



## PHYS2290 Quantum mechanics

[30h+22.5h exercises] 6 credits

This course is taught in the 1st semester

**Teacher(s):** Jacques Weyers  
**Language:** French  
**Level:** Second cycle

### Aims

This course for students who already received an introduction to quantum ideas and to 1D wave mechanics will include a systematic exposition to non-relativist quantum mechanics, - who establishes it on strong but not too formal theoretical bases and - that offer a tool useful for the study of fields like atomic and molecular physics, nuclear and solid state physics.

### Main themes

- Wave mechanics : principals, Schrödinger equation, example
- Quantum mechanics : principals; quantum dynamics, symmetry
- Disturbance theory

### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Students concerned: mandatory in PHYS21, optional in MATH21.

Prerequisites: General physics II, 2nd part: Quantum, PHYS 1130 - Mathematical methods of physics II, PHYS 1143.

Support: This course is based on the book of E. Merzbacher, Quantum Mechanics, J. Wiley, N.Y. (1970), chapters 4, 8-10, 12-18. DIRAC P., The principles of quantum mechanics, 4th edition, Oxford, 1967. PAIS A., Inward Bound of Matter and Forces in the Physical World, Oxford, 1986. GALINDO A., PASCUAL P., Quantum Mechanics I, Springer Verlag, 1990. GALINDO A., PASCUAL P., Quantum Mechanics II, Springer Verlag, 1991. GASIROWICZ S., Quantum Physics, Wiley, 1974. MANDL F., Quantum Mechanics, Wiley, 1992.

### Other credits in programs

<b>MATH22/G</b>	Deuxième licence en sciences mathématiques	(6 credits)	
<b>PHYS21/A</b>	Première licence en sciences physiques (Physique appliquée)	(6 credits)	Mandatory
<b>PHYS21/G</b>	Première licence en sciences physiques	(6 credits)	Mandatory
<b>PHYS21/T</b>	Première licence en sciences physiques (Physique de la terre, de l'espace et du climat)	(6 credits)	