Catalogue des cours sélectionnés

1 : EXT50225 Electrodynamics (IOGS)
2 : EXT511PHY Fundamentals of Biology (ENS Cachan)
3 : EXT513PHY Introduction to microfluidics: fundamentals and applications (ENS Cachan)
4 : EXT512PHY Introduction to Nanophotonics : Physics, Materials, Characterization and Manipulation (ENS Cachan)
5 : EXT50204 Optique Non linéaire (IOGS)
6 : EXT50113 Physique des Semiconducteurs (IOGS)
7 : EXT50230 Physique Statistique (IOGS)
8 : ECO658 Political Economy
9 : ECO657 Théorie des choix collectifs en démocratie
10 : EXT50223 Travaux Pratiques (IOGS)

EXT50225 Electrodynamics (IOGS)

This course starts from the electrodynamics of continuous materials, and from there, capacitive and inductive structures, antennas, wave guides and lines are studied. By further assembling these structures, meta materials are considered.

Course given in common with: M1 Erasmus Mundus OpSciTech

Pour plus d'infos: http://paristech.iota.u-psud.fr/cours.php?id=51&langue=FR

Modalités d'évaluation
3h examen écrit

Lect: 18 h / PSS: 9 h

Responsable : Tiberiu Minea
Période : Hiver & Printemps
Nombre d'heures : 27
Crédits ECTS : 3
Dernière mise à jour : mercredi 18 mai 2011

EXT511PHY Fundamentals of Biology (ENS Cachan)

The aim of this course is to give to non-biologist students the basic concepts of modern biology which permit
full understanding of the relevant biological questions in Nanosciences topics.

Macromolecular structures (Lect, 6h)
Fundamentals of enzymology (Lect, 4h)
Introduction to the world of living beings (Lect, 2h)
Structure and main properties of plasmatic membranes (Lect, 2h)
Structure and main properties of mitochondria (Lect, 2h)
Transcription in bacteria (Lect, 2h)
Messenger mRNA biogenesis in eukaryotes (Lect, 2h)
Translation in bacteria and in eukaryotes (Lect, 2h)
DNA replication in bacteria and in eukaryotes (Lect, 2h)
DNA topology (Lect, 2h)
Random mutagenesis and its application to the study of a protein function (PPS, 4h)

Teachers: Dr B. Sclavi (LBPA / ENS Cachan), Pr C. Auclair#, Pr. U.Hazan#, Dr M.H. Kryszke#, Dr P. Rialland- Le Fèvre#, Dr G. Peyroche#. Some lectures are given by selected PhD students (all have obtained agregation).# Departement of biology, ENS Cachan.

Lectures (Lect) and problem solving sessions (PSS).
Course given in common with: master Erasmus mundus MONABIPHOT.
Maximum number of students: 25

Niveau requis
aucun pré-requis

Modalités d'évaluation
3h examen écrit sur les cours et des problèmes.

Responsable : Gérald Peyroche
Période : Hiver & Printemps
Nombre d'heures : 30
Crédits ECTS : 3
Dernière mise à jour : jeudi 21 avril 2011

513PHY Introduction to microfluidics: fundamentals and applications (ENS Cac

The aim of these lectures is to introduce fluid mechanics at the micro-scale to students, from fundamentals to applications. The recent development of Lab-on-a-chip requires a better understanding of flow properties at the microscale (to transport or mix chemical and biochemical substances) as well as finding technological solutions for traditional ‘macro-functionalities’ like valves, pumps, mixers …

Theoretical teaching

♦ Introduction : basic fluid mechanics; physics at the micro-scale
♦ Micro-hydrodynamic : hypothesis at the micro-scale, slippery effect at smooth surfaces, hydrodynamic résistance, hydrodynamic capacity, bottle neck effect, interfacial phenomena, diphasic flows.
♦ Diffusion, mixing and particle sorting in Microsystems.
♦ Electrohydrodynamic : electrokinetics, electroosmosis, electrophoresis, dielectrophoresis.
♦ Heat transfer and transport in Microsystems.
♦ Lab-on-a-chip examples.

Practical training

♦ Manufacturing of a micro-device
♦ Flow visualisation and study in the manufactured micro-device
♦ Dimensionnal analysis, scaling laws.
♦ Hydrodynamic resistance and slippery effect
♦ Electrohydrodynamic (electroosmosis, electrowetting)
♦ Heat transfer

Teachers: Dr O. Français (ENS-Cachan)
Course given in common with: Master Erasmus Mundus "Monabiphot"

Lect PSS/LW
15 h 15 h

Niveau requis
Solid-state physics, optics, ...

Modalités d'évaluation
Paper analysis

Période : Hiver & Printemps
Nombre d'heures : 30
Crédits ECTS : 3
Dernière mise à jour : jeudi 21 avril 2011

EXT512PHY Introduction to Nanophotonics : Physics, Materials, Characterization and Manipulation (ENS Cachan)

This course, which is devoted to Nanophotonics, covers both theoretical and practical aspects of the physical description, the fabrication and the characterization techniques of nano-objects and nanostructures for photonics.

Physics at the nanometric scale and applications to photonics :

1. Definitions and basics: state densities, bandgap structures, excitons
2. Quantum confinement
   a. 2D quantum confinement. Illustrations in semiconductor quantum wells
   b.1D quantum confinement. Illustrations in semiconductor quantum wires and carbon nanotubes
   c. 0D quantum confinement. Illustrations in self-assembled InAs/GaAs quantum dots and CdSe soft chemistry grown quantum dots.
3. Interaction between nano-objects and light.
   a. Absorption coefficient
   b. Emission properties
   c. Description of several optical experiments
   d. Analysis of the optical spectra

Instrumentation in nanophotonics and applications:

1. Structural microscopy techniques: electron microscopy (EM), atomic force microscopy (AFM), tunneling microscopy
2. Optical microscopy: luminescence, nonlinear effects (two-photon fluorescence, second and third harmonic generation, surface enhanced Raman scattering)
3. Nano-objects manipulation: AFM, optical tweezers
4. Application to Biology

Nanostructures for photonics: description and fabrication methods

1. “Top-down” elaboration techniques of nanostructures : photolithography, etching techniques. Electron and ion beam lithography.
2. STM and AFM techniques for the manipulation of nano-objects
3. Nanoparticles: preparation and functionalization : metallic colloids, semi-conductors, inorganic oxides,. latex
4. Bulk insertion and macroscopic organization
   a. solubilization: role of tensioactive molecules
   b. insertion in amorphous matrices
   c. self-organization

Teachers: Emmanuelle Deleporte, University Professor, LPQM, Institut d’Alembert, ENS Cachan
Isabelle Ledoux-Rak, University Professor, LPQM, Institut d’Alembert, ENS Cachan
Sophie Brasselet, CNRS Research scientist, Institut Fresnel, Marseille University
Prerequisites: Elements of statistical and quantum physics, and of material science
Course given by : Erasmus Mundus “MONABIPHOT” Master Course coordinated by ENS Cachan

Maximum number of students: 35

Niveau requis
Elements of statistical and quantum physics, and of material science

Modalités d'évaluation
4 h written exam

Période : Hiver & Printemps
Nombre d'heures : 50
Crédits ECTS : 5
Dernière mise à jour : jeudi 21 avril 2011

EXT50204 Optique Non linéaire (IOGS)

Since laser was invented, a new dimension was opened in optics, ushering in the non linear world with already numerous applications to light sources and optical processing of information. This course will introduce the students to this domain and enable them to fully master its innovative aspects. It describes the
physics of the non linear interaction between light and matter from a perturbation approach and shows its consequences on the propagation of optical waves. Its describes in detail the second and third order non linear effects rich in applications.

Course given in common with: M1 Erasmus Mundus OpSciTech

Pour plus d'infos : http://paristech.iota.u-psud.fr/cours.php?id=23

Modalités d'évaluation
3h examen écrit

Lect: 13.5 h / PSS: 7.5 h

Responsable : Nicolas Dubreuil
Période : Automne & Printemps
Nombre d'heures : 21
Crédits ECTS : 3
Dernière mise à jour : mercredi 18 mai 2011

EXT50113 Physique des Semiconducteurs (IOGS)

Ce cours expose les principes essentiels de la physique des semiconducteurs et la théorie des électrons dans les solides cristallins. Le but est de permettre une description simple du fonctionnement des composants optoélectroniques tels que la photodiode ou la diode laser, en s'appuyant sur les diagrammes de bandes énergétiques et les courants de porteurs.

Course given in common with: Master Erasmus Mundus OpSciTech (1st year) at Institut d'Optique

Pour plus d'infos : http://paristech.iota.u-psud.fr/cours.php?id=14

Niveau requis
Optique, Physique des lasers

Modalités d'évaluation
2h examen écrit

Lect: 21.5 h PSS:2.5 h LW: l h

Responsable : Gaëlle Lucas-Leclin
Période : Automne & Printemps
Nombre d'heures : 24
Crédits ECTS : 3
Dernière mise à jour : mercredi 18 mai 2011

EXT50230 Physique Statistique (IOGS)

L’objectif du cours est de fournir une introduction à la physique statistique.

Numerus Clausus: 45

Pour plus d'infos: http://paristech.iota.u-psud.fr/cours.php?id=101&langue=FR

Niveau requis
Introduction à la physique quantique

Modalités d'évaluation
3h examen écrit

Responsable : Jean-Jacques Greffet
Période : Hiver & Printemps
Nombre d'heures : 30
Crédits ECTS : 3
Dernière mise à jour : mercredi 18 mai 2011

ECO658 Political Economy

Description:

In a democracy, collective decisions are taken through political institutions which are, in principle, in charge of agregating the different opinions and the conflicting interests of the citizens.
Following this perspective, this course studies collective decision-making with the tools of modern economic analysis: formal theorizing and controlled experiments. We present both the prescriptive point view of Social Choice Theory and the descriptive models of political institutions and behavior.
The following themes wil be studied: The justification of majority rule and the Condorcet Jury theorem. The median voter theorem. The logical difficulties of collective decisionmaking. The classical Downsian electoral competition. The question of ideological positioning of the parties. The different voting rules and their consequences. Applications to fiscal decision, redistribution issues, and other socio-economic problems.
Required level : Elementary Microeconomics Evaluation : In class presentation of scientific papers. A list of possible topics with references will be provided .

0. Books

-Arrow, K. (1951) Social Choice and Individual Values.
-Downs, A. (1957) An Economic Theory of Democracy.
-Green, D. P. and Shapiro, I. (1994) Pathologies of Rational Choice Theory: A Critique of Applications in Political Science, New Haven, Yale University Press.
-Persson, T. and G. Tabellini (2000) Political Economics MIT Press.
-Laslier, JF (2004) Le vote et la règle majoritaire. Paris: éditions du CNRS, collection Science Politique.
-Grossman, Helpman (2001) Special Interest Politics, MIT Press
-Persson, T. and G. Tabellini (2003) The Economic Effects of Constitutions MIT Press.

1. Strategic Aspects of Information in Deliberation and Voting

[Les votes en comité et les élections de masse donnent lieu à des cascades informationnelles redoutables, qu'on peut bien mettre en évidence en laboratoire.]
Information Cascades in the Laboratory: Anderson and Holt American Economic Review 87:847-862 (1997).
-Information Cascades: Replication… Hung and Plott American Economic Review 91:1508-1520 (2001)
-Austen-Smith, D. and T. Feddersen (2005) "Deliberation and voting rules", pp. 269-316 in Social Choice and Strategic Decisions, edited by D. Austen-Smith and J. Duggan, Springer.
-Austen-Smith,D. and J.S.Banks (1996) Information Aggregation, Rationality and the Condorcet Jury ---Theorem" American Political Science Review, Vol. 90, No.1, pp. 34-45.
-Austen-Smith, D. and T. Feddersen (2006) Deliberation, Preference Uncertainty and Voting Rules" American Political Science Review, Vol. 100, No. 2, 209-218.
-Jackson, M.O. (2008) "Disclosure, Deliberation, and Voting in Committees" mimeo.
-Young, H.P. and A. Levenglick (1978) A Consistent Extension of Condorcet's Election Principle" SIAM Journal of Applied Mathematics, Part C, Vol. 35, No. 2, pp. 283-300.

2. Condorcet Jury Theorem and Committee design

-Austen-Smith, David and Jeffrey S. Banks (1996), "Information aggregation, rationality, and the Condorcet jury theorem." American Political Science Review, 90, 34–45.
-Feddersen, Timothy and Wolfgang Pesendorfer (1997), "Voting behavior and information aggregation in elections with private information." Econometrica, 65, 1029–1058.
-Feddersen, Timothy and Wolfgang Pesendorfer (1998), "Convicting the innocent: The inferiority of unanimous jury verdicts under strategic voting." American Political Science Review, 92, 23–35.
-Gerardi, Dino and Leeat Yariv (2008), "Information acquisition in committees." Games and Economic Behavior, 62, 436–459.
-Koriyama, Yukio and Balazs Szentes (2009), "A resurrection of the Condorcet Jury Theorem." Theoretical Economics, 4, 227-252
-Laslier, Jean-François and Jorgen Weibull (2009), "The Concorcet jury theorem and preference heterogeneity." working paper
-Li, Hao (2001), "A theory of conservatism." Journal of Political Economy, 109, 617–636.
Martinelli, César (2006), "Would rational voters acquire costly information?" Journal of Economic Theory, 129, 225–251.
-Martinelli, César (2007), "Rational ignorance and voting behavior." International Journal of Game Theory, 35, 315–335.
-Myerson, Roger B. (1998), "Extended Poisson games and the Condorcet jury theorem." Games and Economic Behavior, 25, 111–131.
-Persico, Nicola (2004), "Committee design with endogenous information." Review of Economic Studies, 71, 165–191.

3. Parliamentary Political Space: Descriptive applications of Theory of Spatial Voting

-La référence incontournable est le site de Keith Poole à l'U. C. San Diego :
http://polisci.ucsd.edu/faculty/poole.htm

De nombreux articles y sont disponibles, ainsi que des données sur longue période et des logiciels d'analyse, à propos de la question suivante : comment positionner les membres du congrès américain (et

les partis) dans un « espace politique » à partir de l'observation de leurs votes et affiliations ?

4. Negociation and Haggling in Legislatures

-L'article célèbre: de D.Baron et J. Ferejohn, "Bargaining in Legislatures", American Political Science Review 83 :1181-1206 (1989), a une nombreuse descendance théorique et le modèle a donné lieu à des expériences de laboratoire.
-Banks, J. and J. Duggan (2000) "A bargaining model of collective choice" American Political Science Review 94:73-88
-Diermeier, D. and R. Morton "Experiments in Majoritarian Bargaining" , pp. 201-226 in Social Choice and Strategic Decisions, edited by D. Austen-Smith and J. Duggan, Springer, 2005.

5. Vote Buying and Lobbying

-Groseclose, T. and J.M. Snyder, Jr. (1996) "Buying Supermajorities" American Political Science Review, Vol. 90, No. 2, pp. 303-15.
-Dekel, E., M.O. Jackson, and A. Wolinsky (2008) "Vote Buying: General Elections," Journal of Political Economy
-Jackson, M.O. and H.F. Sonnenschein (2007) "Overcoming Incentive Constraints by Linking Decisions" Econometrica, Vol. 75, No. 1, pp. 241-257.
-Grossman, G. and E. Helpmann (1996) "Electoral Competition and special interest politics" Review of Economic Studies 63: 265-286.
-Persson, T. (1998) "Economic Policy and Special Interest Politics" Economic Journal 108: 310-327.

6. Participation

-André Blais, To Vote Or Not To Vote? The Merits and Limits of Rational Choice, Pittsburgh, University of Pittsburgh Press, 2000.
-Palfrey, Thomas R. and Howard Rosenthal 1985. "Voter Participation and Strategic Uncertainty," American Political Science Review, 79, 62–78.
-Schram, Arthur & Sonnemans, Joep, 1996. "Why people vote: Experimental evidence," Journal of Economic Psychology, Elsevier, vol. 17(4), pages 417-442,
-Schram, Arthur & Sonnemans, Joep, 1996. "Voter Turnout as a Participation Game: An Experimental Investigation" International Journal of Game Theory, vol. 25(3), pages 385-406
-Jens Großer & Arthur Schram, 2007. "Public Opinion Polls, Voter Turnout, and Welfare: An Experimental Study," Labsi Experimental Economics Laboratory University of Siena 014, University of Siena.
-Gerber, Alan S., and Donald P. Green, and Christopher W. Larimer. 2008. Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment. American Political Science Review 102(1): 33-48

7. Voting Rule: Classical Theory

-P. C. Fishburn (2002) Handbook of Social Choice and Welfare Chap 4.
-H. Moulin (1989) Axioms of Cooperative Decision Making. Cambridge UP

8. Voting Rule: Experiments

-Forsythe, R., T. A. Rietz, R. Myerson and R. J. Weber (1993) "An Experiment on Coordination in Multicandidate Elections: the Importance of Polls and Election Histories," Social Choice and Welfare 10: 223-247
-Forsythe, R., T. A. Rietz, R. Myerson and R. J. Weber (1996) ``An Experimental Study of Voting Rules and

Polls in Three-Way Elections" International Journal of Game Theory, 25: 355-383.
A. Blais, JF. Laslier, N. Sauger and K. Van der Straeten (2008) “Sincere, strategic or heuristics” mimeo.

9. Strategic Candidacy

-Besley, T. and S. Coate (1997) An Economic Model of Representative Democracy," Quarterly Journal of Economics, Vol. 112, No.1, pp. 85-114.
-Dutta, B., M.O. Jackson and M. Le Breton (2001) “Strategic Candidacy and Voting Procedures” Econometrica, Vol. 69, No.4, pp. 1013-1037.
-Dutta, B., M.O. Jackson and M. Le Breton (2002) “Voting by Successive Elimination and Strategic Candidacy” Journal of Economic Theory, Vol. 103, No. 1, pp.190-218.

10. Qualified Majority Voting Rules in European Union and Measurement of Power

-Quelles pondérations et quels seuils sont souhaitables pour l’Union Européenne ? Les systèmes proposés favorisent-t-ils les grands ou les petits pays ?
-D. Felsenthal et M. Machover (1998), The Measurement of Voting Power. Theory and practice, problems and paradoxes, Cheltenham: Edward Elgar.
-L.S. Penrose (1946) “The elementary statistics of majority voting” Journal of the Royal Statistical Society 109(1), 53-57
-S. Barberà and M.O. Jackson (2006) “On the Weights of Nations: Assigning Voting Weights in a Heterogeneous Union” Journal of Political Economy 114(2), 317-339
-C. Beisbart and L Bovens (2007) “Welfarist evaluations of decision rules for boards of representatives” Social Choice and Welfare 29, 581-608
-C. Beisbart and S. Hartmann (2010) “Welfarist evaluations of decision rules under interstate utility dependencies” Social Choice and Welfare 34, 315-344
-D. Felsenthal and M. Machover (1999) “Minimizing the mean majority deficit: The second square-root rule” Mathematical Social Sciences 37, 25-37
-G. Owen (2007) Game Theory (3rd Edition) JAI Press, Chapter XII
M.A. Cichocki and K. Życzkowski ed. (2010) Institutional Design and Voting Power in the European Union, Ashgate
-A. Laruelle and F. Valenciano (2008) Voting and Collective Decision-Making. Cambridge Univ. Press
-N. Maaser and S. Napel (2007) “Equal representation in two-tier voting systems” Social Choice and Welfare 28, 401-420
-M. Le Breton, M. Montero and V. Zaporozhets (2011) “Voting Power in the EU Council of Ministers and Fair Decision Making in Distributive Politics” mimeo.
Voir le site du programme “Voting Power and Procedures” de la London School of Economics: http://www.lse.ac.uk/collections/VPP/

11. Political Economy and Redistribution

Un sujet classique pour l’économie publique. Peut-on, par exemple, expliquer la progressivité affichée des taux de taxe ou les programmes de soutien aux minorités défavorisées par la compétition électorale entre partis politiques ?

-Linbeck, A. and J. Weibull (1987) “Budget-balanced redistribution and the outcome of political competition” Public Choice 52:273-297.
-J.E. Roemer (1999) The democratic political economy of progressive income taxation, Econometrica 67 : 1–19.
-Lizzeri, A., and N. Persico (2001) The provision of public goods under alternative electoral systems, American Economic. Review 91 : 225–239.

-E.F. Klor (2003) “On the popular support for progressive taxation” Journal of Public Economic Theory 5 : 593–604.
-De Donder, Ph. et J. Hindrix (2004) “Progressive income taxation with corner preferences” Public Choice 118 :437-449.
-Carbonell-Nicolau, O. and E. Ok (2004) “Multidimensional income taxation and electoral competition : an equilibrium analysis” mimeo. Publié comme: “Voting over income taxation” Journal of Economic Theory, 134, 249-286, 2007

12. Political Economy of Environment

-Cremer, H., P. de Donder and F. Gahvari, «Political Sustainability and the Design of Environmental Taxes», International Tax and Public Finance, vol. 11, n. 6, novembre 2004, p. 703-719
-Cremer, DeDonder and F. Gahvari “Evironmental taxes and majority voting”
-Cremer, H., P. de Donder and F. Gahvari, «Taxes, Budgetary Rule and Majority Voting», Public Choice, vol. 119, n. 3-4, juin 2004, p. 335-358.

13. Political Economy of Immigration

-Ortega (2005) Immigration quotas and Skill upgrading, Journal of Public Economics.
-Benhabib (1996) “On the political Economy of Immigration” European Economic Review 40.
-Jehiel and Scotchmer (2001) Constitutional rules of exclusion in jurisdiction formation, Review of Economic Studies

14. Political Economy of Xenophobia

-J. Roemer (2001) Political Competition Harvard University Press
-J. Roemer et K. Van der Straeten (2004) « Xenophobia and distribution in France : A politico-economic analysis » document de travail du Laboratoire d’Econométrie de l’Ecole polytechnique n° 2004-22
-J. Roemer, W. Lee, and K. Van der Straeten (2007) Racism, Xenophobia and Distribution, Harvard University Press.

15. Experimental Economy of Trust and Segregation

-Fershtman and U. Gneezy (2001) “Discrimination in a segmented society: and experimental approach” Quarterly Journal of Economics 116: 351-377
-F. Bornhorst, A. Ichino, K. Schlag and E Winter (2004) “Trust and trustworthiness among Europeans: South-North comparison”, Department of Economics, European University Institute in Florence
-Weimann, J. (1994) Individual behaviour in free-riding experiments Journal Public Econ 54: 185-200.
-Burlando, R. and J. Hey (1997) Do Anglo-Saxons free-ride more ? Journal of Public Econ 64: 41-60.
-Justine Burns (2006) Racial stereotypes, stigma and trust in post-apartheid South-Africa, Economic Modelling, Volume 23, Issue 5, September 2006, Pages 805-821
-R. Boarini, JF Laslier and S Robin (2009) “Interpersonal comparison of utility in bargaining: Evidence from a Transcontinental Ultimatum Game” Theory and Decision, 67(4): 341-373.

16. Formal Collective Institutions and Cooperative Behavior

-Ch. Vanberg (2008) “Voting on a sharing norm in a dictator game” et voir les références dans ce papier expérimental récent.

17. Rational Behavior under Uncertainty and Utilitarianism

-Harsanyi (1955) “Cardinal welfare, individualistic ethics, and interpersonal comparisons of utility” Journal of Political Economy 63: 309-321
-P. Diamond (1967) “Cardinal welfare, individualistic ethics, and interpersonal comparisons of utility: Comment” Journal of Political Economy 75: 765-766
-J. Weymark (1991) “A reconsideration of the Harsanyi-Sen debate on utilitarianism” pp. 254-320 in Interpersonal Comparisons of Well-Being, edited by J. Elster and J. Roemer, Cambridge University Press
-J. Roemer (1996) Theories of Distributive Justice Harvard University Press, (en particulier le chapitre 4)

Responsable : Jean-François Laslier, Yukio Koriyama
Période : Hiver & Printemps
Nombre d'heures : 36
Crédits ECTS : 3
Dernière mise à jour : mercredi 07 mars 2012

ECO657 Théorie des choix collectifs en démocratie

Dans une société démocratique, certaines décisions sont prises collectivement. Ces décisions reviennent aux institutions politiques chargées d'agréger les opinions ou les intérêts, éventuellement contradictoires, des citoyens. Dans cette perspective, le cours présente l'approche économique de la décision collective, du point de vue normatif de la théorie du Choix Social et du point de vue positif des modèles descriptifs de la décision politique.
La première partie du cours expose les résultats et la seconde discute les apports de ces théories à la réflexion sur le choix de quelques politiques économiques majeures (fiscalité, redistribution, environnement) ou sur la comparaison de divers régimes politiques ou systèmes électoraux.

Les thèmes suivants sont notamment abordés : la justification de la règle majoritaire et théorème du jury de Condorcet ; les difficultés logiques de la décision collective et le théorème d'Arrow ; quelques modèles de la compétition électorale ; les déterminants du vote, intérêt individuel et jugements de valeur ; le théorème de l'électeur médian et ses applications socio-économiques ; la question du positionnement idéologique des partis ; le rôle des groupes de pression ; les différents modes de scrutin : scrutin uninominal à un et à deux tours, règle de Borda, vote par approbation.

Une partie du cours est rédigée dans :
Jean-François Laslier « Le vote et la règle majoritaire. Analyse mathématique de la politique », Paris :

CNRS-éditions, 2004.
http://www.eyrolles.com/Droit/Livre/9782271062659/livre-le-vote-et-la-regle-majoritaire.php?xd=8e2a08c78a3fc66502cbffcc02cb5545

Quelques exercices et compléments sont téléchargeables sur le site :
http://sites.google.com/site/jflaslierhomepage/Home

Bibliographie générale

Arrow, K. Social Choice and Individual Values, Wiley : New York 1952.
Downs, A. An Economic Theory of Democracy, Harper : New York 1957.
Mueller, D. Public Choice II, Cambridge UP : Cambridge 1989.
Ordeshook, P. Game Theory and Political Theory, Cambridge UP : Cambridge 1986.
Roemer, J. Political Competition, Harvard UP : Cambridge 2001.

Bibliographie par séance

Séance 1: Justification de la règle majoritaire et théorème du jury de Condorcet
(JFL chap. 2)

David Austen-Smith and Jeffrey S. Banks (1996), "Information Aggregation, Rationality, and the Condorcet Jury Theorem", American Political Science Review.
Timothy J. Feddersen and Wolfgang Pesendorfer (1998), "Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting", APSR.
Laslier et Van der Straeten, « Electoral competition, information and a strategic electorate», 2004, Economic Theory, 24, 419-446
Heidhues, Paul & Lagerlof, Johan, 2003. "Hiding information in electoral competition," Games and Economic Behavior, vol. 42(1), pages 48-74, January.

Séance 2 : le théorème de l'électeur médian et ses applications socio-économiques (1)
(JFL chap. 3)

Black, Duncan. 1948. On the Rationale of Group Decision Making. Journal of Political Economy 22-34.
Hotelling, H., 1929, Stability in Competition, Economic Journal

Séance 3 : le théorème de l'électeur médian et ses applications socio-économiques (2)
(JFL chaps. S,4,6.1)

Roberts, K.W.S., 1977. Voting over income tax schedules. Journal of Public Economics 8, pp. 329–340.
Laslier, Trannoy et Van der Straeten, « Voting under ignorance of job skills of unemployed: the overtaxation bias », 2003, Journal of Public Economics, 87, 595-626

Séance 4 : Comparaison des modes de scrutin

Martin, P., 1997, "Les systèmes électoraux et les modes de scrutin", Montchretien, Coll.Clefs.
Myerson, Roger. 1993. "Incentives to cultivate favored minorities under alternative electoral systems." American Political Science Review 87:856-869.
Laslier, J.-F. et K Van der Straeten, 2008, « Approval voting in the French 2002 presidential election: A live experiment », Experimental Economics, vol. 11, p. 97-105.
Blais, Laslier, Sauger et Van der Straeten, “Strategic, sincere and heuristic Voting under for voting rules: An

experimental study", Social Choice and Welfare, 2010.

Séance 5 : les difficultés logiques de la décision collective et le théorème d'Arrow

McKelvey, Richard. 1979. "General Conditions of Global Intransitivities in Formal Voting Games." Econometrica, 47: 1085-1111.
Plott, Charles R., and Michael E. Levine. 1978. A Model of Agenda Influence on Committee Decisions. American Economic Review 68:146-60.
Lee, Roemer et Van der Straeten, Racism, Xenophobia and Distribution, A Study of Multiissue Politics in Advanced Democracies, 2007, Harvard University Press & Russell Sage Foundation Press, chapitre 1.

Séances 6, 7 & 8 : Compléments sur thèmes variés (institutions et corruption, lobbying et groupes d'intérêts, sondages et élections, …) + Présentation d'étudiants

Choix collectif en démocratie, 2010

Quelques exemples de thèmes ayant donné lieu, ou pouvant donner lieu, à des exposés ou des mémoires de la part des élèves.

1. Aspects stratégiques de l'information dans les débats et les votes.
Les votes en comité et les élections de masse donnent lieu à des cascades informationnelles redoutables, qu'on peut bien mettre en évidence en laboratoire.
Information Cascades in the Laboratory: Anderson et Holt American Economic Review 87:847-862 (1997).
Information Cascades: Replication… Hung et Plott American Economic Review 91:1508-1520 (2001)
Austen-Smith, D. and T. Feddersen "Deliberation and voting rules", pp. 269-316 in Social Choice and Strategic Decisions, edited by D. Austen-Smith and J. Duggan, Springer, 2005.

2. Vote et Asymétries d'Information.
Comment voter rationnellement en présence d'asymétries d'information ? Est-il rationnel de voter lorsqu'on est moins informé qu'autrui ? A quelles conditions une élection permet-elle d'agréger une information éparpillée parmi l'électorat ? Peut-on s'en servir pour comparer différentes règles de vote ?

David Austen-Smith and Jeffrey S. Banks (1996), "Information Aggregation, Rationality, and the Condorcet Jury Theorem", American Political Science Review.
Timothy J. Feddersen and Wolfgang Pesendorfer (1996) "The Swing Voter's Curse," American Economic Review, 86, 3, 408-424.
Timothy J. Feddersen and Wolfgang Pesendorfer (1997), "Voting Behavior and Information Aggregation in Elections with Private Information," Econometrica, 65, 5, 1029-1058.
Timothy J. Feddersen and Wolfgang Pesendorfer (1998), "Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting", American Political Science Review.
Bond and Eraslan (2010), "Strategic Voting over Strategic Proposals," Review of Economic Studies, 77, 2, 459-490.

3. Débats et Délibérations

Austen-Smith, D. and T. Feddersen (2006) "Deliberation, Preference Uncertainty and Voting Rule," American Political Science Review, 100, 2, 209-218.
Austen-Smith, D. and T. Feddersen "Deliberation and voting rules", pp. 269-316 in Social Choice and Strategic Decisions, edited by D. Austen-Smith and J. Duggan, Springer, 2005.

Gerardi and Yariv (2007) “Deliberative Voting,” Journal of Economic Theory, 134,1, 317-338.

4. L’espace politique parlementaire : applications descriptives des théories spatiales du vote.
La référence incontournable est le site de Keith Poole à l’U. C. San Diego :
http://polisci.ucsd.edu/faculty/poole.htm
De nombreux articles y sont disponibles, ainsi que des données sur longue période et des logiciels d’analyse, à propos de la question suivante : comment positionner les membres du congrès américain (et les partis) dans un « espace politique » à partir de l’observation de leurs votes et affiliations ?

5. Négociation et marchandage dans les assemblées.

Niveau requis
Eléments de Microéconomie

Modalités d'évaluation
Exposés et rédaction de petits mémoires

Responsable : Jean-François Laslier, Eduardo Perez
Période : Printemps
Nombre d'heures : 24
Crédits ECTS : 3
Dernière mise à jour : mercredi 07 mars 2012

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