2017 High-Throughput Sequencing Course: Final Schedule

	Time/Date	Week 1 7/05-7/07	Week 2 7/10-7/13	Week 3 7/17-7/20	Week 4 7/24-7/27	Week 5 7/31-8/3	Week 6 8/7-8/10
	Location	**Hock 2nd Fl., CRTP Classroom**	**0032/0066 BioSci Lab**	**Hock 2nd Fl., CRTP Classroom**	**Hock 2nd Fl., CRTP Classroom**	**Hock 2nd Fl., CRTP Classroom**	**Hock 2nd Fl., CRTP Classroom**
Day1	9:00-10:15	No Class: 4th of July	Lab: Basics (JG, RG)/Computing (CC, JM)	DOE (YL,KO)	Counting method (KO, JX)	Data standards (JT, AM)	Pathway/Set-based Analysis (JX, KO, YL)
	10:30-11:45	No Class: 4th of July	Lab: Basics (JG, RG)/Computing (CC, JM)	DOE (YL,KO)	Counting method (KO, JX)	ISA & BioSharing, TCGA Data Resource (JT, AM)	Pathway/Set-based Analysis (JX, KO, YL)
	11:45-1:15	No Class: 4th of July	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
	1:15-2:30	No Class: 4th of July	Lab: Basics (JG, RG)/Computing (CC, JM)	Comput: R (JM, CC)	Comput: Simulation (CC, KO)	Clinical Terminology (JT, AM)	Gene Ontology (GO) (AM, JT)
	2:45-4:00	No Class: 4th of July	Lab: Basics (JG, RG)/Computing (CC, JM)	Comput: R (JM, CC)	Compute: reproducible analysis (CC, KO)	Timecourse, interaction (KO, YL, JM)	AMIGO (AM, JT)
Day2	9:00-10:15	Welcome and Introduction (ALL) + Review the project from last course (KO, CC)	Lab: library prep (JG, RG)	Stat: Estimation (KO, JM)	Stat: Multiple testing (AA, KO)	Ontologies (AM, JT)	Group work (KO)
	10:30-11:45	Docker + Intro to Jupyter (JM, CC)	Lab: library prep (JG, RG)	Stat: Sources of Variability (KO, YL, JM)	Stat: Multiple testing (AA, KO)	Ontologies (AM, JT)	Group work (KO)
	11:45-1:15	Lunch Break (Pizza)	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
	1:15-2:30	Comput: Intro to computing system, Linux (JM, CC)	Lab: library prep (JG, RG)	Comput: R graphics I(CC, JM)	Compute (CC, KO)	Microbiome Case Study (JG, JP)	Group work (JM)
	2:45-4:00	Comput: Intro to R (JM, CC)	Lab: library prep (JG, RG)	Comput: R graphics II (CC, JM)	Compute (CC, KO)	Microbiome Case Study (JG, JP)	Group work (JM)
Day3	9:00-10:15	Stat: Inference 1 (KO, JM)	Lab: library prep (JG, RG)	Stat: unsupervised learning (KO, YL, JM)	GLM for RNA-Seq (KO,YL)	Lecture: Burrows–Wheeler transform and Bowtie (RG,JG)	Group work (KO)
	10:30-11:45	Stat: Inference 2 (KO, JM)	Lab: library prep (JG, RG)	Stat: unsupervised learning (KO, YL, JM)	Expression Network (JX)	Hands-on: NGS preprocessing, QC 2 (JG, RG, KO)	Group work (KO)
	11:45-1:15	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
	1:15-2:30	R for stat inference 1 (JM, CC)	Lab: library prep (JG, RG)	Computing: Unsupervised (CC, JM)	Compute (CC, KO)	Hands-on: NGS pipline 1 (JG, RG, KO)	Group work (JM)
	2:45-4:00	R for stat inference 2 (JM, CC)	Lab: library prep (JG, RG)	Computing: Unsupervised (CC, JM)	Compute (CC, KO)	Hands-on: NGS pipline 2 (JG, RG, KO)	Group work (JM)
	Location	**Hock 11th Fl., 11025 Classroom**			**Hock 11th Fl., 11025 Classroom**		
Day4	9:00-10:15	Bio Intro Lecture (JG, HD)/Computing (CC, JM)	Lab: library prep (JG, RG)	Stat: Machine learning (KO, BG)	Lecture: Bioinformatics Pipeline Overview (JG, RG)	Human Genomics Case studies (KO, JG)	Slide preparation
	10:30-11:45	Bio Intro Lecture (JG, HD)/Computing (CC, JM)	Lab: library prep (JG, RG)	Stat: Machine learning (KO, BG)	Hands-on: NGS preprocessing, QC 1 (JG, RG, KO)	Human Genomics Case studies (KO, JG)	Presentation
	11:45-1:15	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
	1:15-2:30	HTS Background (JG,HD)	Lab: library prep (JG, RG)	Comput: supervised learning (CC, JM)	Big data and distributed computing I (CC, KO)	DESEQ2 (KO,JG)	Presentation
	2:45-4:00	RNA-Seq LibPrep Lecture (JG, HD)	Lab: library prep (JG, RG)	Comput: supervised learning (CC, JM)	Big data and distributed computing II (CC, KO)	DESEQ2 (KO,JG)	Presentation