The lectures and lecture notes provide only an introduction to the principles and practice of image analysis. They are **NOT** comprehensive. An extensive set of optional 'reading' lists will guide you to references so you can obtain additional or more detailed descriptions of appropriate topics. To maximize the value derived from this course, it is most helpful to supplement the lectures and lecture notes with outside reading. Those references identified with the '•' symbol are recommended starting points.

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CRYSTALS, DIFFRACTION THEORY, AND FOURIER TRANSFORMS

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IMAGE ANALYSIS (Cont'd)

E. Three-dimensional Reconstruction from Electron Micrographs (*Cont'd*)

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IMAGE ANALYSIS (Cont'd)

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IMAGE ANALYSIS (Cont'd)

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IMAGE ANALYSIS (Cont'd)

E. Three-dimensional Reconstruction from Electron Micrographs (*Cont'd*)

Helical Structures – Examples of 3D Reconstruction Results (*Cont'd*)

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IMAGE ANALYSIS (Cont'd)

E. Three-dimensional Reconstruction from Electron Micrographs (*Cont'd*)

Helical Structures – Examples of 3D Reconstruction Results (*Cont'd*)

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IMAGE ANALYSIS (Cont'd)

E. Three-dimensional Reconstruction from Electron Micrographs (*Cont'd*)

Single Particles with Icosahedral Point Group Symmetry

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Single Particles with Icosahedral Point Group Symmetry (*Cont'd*)

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E. Three-dimensional Reconstruction from Electron Micrographs (Cont'd)

Single Particles with Icosahedral Point Group Symmetry (*Cont'd*)

Biological Results – Unstained, Vitrified Viruses (Cont'd)

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E. Three-dimensional Reconstruction from Electron Micrographs (Cont'd)

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Biological Results – Unstained, Vitrified Viruses (Cont'd)

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Single Particles with Icosahedral Point Group Symmetry (*Cont'd*)

Biological Results – Unstained, Vitrified Viruses (Cont'd)

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E. Three-dimensional Reconstruction from Electron Micrographs (Cont'd)

Single Particles with Icosahedral Point Group Symmetry (*Cont'd*)

Biological Results – Unstained, Vitrified Viruses (Cont'd)

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E. Three-dimensional Reconstruction from Electron Micrographs (Cont'd)

Single Particles with Icosahedral Point Group Symmetry (*Cont'd*)

Biological Results – Unstained, Vitrified Enzymes

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E. Three-dimensional Reconstruction from Electron Micrographs (Cont'd)

Single Particles with Non-Icosahedral Point Group Symmetries (*Cont'd*)

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IMAGE ANALYSIS (Cont'd)

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Single Particles with no Symmetry (*Cont'd*)

Biological Results: Ribosome (Cont'd)

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IMAGE ANALYSIS (Cont'd)

F. Correlation Averaging Procedures (Cont'd)

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IMAGE ANALYSIS (Cont'd)

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IMAGE ANALYSIS (Cont'd)

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