Quantum Number	Range of Its Values	Relevance to Periodic Table	Relevance to Electrons in Atom	Importance in Chemistry
n	Integer values 1 to 7	Correspond roughly to the period in the PT	The "shells", the energy levels in the atom	Electrons with different n have different energies: when electrons go from ground state to excited state, these are transitions between different n levels
l	Integer values 0 to 3	Account for the patterns seen in the groups of the Periodic Table: s-block, p-block, d-block, f-block	The "subshells": there are intrashell energy differences that explain how orbitals are filled with electrons, but they are small compared to n-n transitions	Explains how electrons are filled within a shell (set by ***n***) and which give elements their special chemistry within these blocks (*s*, *p*, *d*, and *f*)
m_l, m_s	Do not struggle with these. These are more for chem major students			

l value	Orbital type	# orbitals this type	Orbital geometric shape	Total # electrons in this type*	Groups covered in Periodic Table
0	***s***	1	Spherical	2	1-2
1	***p***	3	Bilobed ("dumbbell" or peanut-shaped	6	13-18
2	***d***	5	Four bilobed "cloverleaf" and one bilobed with ring/torus	10	3-12
3	***f***	7	generally multi-lobed or cloverleaf-like, some with a doughnut-shaped ring. Are the most complex orbital shapes	14	Considered "inner transition" metal elements, not really covered by numbered Groups in table
* total electrons = number of the orbital type (3rd column) times two electrons per orbital					

ATOMIC ORBITAL ENERGY LEVELS