

ICMR Summer Program on Periodic Structures and Crystal Chemistry
 University of California, Santa Barbara
 July 27 – August 9, 2008

WEEK 1 TOPICS

Symmetry: Point symmetry using crystallographic notation Periodic symmetry, lattices. Space groups, line, layer and rod groups.

Crystal nets as graphs: Graphs, rings, ring sums, vertex symbols Quotient graphs and vector representation for periodic nets Symbols for nets, RCSR database

Taxonomy of nets: Transitivity. Regular, semi regular nets etc.
 Edge-transitive structures. Minimal nets, "self-dual" nets

Entanglements : interpenetration, polycatenation and more

Computer crystallochemical analysis with TOPOS (theory and practical applications on computer)

Sunday, July 27, 2008 – Lagoon Plaza, UCEN

5:30 pm to 7:30 pm	Reception and Registration
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Monday, July 28, 2008
 Lecture: Materials Research Lab, RM 2053
 Computer Lab: Engineering Sciences Building, RM 1003

7:15 am to 9:00 am	Breakfast at De La Guerra Dining Commons
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9:00 am to 10:30 am	Lecture
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10:30 am to 11:00 am	Break
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11:00 am to 12:30 pm	Computer Lab
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12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
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2:00 pm to 3:30 pm	Lecture
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3:30 pm to 4:00 pm	Break
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4:00 pm to 6:00 pm	Computer Lab
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5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
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Tuesday, July 29, 2008
 Lecture: Materials Research Lab, RM 2053
 Computer Lab: Engineering Sciences Building, RM 1003

7:15 am to 9:00 am	Breakfast at Carrillo Dining Commons
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9:00 am to 10:30 am	Lecture
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10:30 am to 11:00 am	Break
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11:00 am to 12:30 pm	Computer Lab
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12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
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2:00 pm to 3:30 pm	Lecture
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3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Wednesday, July 30, 2008 Lecture: Materials Research Lab, RM 2053 Computer Lab: Engineering Sciences Building, RM 1003	
7:30 am to 9:00 am	Breakfast at De La Guerra Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Thursday, July 31, 2008 Lecture: Materials Research Lab, RM 2053 Computer Lab: Engineering Sciences Building, RM 1003	
7:30 am to 9:00 am	Breakfast at De La Guerra Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
6:30 pm to 8:30 pm	Banquet Dinner at the Faculty Club
Friday, August 1, 2008	
OPTIONAL WORKSHOP – Materials Research Lab, RM 2053 PLEASE SEE SCHEDULE FOR WORKSHOP ON DESIGN AND SYNTHESIS OF NEW MATERIALS	
7:15 am to 9:00 am	Breakfast at Carrillo Dining Commons
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons

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Saturday, August 2, 2008 – Free Day	
OPTIONAL WORKSHOP PLEASE SEE SCHEDULE FOR WORKSHOP ON DESIGN AND SYNTHESIS OF NEW MATERIALS	
5:30 pm to 6:30 pm	Dinner served at the Carrillo Dining Commons during this time

WEEK 2 TOPICS	
Systre : barycentric coordinates, Symmetry Systre key, Embeddings, Collisions, local stability, ladders	
Tilings of nets: Natural tilings D-symbols enumeration of tilings (isohedral, face transitive, simple etc) Duals and self-dual structures	
Periodic surfaces: curvature, minimal surfaces P, D, G, H, CLP, I-WP etc Periodic surfaces in chemistry- liquid crystal, mesoporous etc	
EPINET : nets on hyperbolic plane, projections on 3-periodic surfaces, how to mine EPINET	

Sunday, August 3, 2008 – Free Day	
8:00 am to 9:00 am	Breakfast served at the Carrillo Dining Commons during this time
	Optional Excursion
5:30 pm to 6:30 pm	Dinner served at the Carrillo Dining Commons during this time

Monday, August 4, 2008 Lecture: Engineering Sciences Building, RM 1001 Computer Lab: Engineering Sciences Building, RM 1003	
8:00 am to 9:00 am	Breakfast at Carrillo Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons

Tuesday, August 5, 2008 Lecture: Materials Research Lab, RM 2053 Computer Lab: Engineering Sciences Building, RM 1003	
7:15 am to 9:00 am	Breakfast at Carrillo Dining Commons

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9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Wednesday, August 6, 2008 Lecture: Materials Research Lab, RM 2053 Computer Lab: Engineering Sciences Building, RM 1003	
8:00 am to 9:00 am	Breakfast at Carrillo Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Thursday, August 7, 2008 Lecture: Materials Research Lab, RM 2053 Computer Lab: Engineering Sciences Building, RM 1003	
8:00 am to 9:00 am	Breakfast at Carrillo Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Lunch at De La Guerra Dining Commons (Lunch served from 11:30 - 1:30)
2:00 pm to 3:30 pm	Lecture
3:30 pm to 4:00 pm	Break
4:00 pm to 6:00 pm	Computer Lab
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Friday, August 8, 2008 Lecture: Materials Research Lab, RM 2053	

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Computer Lab: Engineering Sciences Building, RM 1003	
8:00 am to 9:00 am	Breakfast at Carrillo Dining Commons
9:00 am to 10:30 am	Lecture
10:30 am to 11:00 am	Break
11:00 am to 12:30 pm	Computer Lab
12:30 pm to 2:00 pm	Barbecue Lunch at Goleta Beach Area D
5:45 pm to 7:15 pm	Dinner at De La Guerra Dining Commons
Saturday, August 9, 2008	
8:00 am to 9:00 am	Breakfast at Carrillo Dining Commons
8:00 am to 12:00 pm	Check Out from Manzanita Village