering at Sharif University
- Master's of Business Analytics at Politecnico di Milano

Professional Experience

- Project Business Analyst at Tehran Municipality - Iran
- Supply Chain Data Analyst at MasterFoodeh - Iran
- Loyalty Program Developer at Oracle Italy - R&D Consulting Project - Italy
- Business Operation Analyst at Whirlpool EMEA - Italy
- Business Sales Analyst at KitchenAid Europe - Belgium

Teaching Experience

- Business Analytics Course Instructor at Sharif University
- Marketing Analytics at Scientific Association of Sharif Faculty of Industries
- Data Storytelling at Scientific Association of Sharif Faculty of Industries
- Data Science Instructor at Entrepreneurship Center of Sharif
- BI Guest Lecturer at Scientific Association of IE at Sharif (Gamein)



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About the Instructors - Atrin

Education

- Master's of Business Analytics at Desautels Business School, McGill University
- Bachelor's of Industrial Engineering, Sharif University



Professional Experience

- Senior Business Intelligence Developer, Unity
- Data Scientist Scotiabank - Analytics Consulting Project
- Digital Marketing Analyst, Lunawood



Scotiabank

Teaching Experience

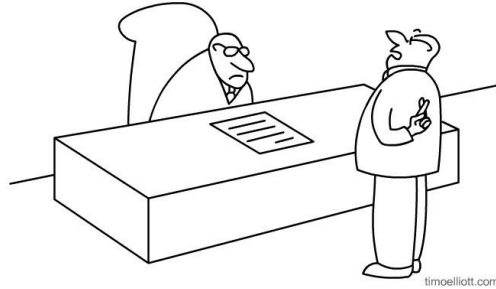
- Business Analytics Course Instructor at Sharif University
- BI & Data Mining Instructor at Entrepreneurship Center of Sharif
- BI Guest Lecturer at Scientific Association of IE at Sharif (Gamein)





Intro to Business Analytics

What is Business Analytics and Who is Business Analyst



"Yes sir, you can absolutely trust those numbers"

Identifying business needs and their solution using historical data, in order to make quick decisions for strategic operations.

Business analysts (BAs) are responsible for bridging the **gap** between IT and the Business using **data analytics** to assess processes, determine requirements, and deliver **data-driven recommendations** and **reports** to executives and stakeholders.



I am a business Analyst, what should I do?

Who knows!? But probably you should perform some of these task:

- Creating a detailed business analysis in an effort to outline **problems**, **opportunities**, and **solutions** for a business (MLR:Management Ledger Review)
- Budgeting and Forecasting (Profit Plan)
- Planning and Monitoring (Variance Analysis)
- Pricing (Business Case)
- Reporting (Business Performance Report)
- Defining business requirements and reporting them back to stakeholders (RFP)



I am a business Analyst, How can I boost myself?

Who knows!? But probably you should perform some of these task:

- You should know your data
- You should know your business
- You should communicate well
- You should not make yourself indispensable
- You should adjust when things go wrong

**23.9% of data analytics leaders say they've
created a data-driven organization**



What are my tools as a Business Analyst?

Category	Tools
Infrastructure – Storage, Data Lake, DWH	GCP Storage, GCP Big Query, Azure Data Lake, Azure Synapse, AWS S3, AWS Redshift
Infrastructure – Database	Azure SQL Server, ElasticSearch, AWS Aurora
Infrastructure – Hadoop & Big Data	Hadoop, Cloudera, Hortonworks, Hive, Kafka
Infrastructure – ETL	Informatica
Infrastructure – Data Governance	Collibra
Analytics – Business Intelligence	Looker, Tableau, MS PowerBI, Qlik
Analytics – Data Science Platform	SAS, Databricks, Knime, Data Robot, Alteryx, Dataiku
Analytics – Computer Vision	GCP Vision API
Analytics – Speech & NLP	GCP Dialogflow, GCP Cloud Natural Language
Analytics – AI framework & languages	Spark, Scala, Python, R, TensorFlow
Analytics – Commerce & Customer Data Platforms	Google Analytics 360, Adobe Analytics, Segment
Automation & RPA	UiPath, BluePrism, Automation Anywhere, Nice



Course Overview

Course Outline - Hamed

Introduction to Business Analytics

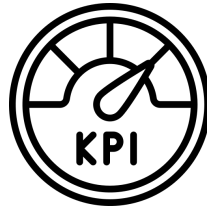
- Overview of Business Analytics
- Importance and Applications in Various Industries
- Understanding Data Analytics Lifecycle
- Role of Business Analyst

Performance Measurement

- Understanding Key Performance Indicators (KPIs)
- Types of KPIs in Different Industries
- Developing KPIs Framework
- KPIs Selection Criteria
- Implementing KPI Tracking Systems
- Marketing KPIs
- Sales KPIs
- Procurement KPIs

Data Storytelling

- Introduction to Data storytelling
- Data storytelling frameworks
- Data Visualization tips



Financial Analytics

- Financial Statement Analysis
- Ratio Analysis
- Capital Budgeting Techniques
- Risk Analysis and Management
- Valuation Methods

Marketing Analytics

- Introduction to Marketing Analytics
- Customer Segmentation and Targeting (RFM Modelling)
- Campaign Performance Analysis
- Customer Lifetime Value (CLV)
- Market Basket Analysis
- Introduction to Marketing Mix Modeling

Course Outline - Dr.HassanNayebi

Process Mining

- Introduction to Process Mining
- Types of Process Mining (Discovery, Conformance, Enhancement)
- Data Sources for Process Mining (Event Logs)
- Preprocessing Event Logs
- Process Discovery Algorithms (Alpha Algorithm, Heuristic Mining, Inductive Miner)
- Conformance Checking Techniques
- Process Enhancement and Optimization
- Case Studies and Practical Applications



Course Outline - Dr.Hamidreza Haddad

Introduction to Business Intelligence (BI)

- Overview of Business Intelligence concepts
- Differences between BI Analysis and BI Development approaches

Power BI - Dashboarding

- Introduction to Dashboards and Data Visualization in Power BI
- Principles of Effective Dashboard Design
- Choosing the Right Chart Types
- Dashboard Interactivity and User Experience
- Building Interactive Dashboards
- Dashboard Deployment and Maintenance
- Dax –from Zero to Hero



Practical Implementation

- Hands-on dashboard creation using real-world datasets
- Case study analysis and practical exercises



Course Outline - Atrin

SQL for Data Analysis

- Introduction to SQL (Structured Query Language)
- Basic SQL Syntax (SELECT, FROM, WHERE, etc.)
- Retrieving Data from Single and Multiple Tables
- Filtering and Sorting Data
- Aggregating Data with GROUP BY and HAVING
- Join Operations (INNER JOIN, LEFT JOIN, RIGHT JOIN, etc.)
- Subqueries and Derived Tables
- Modifying Data with INSERT, UPDATE, and DELETE Statements



Project and Exercise Guideline

This course contains three group exercises and one final group project.

Groups can consist of 4 or 5 members, and they can be self-formed by the students or course assistants can help in assigning them.

Each exercise has a deadline of about two weeks, and the project spans over two months with a live presentation at the end of the course.

Groups are to be finalized by the 3rd session of the course. Course assistants will help ensure group assignment is done properly and communicated to everyone by then.



Course Timeline

جلسه	موضوع	تاریخ	طول جلسه (ساعت)	توضیحات	مدرس
1	Business Analytics Overview	شنبه 6 اردیبهشت	3		حامد علی اکبری
2	Sales KPIs	شنبه 13 اردیبهشت	3		حامد علی اکبری
3	Marketing KPIs	شنبه 20 اردیبهشت	3		حامد علی اکبری
4	Supply Chain KPIs	شنبه 27 اردیبهشت	3		حامد علی اکبری
5	Financial Analytics and KPIs	شنبه 3 خرداد	3	تمرین KPIs	حامد علی اکبری
6	Process Mining 1	شنبه 10 خرداد	2		دکتر نائبی
7	Process Mining 2	شنبه 17 خرداد	2		دکتر نائبی
8	Process Mining 3	شنبه 31 خرداد	2		دکتر نائبی
9	Business Intelligence Overview	شنبه 7 تیر	3		دکتر حداد
10	Data Modeling	شنبه 21 تیر	3	معرفی پروژه	دکتر حداد
11	Dashboarding - Visualization 1	شنبه 28 تیر	3		دکتر حداد
12	Dashboarding - Visualization 2	شنبه 4 مرداد	3		دکتر حداد
13	Dashboarding - Visualization 3	شنبه 11 مرداد	3		دکتر حداد
14	Marketing Analytics 1	شنبه 18 مرداد	3		حامد علی اکبری
15	Marketing Analytics 2	شنبه 25 مرداد	3	تمرین CLV	حامد علی اکبری
16	SQL 1	شنبه 1 شهریور	3		آترین قاسمی
17	SQL 2	شنبه 8 شهریور	3	تمرین SQL	آترین قاسمی
18	Story-telling	شنبه 15 شهریور	3		حامد علی اکبری
19	Project Presentations	شنبه 3 آبان	3	اتهام پروژه	-

THANKS!

Do you have any questions?

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