

Data Science Regulation and Law Spring Semester

Merve Oner Kabadayi

Introduction



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Practicalities - Housekeeping

- Structure of course
- Exam and grading
- Contact details

Structure

The course is structured in five distinct clusters:

Cluster 1: Introduction to law and data science (Merve Öner Kabadayi)

Cluster 2: Private Law and data science (Paul Halliday)

Cluster 3: Intellectual Property Rights, Data Protection and data science (Paul Halliday)

Cluster 4: Ethics in data science (Noelle-Ann Park)

Cluster 5: Privacy and data protection and data science (Marco Bassini)

Assessment and grading

- Group assignment (30%)
 - Written Exam (70%)
 - Resit exam (100%)
-
- Assign for the groups by Monday!

Let's start...

Why Law & Data Science?

- Why are you here?
- Why do you need to learn law?

Why do you need this course?

Ignorantia juris non excusat

the cool way of saying...

Ignorance of the law is not excuse

Therefore: Not knowing the law is no excuse!

What is data science?

Data Science = **Data science** is an inter-disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from many structural and unstructured data.
(https://en.wikipedia.org/wiki/Data_science)

What is law?

There are many definitions...

“Trying to define law is like trying to hammer a pudding to the wall”

Uwe Wesel

What is law?

but let's do simple...

Law = rules that govern and guide actions and relations among and between persons, organizations, and governments.

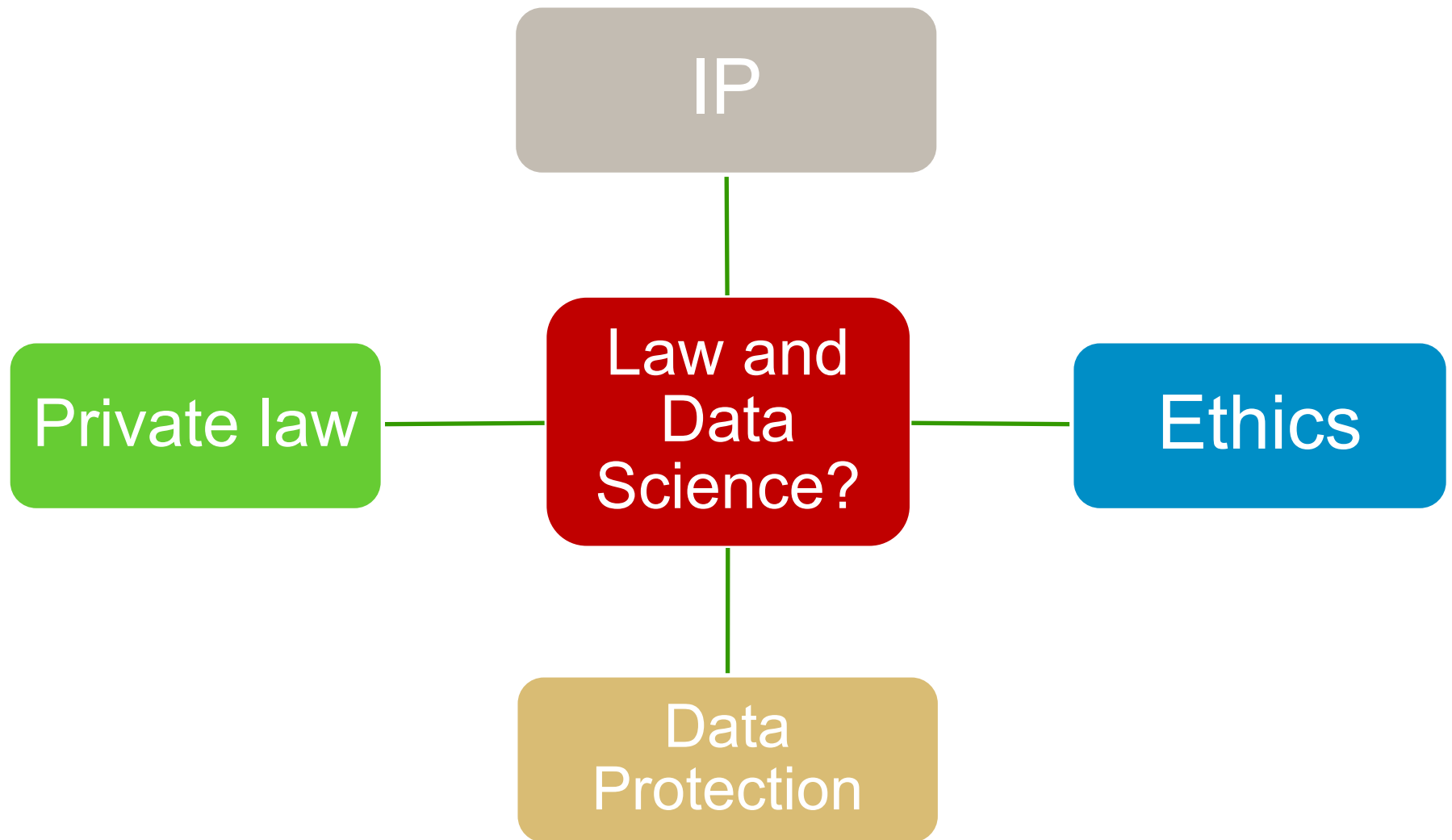
(<http://www.businesslawbasics.com/chapter-2-what-law>)

A bit more sophisticated?

Law = the discipline and profession concerned with the customs, practices, and rules of conduct of a community that are recognized as binding by the community.

(<https://www.britannica.com/topic/law>)

What will we cover in this course?



Privacy



4 september 2017

Privacywaakhond onderzoekt camera's in reclamezuilen op NS-station

De Autoriteit Persoonsgegevens (AP) gaat in gesprek met de NS over camera's die zijn verwerkt in reclamezuilen op perrons.



Adaption of Generative Methods for Anonymization will Revolutionize Data Sharing and Privacy

Taking a break from the generative AI hype around LLMs and foundation models, let's explore how synthetic data created by more traditional generative AI models are set for mainstream adoption.

<https://towardsdatascience.com/adaption-of-generative-methods-for-anonymization-will-revolutionize-data-sharing-and-privacy-d35b6fe704a2>

Intellectual Property



Who owns the data in the Internet of Things?

Data are at the heart of the Internet of Things (IoT). Without connected devices being able to capture, transfer, analyse, report and act on data, the benefits of the IoT cannot be achieved.



Intellectual Property



Style (Taylor's Version) (Feat. Harry Styles) (From The Vault) - Taylor Swift

Criminal investigations

Artificial Intelligence and Data Science are changing Crime Investigation and Prevention

A 'black box' AI system has been influencing criminal justice decisions for over two decades – it's time to open it up

When Artificial Intelligence Gets It Wrong

Unregulated and untested AI technologies have put innocent people at risk of being wrongly convicted.

Example - COVID-19 app

Think about it, what legal areas could be related to this?

- Privacy or Data protection
- Administrative law
- Private law
- Intellectual property law
- Data ethics

Enough?

- Hopefully one can now see why it is important for a data scientist to be aware of legal considerations that will be applicable to data science practices.

Moving on...

Objectives

The key objective of this course is to make students aware about the role law plays – or can play – in the field of data science.

After successfully completing this cluster of the course, you will be able to:

- Identify the basic functions of law
- List the various sources of law
- Describe the relation of law to different modalities of regulation.

Clarifying some concepts

Rights

Absolute rights and relative rights

Absolute right: right that can be exercised against all others. (e.g. property right, right to privacy)

Relative rights: right that can only be exercised against one or more determined persons (e.g. loan)

Objective and subjective law/rights

The law (objective); my right (subjective) – e.g. free speech.

Law

- Purposes and functions
- Principles and rules
- Sources and hierarchy
- Argumentation and legal reasoning
- International and EU law

Purposes and functions: Purposes

The law consists of norms regulating human behaviour and rules that organise the state.

The purposes of law could be summarized as:

- **establishing standards**
- **maintaining order**
- **resolving disputes**
- **protecting liberties and rights**

Moral norms vs legal norms.

Source: Hildebrandt, M. (2019). 2. Law, Democracy, and the Rule of Law. In Law for Computer Scientists.

<https://lawforcomputerscientists.pubpub.org/pub/hx1s8lbt>

Purposes and functions: Functions

‘Rule of law’ vs ‘Rule by law’

- **Legislative function (or legislature)** : determines the rules that will govern the process of adjudication. Legislation tells judicial function *how* to adjudicate.
- **Executive** function: ensures, first, that the disputing parties submit to adjudication in the first place, and second, that they actually comply with the settlement eventually reached through the judicial process.
- **Judicial** function: adjudicates disputes, deciding how a disagreement should be settled.

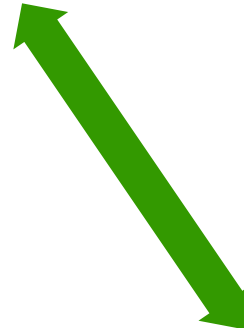
Checks and balances.

Source:Hildebrandt, M. (2019). 2. Law, Democracy, and the Rule of Law. In Law for Computer Scientists. <https://lawforcomputerscientists.pubpub.org/pub/hx1s8lbt>

Three branches of governance

CONSTITUTION

Legislature
(Parliament)



Executive
(Government, eg.
police)



Judiciary
(Courts)

Three branches of governance



Principles and rules

Principles are at a higher level of abstraction than rules. They form the background of legal rules and can be used to interpret, to complete or to correct legal rules.

Are all rules legal rules?

- $E=mc^2$
- The bishop may move as far as it wants, but only diagonally.
- It is not allowed to bring food and drinks into the lecture room.

Legal rules: Judge made (in verdict) or by legislator (in codes)

Sources

1. Treaties

- Treaties bind states that have signed and ratified them.

2. Legislation (including the Constitution)

- Imposes legal norms on those within the jurisdiction.

3. Case law / Judicial Decisions

- Made by courts.

4. Customary law

- In the absence of written law.

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Merve Oner Kabadayi

Law

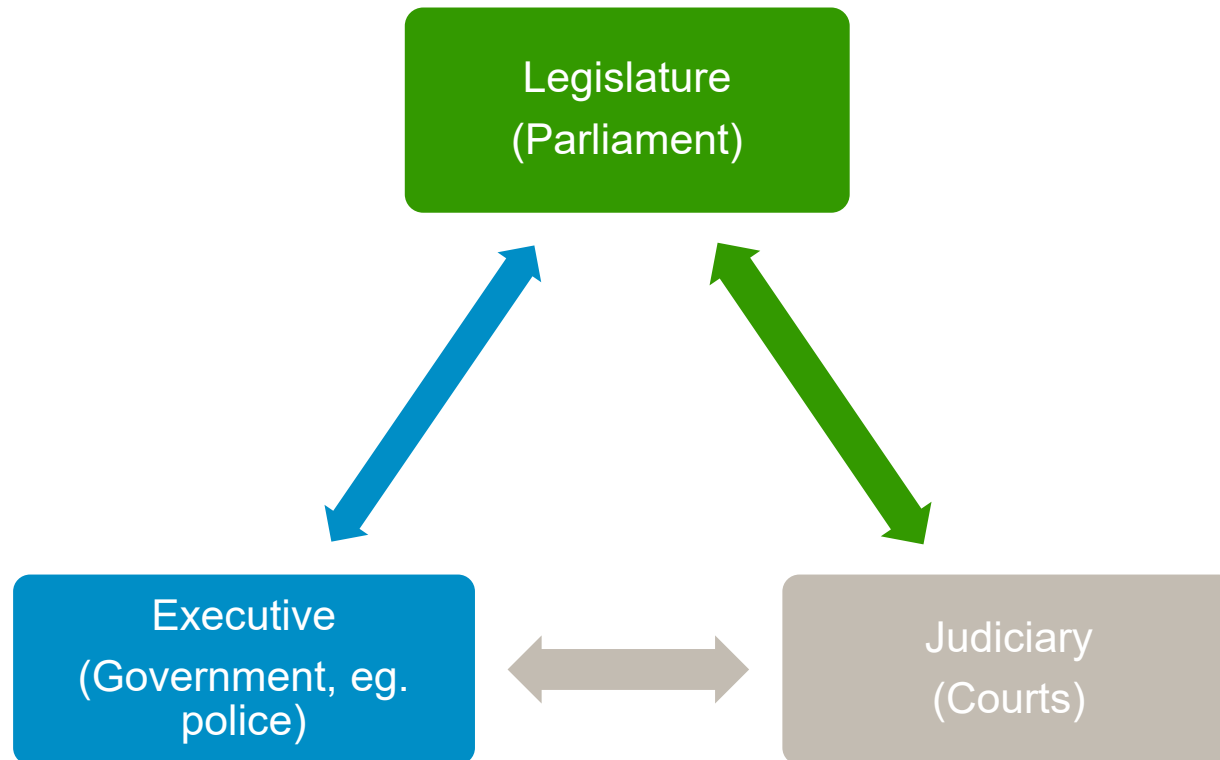
- Purposes and functions
- Principles and rules
- Sources and hierarchy
- Argumentation and legal reasoning
- International and EU law

Quick Recap 1

- Do you remember the purposes of law?
 - **establishing standards**
 - **maintaining order**
 - **resolving disputes**
 - **protecting liberties and rights**

Quick Recap 2

- How about the three functions within a state under the “rule of law”?



Sources

1. Treaties

- Treaties bind states that have signed and ratified them.

2. Legislation (including the Constitution)

- Imposes legal norms on those within the jurisdiction.

3. Case law / Judicial Decisions

- Both applying and interpreting the law.

4. Customary law

- In the absence of written law.

Legal domains

Private Law

Public Law

Criminal Law

Legal domains

- Different actors in different legal domains
E.g., Public prosecutor
- Different roles of same actor in different legal domains
E.g., active or passive role of a judge

Interpretation and Argumentation

Civil law system: Judge must apply the law

- The law needs to be interpreted....



Interpretation methods

- **Grammatical / linguistic interpretation**

literal meaning.

- **Historical interpretation:**

using the legislative history, to reveal the intent of the legislator.

- **Systematic interpretation:**

considering the broader context of the legal framework in which a provision is listed.

- **Teleological interpretation:**

focus on the purpose of the law

Argumentation

Judge must provide argumentation of the verdict:

Based on...

- Legal equality
- Legal certainty

Example

- Imagine you have a start up company that provides an online dating platform.
- To use the platform, users need to create a profile.
- However, the people have a tendency to “pimp their profile” and the research shows that people really like information regarding income and marital status to be correct on such dating profiles.
- SO, you wish to access a government database to verify these information so that you can provide feedback to users that at least certain information has been verified.
- It is taking too long to get access from government to the database but you have an acquaintance who has access to this system, so you decide to wait no longer, use his credentials and just scrape as much data you can and store it for later use.

Can you be liable for theft under Dutch law?

Theft in Dutch Law

Part XXII. Theft and Poaching

Section 310

Any person who takes **any property** belonging in **whole or in part to another person** with the **intention of unlawfully appropriating it**, shall be guilty of theft and shall be liable to a term of imprisonment not exceeding four years or a fine of the fourth category.

Theft in Dutch Law

Let's break it down.

- Property
- Belonging in whole or in part to another person
- Taking with the intention of unlawfully appropriating it.

Theft in Dutch Law

Part XXII. Theft and Poaching

Section 310

Any person who takes any property belonging in whole or in part to another person with the intention of unlawfully appropriating it, shall be guilty of theft and shall be liable to a term of imprisonment not exceeding four years or a fine of the fourth category.

What might be problematic in view of stealing data?

Article 3:1 Definition of ‘property’ as a legal object

‘Property’ (or ‘assets’) comprises of all things and all other property rights.

Article 3:2 Definition ‘things’

‘Things’ are tangible objects that can be controlled by humans.

Legal reasoning

- **analogy**; A similarity in some respects between things that are otherwise dissimilar (freedictionary.com)
- **a contrario**: From a contrary position (latin-dictionary.org)
 - denotes any proposition that is argued to be correct because it is not disproven by a certain case.

Analogy - Let's apply this...

Electricity & Source code

Electricity

- It exists in itself
- Can be stored in physical object
- Can be generated and distributed
- Can be consumed as desired
- Has value

Interpretation

310 Sr. **aims** to protect assets taken by unauthorised people, so electricity can be considered to be property.

Source code?

On the basis of the criteria for electricity it might be property/thing.

But: 310 Sr “take and appropriate” means:

The property must leave the possession of person A to come into possession of person B....

A Contrario

- If the legislator wished to say something, he would do so expressly
- Applied to the previous example

Grammatical / linguistic interpretation?

Applied to stealing data...

If stealing only occurs when the property leaves the possession of person A to come in possession of person B, and with data these also remain in the possession of person A, then the data have not been stolen.

This act (copying) is not regulated.

Since 2006 it has been regulated with the implementation of the Cybercrime Convention: s. 139c Dutch Criminal Code

Section 139c

Any person who intentionally and unlawfully intercepts or records by means of a technical device data which is not intended for him and is processed or transferred by means of telecommunication or by means of a computerised device or system, shall be liable to a term of imprisonment not exceeding one year or a fine of the fourth category.

Moving on...

International and EU Law



Before we get there: Jurisdiction

- The official power to make legal decisions and judgements.
- Case can have a different outcome depending on where the dispute arises.
- Very important to know which rules are applicable
- Not always easy in Internet environment:
 - Dematerialisation
 - Internationalisation

International Law



United Nations

PARIS CLIMATE AGREEMENT

- 

1. Limit the avg. global temperature increase to $< 2^{\circ}\text{C}$ centigrade + achieve net zero emissions by mid-century
- 

2. Enhance resilience and adaptation to climate impacts certain to occur
- 

3. Align financial flows in the world with these objectives

THE UNIVERSAL DECLARATION OF HUMAN RIGHTS

UDHR is a declaration adopted by the United Nations General Assembly on 10 December 1948 at Palais de Chaillot, Paris.



oegitos

COUNCIL OF EUROPE



CONSEIL DE L'EUROPE

EU law:

- Primary law: Treaties



- Secondary Law: Decision, Directive, Regulation (Recommendation, Opinion)

Directive vs. Regulation

“a directive is distinct from a decision or a regulation. While a regulation is applicable in Member States’ internal law immediately after its entry into force, a directive must first be transposed by the Member States. Thus, a directive does not contain the means of application; it only imposes on the Member States the requirement of a result. They are free to choose the form and the means for applying the directive.

“Furthermore, a directive also differs from a decision as it is a text with general application to all the Member States. Decision directed to addressees.”

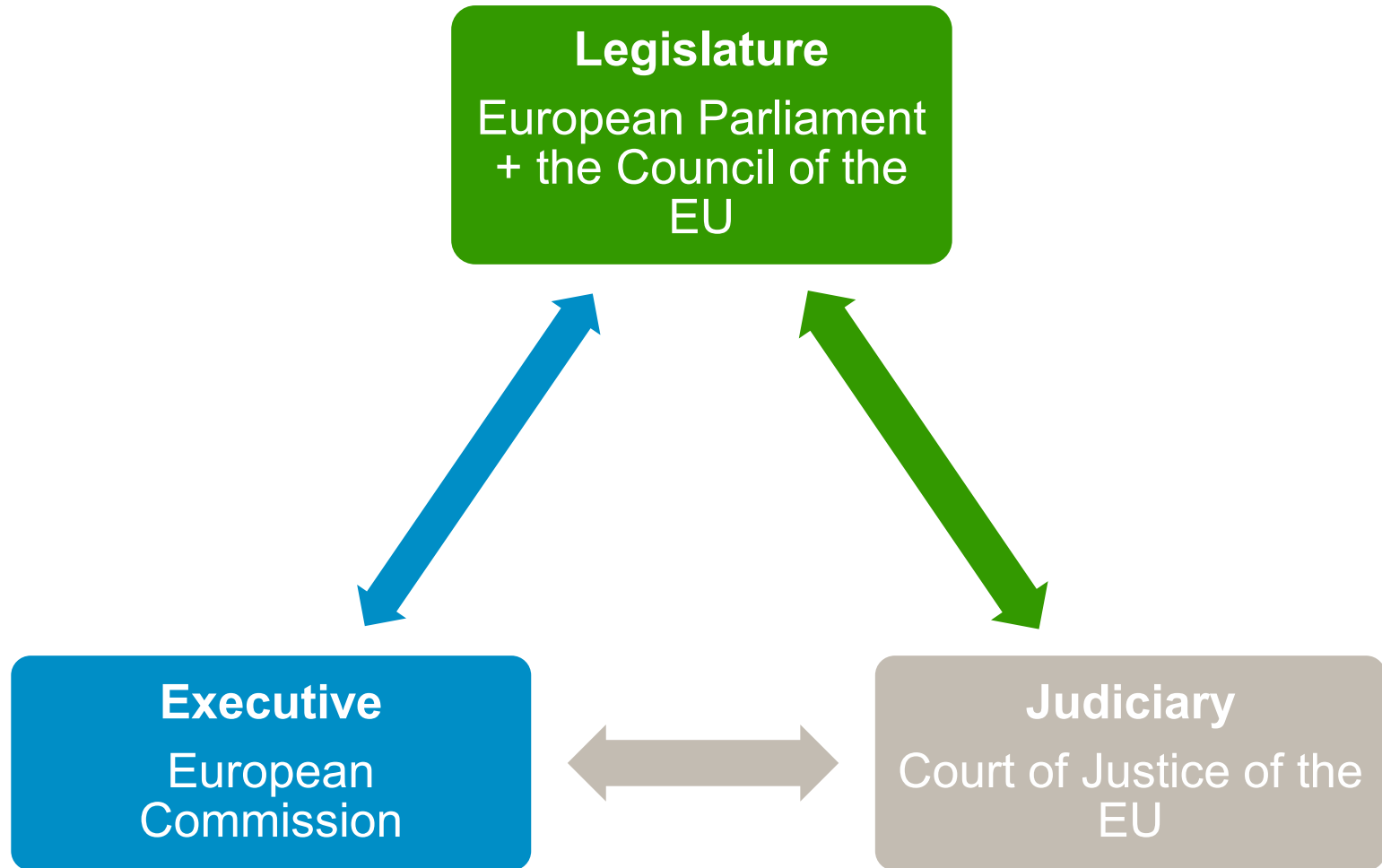
(since Treaty of Lisbon general has become the basic instrument in the field of the Common Foreign and Security Policy)

European Court of Justice: *curia.europa.eu*

Characteristics of the EU Institutional Structure

- 1) It is dynamic
- 2) It is based on the principle of conferral / principle of limited powers (Art 5 of the EU Treaty)
- 3) The powers of the EU institutions resemble the powers of a nation state, but they are not the same.
- 4) The institutional system of the EU is based on checks and balances.
- 5) There is a division between the (i) main structural institutions and (ii) functional institutions.

- Checks and balances in the EU



Council of Europe

The Council of Europe is the continent's leading human rights organisation.

It includes 47 member states, 28 of which are members of the European Union. All Council of Europe member states have signed up to the European Convention on Human Rights, a treaty designed to protect human rights, democracy and the rule of law.

The Council of Europe promotes human rights through international conventions, such as the Convention on Preventing and Combating Violence against Women and Domestic Violence and the Convention on Cybercrime.

The European Court of Human Rights oversees the implementation of the Convention in the member states. Individuals can bring complaints of human rights violations to the Strasbourg Court once all possibilities of appeal have been exhausted in the member state concerned.

European Court of Human Rights: [**hudoc.echr.coe.int**](http://hudoc.echr.coe.int)

Almost done...

Law vs Regulation

Is law the same as regulation?

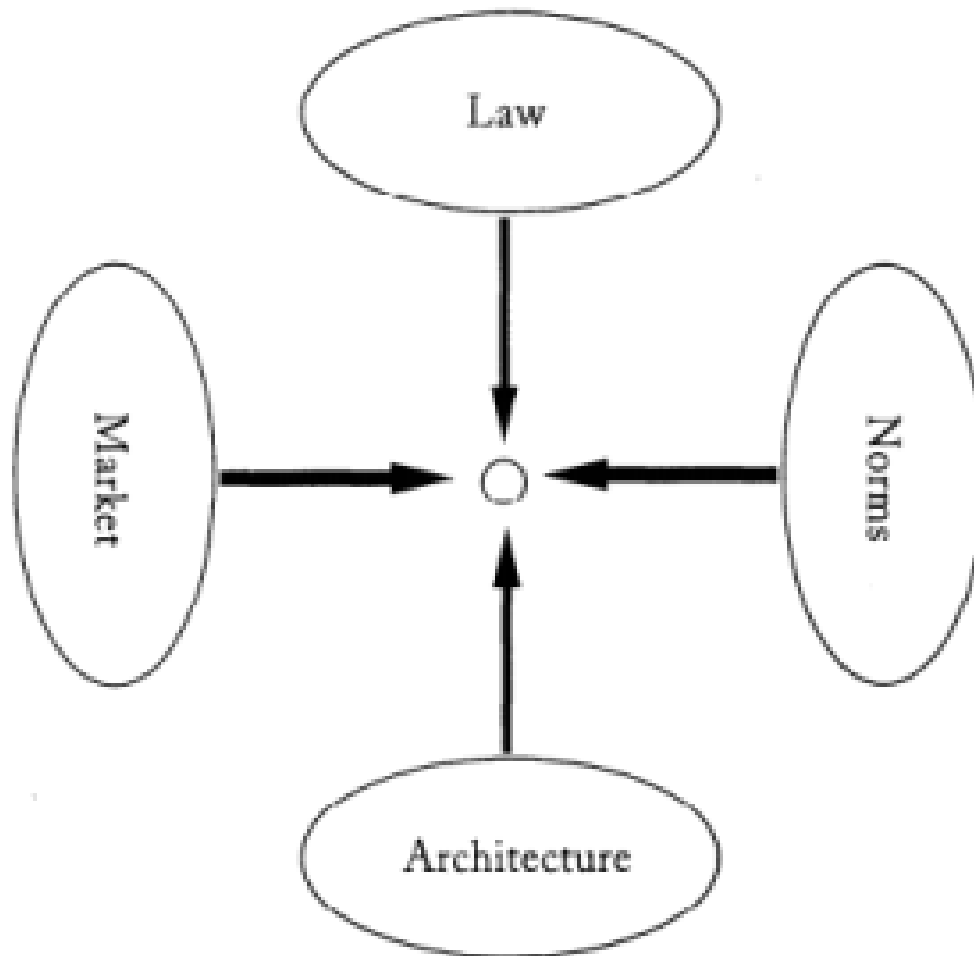
What is regulation?

“Regulation is the promulgation of rules by government accompanied by mechanisms of monitoring and enforcement”.

“The sustained and focused attempt to alter the behaviour of others according to standards or goals with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard-setting, information-gathering and behaviour-modification”.

How can we change behaviour?

- Lawrence Lessig: Four modalities of regulation



Examples?

Which modality?



Which modality?



Which modality?



Which modality?



- What about code?

Is code law? Is it architecture?

It regulates...

Example exam questions...

Example questions

1. Explain the 'three branches of governance' and the system of 'checks and balances' and use examples on how the Judiciary limits the powers (or provides accountability/oversight) of the Executive and the Legislature (Points: 15-20)

Model answer

- 3- branches: Legislature; executive and judiciary
 - Explain their respective functions.
- Judiciary vs legislature → Courts ensure that laws align (or do not conflict with) the Constitution/Courts interpret and apply the laws made by parliament.
- Judiciary vs executive → Courts decide on whether or not members of the executive act beyond scope of powers given to them (eg. Police using excessive force or not following procedures)/courts ensure that laws apply equally to people (even if a person is the head of a country such as President or Prime Minister, ie. everyone is equal before the law).

Example question 2

In the city center of DATAburg there is a nightlife street, with different clubs, pubs and other such social places. Usually, this street is very crowded each evening between Wednesday and Saturday, which normally means a good night out. However, due to increased alcohol consumption, issues of public order arise almost every night when it is crowded. This threatens the safety of the street and its surroundings. Therefore, the local government wants to intervene and prevent undesired behavior on that street through regulation.

Example question 2

- a. Explain and apply the modalities of regulation developed by Lessig in order to regulate behavior on the nightlife street, by providing one example of a measure **for each modality**. Ensure that you **explain** yourself by providing clear explanations. (12 points)
- b. What might be the advantages and disadvantages of each modality? (8 points)

Model answer

- a. *The four modalities must be mentioned (Architecture; Norms; Market and Law and then a specific example of each must be given. The example must also take into account the specific facts of the case, in other words it must be applicable.*
- b. *A valid advantage and disadvantage of the modalities must be given with regards to the given scenario.*