(Lesson Plan)

MCM DAV College for Women, Sector – 36A,
Chandigarh Monthly Teaching Plans (*Odd-Semester*)
Session–(2022-23)

Name of the Teacher: **Dr. Kulwinder Kaur**

Department: **Physics**

Class: **B.Sc(III Hons)**

Subject: **CProgrammingLanguage**

Section(s):   **Hons.**

S.No.	Date (Monthly)		TopicsCovered	Academic ActivityUndertaken*
	From	**To**		
1	11ˢᵗ August ,2022	15 September,2022	✓ Data and Statements: Data Types. ✓ Constants and Variables. ✓ Mathematical, Relational, Logical and Bitwise Operators. Expressions and Statements.	✓ **Lecture usingboardinclassroom** ✓ **Visualcode demo** ✓ **Discussions**
	DepartmentalMeetingto CoordinateandReviewtheMonthlycompletionofSyllabusasperlessonplans			
2	16ᵗʰ September,2022	30ᵗʰ September,2022	✓ Control Statements: - If-statement. If-else Statement. Nested if Structure. Else-if Statement. ✓ Ternary Operator. Go to Statement. Switch Statement. Unconditional and Conditional Looping. While Loop. Do-while Loop. For Loop. ✓ Break and Continue Statements. ✓ Nested Loops.	✓ **Lecture using black board** ✓ **Group Discussions** ✓ **Visual code demo**
	DepartmentalMeetingto CoordinateandReviewtheMonthlycompletionofSyllabusasperlessonplans			

3	1st October,2022	31st October,2022	✓ Arrays and Structures:- One and Two Dimensional Arrays. ✓ Idea of Structures ✓ Strings and Pointers ✓ Functions: Standard Library Functions and ✓ User-defined Functions. ✓ Functions returningValues. ✓ Function Prototypes. ✓ Function Call by Value and by Reference. ✓ Recursion.	✓ **Lecture(usingboard and pptmode inclassroom,** ✓ **Assignments**
Departmental Meeting to Coordinate and ReviewtheMonthlycompletionofSyllabusasperlessonplans				
4	1st Nov,2022	25th Nov,2022	✓ Block, Local and Global variables. ✓ Auto, Static and External Variables. ✓ I/O Statements: printf, scanf, getc, getch, getchar,getche, etc. ✓ Practical Programming(9programs)	✓ **Lecture using board pptmode inclasssroom** ✓ **Group Discussions**
DepartmentalMeetingto CoordinateandReviewtheMonthlycompletionofSyllabusasperlessonplans				

*Anyofthese – (i)LectureMethod;(ii)PPT;(iii)OnlineSources;(iv)Group Discussion;(v)CaseStudiesetc.

OtherMethodsadoptedby theteacher–Pleasewritethespecificteachingmethod

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, ChandigarhMonthly Teaching Plans (Odd Semester/Even Semester) Session – (2022-23)

<u>Odd Semester</u>

<u>Name of the teacher: Dr. Pallavi Gupta and Dr. R. Ridhi</u>

Department: <u>Physics Department</u>

<u>Paper V</u>

Class: <u>B.Sc. III Hons.</u>   Subject: <u>Physics of Semiconductors</u>

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	**To**		
1	11/08/2022	31/08/2022	Semiconductor materials, Crystal lattices, Ge and Si crystal structure, production of electronic grade Si, Bulk crystal growth, Epitaxial growth, Bonding forces and energy bands in solids, Metals, semiconductors and insulators, Direct and Indirect semiconductors, intrinsic and extrinsic semiconductors, compensation	Lecture, Online Sources, PPT, Group Discussion
2	01/09/2022	30/09/2022	Electrons and holes, effective mass, Fermi level, Conductivity and mobility, temperature dependence of Carrier concentration, effect of temperature, doping and field on mobility, Hall effect, Invariance of Fermi level at equilibrium. Excess carriers in semiconductors: Optical absorption, Photoluminescence, Electroluminescence, Carrier lifetime and	Lecture Method Method (Blended Form), Online Sources, Group Discussion

			photoconductivity, photoconductive devices	
3	01/10/2022	31/10/2022	Diffusion and drift of carriers: Einstein relation, built-in fields in semiconductors with different doping profiles, energy band diagrams, Steady state carrier injection, diffusion length, Haynes-Shockley experiment (qualitative discussion). pn junction energy band diagrams, forward and reverse-biased junction, calculation of contact potential and depletion width in abrupt junction	Lecture Method Method (Blended Form), Online Sources, Group Discussion
4.	01/11/2022	25/11/2022	Diffusion and drift currents, Reverse-bias breakdown, Zener and Avalanche diode. Diffusion and depletion capacitance of pn junction, varactors, Metal-semiconductor contacts, energy band diagrams of ohmic and rectifying contacts, Schottky diodes	Band diagrams demonstrations through picture charts and online presentations, Group discussions and doubts sessions.

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc. Other Methods adopted by the teacher Band diagrams pictures demonstrated through charts and ppts

MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans (Even Semester) Session – (2022-23)

Even Semester

Name of the Teacher: Dr. R. Ridhi

Department: Physics

Paper VII

Class: B.Sc. III Hons.   **Subject: Nuclear Radiations and Detection**

S.No.	Date** (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	**To**		
1	16/01/2023	12/02/2023	**Radioactive decays**: Alpha decay, β - , β+ and EC decays, Radioactivity units, gamma rays, Internal conversion, X-rays, Auger electron, Bremesstrahlung, Annhilation radiation. **Neutron sources**- fission, radioisotope based sources and photoneutron sources, Accelerator based sources. **Radiation Interactions**: Interaction of light and heavy Charged Particles, Stopping power, energy and range straggling.	PPT, Lecture Method, Chart demonstrations for better clarity of the processes and mechanisms.

2	13/02/2023	01/03/2023	Interaction of Fast Electrons - ionsation and radiative loss, backscattering. Interaction of Gamma rays, photoelectric absorption, Compton scattering and pair production. Attenuation coefficient. Interaction of Neutrons, Slowing down power, thermal neutrons, Sources of Background: Natural radioactivity, Air borne radioactivity, Primary and secondary Cosmic rays. General Properties of Radiation Detectors: Modes of detector operation, Current mode, pulse mode, Pulse Height Spectra	Lecture Method, PPT, Online Sources; Group Discussion, Chart demonstrations for better clarity of the processes and mechanisms.
3	03/03/2023	31/03/2023	Energy Resolution, Detection Efficiency, Dead Time- paralyzable and non- paralyzable models, Radiation Detectors: Ionization process in gases, Ion pair formation, fano factor, diffusion, charge transfer and recombination, Charge Migration and Collection. Gas-filled detectors: Gas Multiplication, avalanche formation, Regions of detector operation.	Lecture Method, PPT, Online Sources, Chart demonstrations for better clarity of the processes and mechanisms.

4	01/04/2023	29/04/2023	Proportional Counters, fill gases and choice of geometry. Geiger-Mueller counter, Fill Gases and Quenching mechanism, Recovery time and dead time, detection of charged particles, gamma and neutrons rays with G.M. counter, Scintillation Detectors: Organic and Inorganic Scintillators; Characteristics and parameters associated with Gamma ray spectrum Semiconductor detectors. Detection of slow and fast neutrons by neutron-induced reactions.	Lecture Method, PPT, Online Sources; Group Discussion, Chart demonstrations for better clarity of the processes and mechanisms.

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc. Other Methods adopted by the teacher – Please write the specific teaching method

** Dates for even semester are tentative; they can be varied according to Panjab University Academic Calendar Dates.