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| **Name** | **CID** | **Supervisor** | **Assessor** | **Project Title** |
| Louis Brosnan | 01702415 | David Clements | Tim Evans | Simulating a Pandemic Using Networks |

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| **Week Commencing…** | **Planned** | **Notes** |
| 23/1 | Scale testing of limits to Networkx package capabilities  Basic analysis tools (degree dispersion, small world factor) to be coded and tested on basic networks |  |
| 30/1 | Sample networks that can be generated to specified size and style (shapes such as circles or connected graphs) for demonstration of concepts (described below).  Allow iteration through time |  |
| 6/2 | Basic infection spread models, vary infectivity, starting location and number of starting locations.  Create example plots and visualisations of spread.  Take baseline results |  |
| 13/2 | Splitting of transmission chance into meeting chance (connections strength) and infection chance  Justify assumptions of reduction or increase in infectivity (e.g. how much does a mask help, and asymmetric) |  |
| 20/2 | Add vaccination status, mitigations (e.g. quarantine, lockdown, masks).  Timed mitigation  Add recovery (to allow reinfection) [ZOE study] and death (funerals)/hospitalisation (to simulate stress on health service – ‘flatten the curve’)  Rules of the above through time |  |
| 27/2 | Choose modelling of either cities, countries or local offices etc  Real world network generation (WS, AB models, maybe decide our own)  Justify in report why we chose our particular network(s) |  |
| 6/3 | Analysis of data  Allow different disease types, with different infectivity (measles, flu etc) |  |
| 13/3 | Extensions: Add Latency of transmission  Write viva talks |  |
| 20/3 | Extension: Compare to real world results and try to match statistical information to reverse engineer information about the real-world network  Write viva talks |  |
| Term Break | Report Writing  Incorporate viva feedback |  |